AusNet Electricity Services Pty Ltd

Electricity Distribution Price Review 2016-20

Revised Regulatory Proposal

Submitted: 6 January 2016

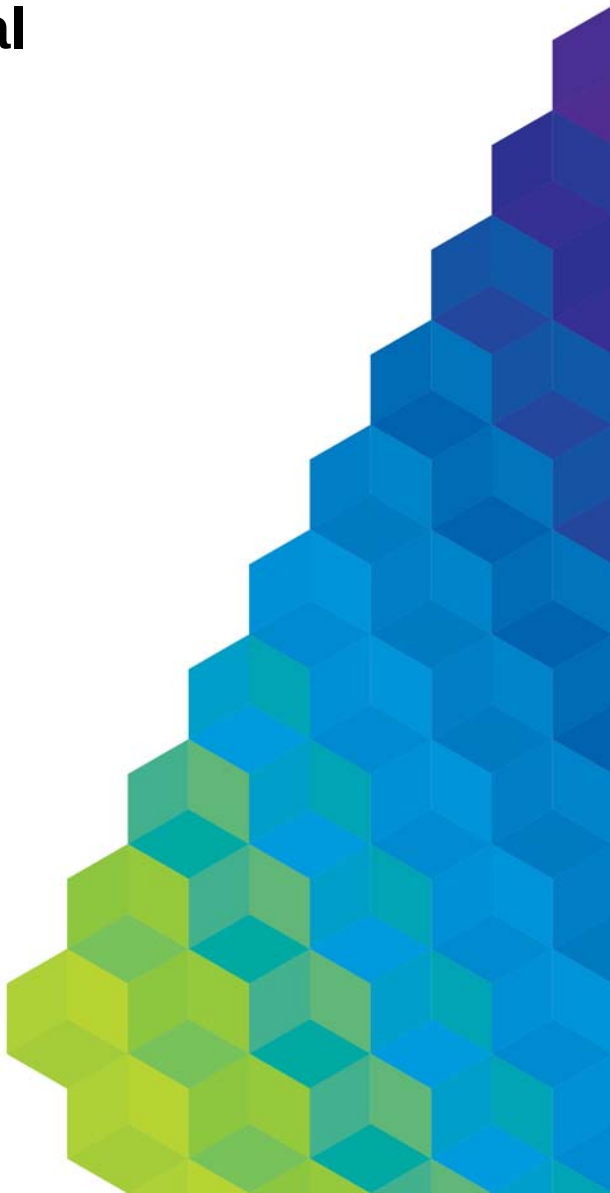

Table of Contents

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Overview

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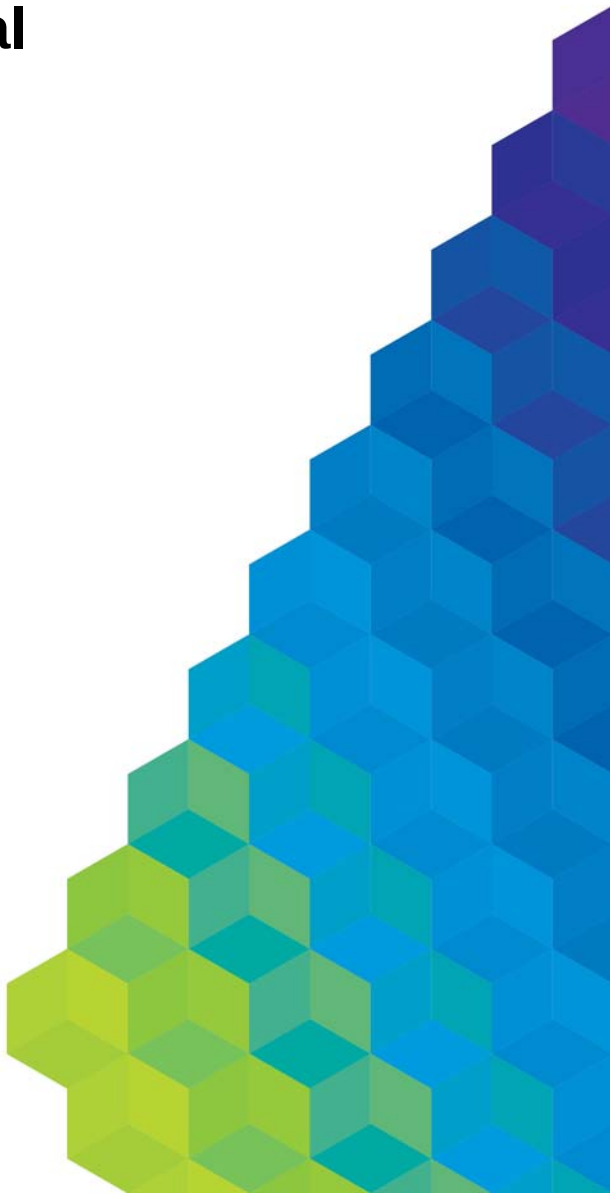

Overview

Introduction

On 30 April 2015 AusNet Services submitted to the Australian Energy Regulator (AER) its initial regulatory proposal (Initial Proposal) for its electricity distribution network for the 2016-20 regulatory control period. The AER published its Preliminary Decision on that proposal on 29 October 2015.

This document, together with supporting materials, constitutes AusNet Services' Revised Proposal.[1] The Revised Proposal responds to issues raised in the Preliminary Decision and updates AusNet Services' Initial Proposal for new information.

Importantly, AusNet Services' Revised Proposal is consistent with the priorities and the objectives set out in the Initial Proposal, including investing in innovation to lower costs (drive efficiency) and deliver benefits to customers and continuing to invest in bushfire safety.

Key Features of the Revised Proposal

In developing this response to the Preliminary Decision, AusNet Services has given careful consideration to the matters raised by the AER.

Overall, there are many areas of agreement between the AER's Preliminary Decision and AusNet Services' Initial Proposal. In this Revised Proposal, AusNet Services has accepted many of the adjustments adopted in the Preliminary Decision. However, there are several areas where AusNet Services considers the Preliminary Decision is not consistent with the NEO and the long term interests of consumers, including:

- Rate of Return and the Value of Imputation Credits – the allowed rate of return is not commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk as that which applies to AusNet Services in respect of the provision of standard control services. In addition, the value of imputation credits is over-estimated. The Revised Proposal updates AusNet Services' proposed rate of return for the latest interest rate information and to reflect material currently before the Australian Competition Tribunal which sets out that efficient financing costs should reflect those that would be incurred in a competitive market;
- Forecast Maximum Demand – the 2014 AEMO forecast applied in the Preliminary Decision is out of date. The Revised Proposal includes updated forecasts of maximum demand that reflect the latest Victorian Government projections of population growth and are consistent with the 2015 AEMO forecasts;
- Operating Expenditure for Self-insurance, Debt Raising and Labour costs – the Preliminary Decision erred by including the costs of the actual self-insured events that occurred in the base year, rather than the self-insurance premium. It also erred in its allowance for debt raising costs (DRC) and labour price escalation. The Revised Proposal includes a forecast of self-insurance costs that is based on the premium, a forecast of DRC based on revealed costs, and, an allowance for labour escalation that reflects AusNet Services' actual mix of labour and non-labour costs;
- Service classification – the Preliminary Decision wrongly classified certain costs that formed part of the Advanced Metering Infrastructure (AMI) roll-out in Victoria as Alternative Control Services (ACS), in a manner that is inconsistent with AusNet Services' Cost Allocation

[1] Formally, under Rule 11.60.4(b), this written submission constitutes AusNet Services' revisions to its regulatory proposal submitted in April 2015 (the Initial Proposal).

Methodology and Distribution Network Service Provider (DNSP) obligations set out in the NER[2];

- Value of the opening regulatory asset base (RAB) – the Preliminary Decision erred in its calculation of the opening RAB both in terms of the indexation to account for inflation, and the value of disposed assets;
- Forecast Inflation – the AER's forecast of inflation does not reflect current market expectations. Inflation has been forecast in the Revised Proposal using a market-based approach which is more consistent with inflation expectations given the current economic environment; and
- Incentive schemes – the Preliminary Decision erred in its calculation of STPIS and EBSS revenue adjustments and did not accept AusNet Services' proposed Demand Management Incentive Allowance (DMIA) of $10 million, despite strong stakeholder support.

The Revised Proposal also differs from the Preliminary Decision by:

- Clarifying areas of confusion (e.g. AusNet Services' categorisation of safety capex across categories of replacement and augmentation expenditure; scope details around some safety related capex projects; and the manner in which the demand and temperature relationship, and energy efficiency forecast are incorporated into AusNet Services' maximum demand forecast);
- Responding to aspects of the Preliminary Decision where the AER will require further information to implement their preferred approach (e.g. by including contingent projects for Rapid Earth Fault Current Limiter devices (REFCLs); and providing an ex ante forecast of costs to implement the Power of Choice Rule changes);
- Reflecting new information that was not available when AusNet Services' Initial Proposal was prepared. (e.g. maximum demand and connections forecasts updated for the latest population projections; updated labour price forecasts; and step changes for regulatory changes that have or are expected to occur in the near term); and
- Adopting a change in depreciation methodology to the 'year-by-year tracking approach', the same approach approved for three of the five Victorian DNSPs in their Preliminary Decisions.

As a consequence of the positions and updates set out above and detailed in the chapters of this submission, the Revised Proposal forecasts higher revenues than the Initial Proposal.

The higher revenue requirement is the result of revisions to the Rate of Return and forecast inflation. In other respects (absent the impacts of the higher Rate of Return and lower inflation forecast), the net impact of changes to the Initial Proposal is to reduce the revenue requirement, with the changes that increase required revenue being off-set by the aspects of the Preliminary Decision AusNet Services has accepted.

AusNet Services has accepted the following aspects of the Preliminary Decision that reduce the revenue requirement:

- Exclusion of $75.3 million of AMI communications / IT assets from the opening RAB. The lower opening RAB reduces the revenue requirements for depreciation, tax, and return on capital;
- Lower allowance for replacement driven capital expenditure (repex). AusNet Services has accepted $104 million of the $142 million repex cuts from the Preliminary Decision; and
- Lower accelerated depreciation allowance due to alternative valuation of assets involved. This results in a $29 million lower allowance for accelerated depreciation.

[2] AusNet Services has accepted the allocation of sunk AMI costs (pre 2016) to the opening metering RAB, but does not accept the AER's allocation of ongoing costs associated with core distribution systems that were modified as part of the roll-out of AMI.

The changes that increase AusNet Services' proposed revenue requirement are due largely to external drivers, including:

- Increased population growth, with consequent increases in customer connections and maximum demand forecasts;
- Inclusion of costs to address jurisdictional policy changes; and
- AER preferences regarding cost recovery mechanisms for costs where a degree of uncertainty exists (e.g. rejection of Power of Choice as a cost pass through event).

Jurisdictional policy is a major driver of the differences between AusNet Services' Revised Proposal and the Initial Proposal. The Victorian Government has flagged its intent to make policy changes in a number of areas in the near term, or in some cases, has recently finalised changes to policy. Areas of policy change that will affect AusNet Services' revenue requirement include:

- The response to the national metering contestability rule change;
- The adoption of the national framework (i.e. NER Chapter 5A) for customer connections;
- Regulatory amendments to implement VBRC recommendations (applying to the installation of REFCLs and requirements to underground or insulate conductor in nominated declared areas);
- The response to the national cost-reflective pricing rule change;
- A revised Guaranteed Service Level (GSL) scheme; and
- A revised F-factor scheme.

The timing of a number of these policy changes has made it difficult to:

- Provide precise estimates of cost impacts – in the case of two announcements made in late December 2015 (the final GSL scheme, and the derogation from national cost-reflective pricing rules), there was insufficient time for AusNet Services to reflect the latest obligations in this submission. AusNet Services intends to submit any necessary amendments once it has had time to consider the implications of these announcements; and
- Conduct meaningful consultation with customers over the manner in which AusNet Services responds to the new policies – AusNet Services will seek to support stakeholders who require further information on these matters in formulating their submissions.

Responding to Stakeholder Concerns

In formulating this submission, AusNet Services has considered the submissions the AER received from the Customer Challenge Panel (CCP) and stakeholders in response to the Initial Proposal, and matters raised at the Public Forum held on 22 June 2015.

The Revised Proposal addresses stakeholder concerns, the majority of which were addressed at the Victorian DNSPs collectively, including:

- Productivity trend:
  - Chapter 4 – Operating and Maintenance Expenditure (p.4-22) addresses concern over the declining productivity trend experienced in Victoria, and the flat productivity forecast.
- Maximum demand forecasts and historical augmentation expenditure:
  - While a number of stakeholders recognised AusNet Services' superior approach to demand forecasting in its Initial Proposal, there was a general view that DNSPs demand forecasts were inflated, and that DNSPs have over-invested in network augmentation resulting in excess capacity; and

  - Chapter 1 – Demand and Energy, and Chapter 3 – Capital Expenditure (Section 3.3.2) highlight the reasonableness of AusNet Services' maximum demand forecasts, and the lack of excess capacity in the distribution network. The concern of some stakeholders that there was insufficient evidence to support the forecast of 'growth pockets' within network areas is also addressed.

- Demand Management Innovation Allowance (DMIA):
  - Chapter 5 – Incentives (Section 5.6) highlights stakeholder's support for the DMIA proposed by AusNet Services.
- Transparency of capex drivers:
  - A number of submissions raised issues with clarity around categories of capex spending and the link to legislative / regulatory requirements; and
  - Chapter 3 – Capital Expenditure, in an effort to limit confusion, is structured to be directly comparable to the Preliminary Decision, breaking down total expenditure into the same categories used by the AER. The chapter also expands on the information presented in the Initial Proposal regarding the links between safety programs and the relevant obligations.
- Accelerated depreciation:
  - Chapter 9 – Depreciation (Section 9.3) addresses a concern raised by some stakeholders that customers may be paying accelerated depreciation on assets that remain in service, illustrating that this is not the case.
- Metering Services:
  - Chapter 11 – Metering Services (Section 11.2) addresses confusion over the roll in of some previous AMI costs to Standard Control Services (SCS), highlighting that this is not being proposed in the Revised Proposal.

AusNet Services was pleased with the broad acknowledgement it received for improving its consumer engagement, and will continue to work to improve its engagement practices.

Reading Guide

This Revised Proposal comprises 13 chapters and associated supporting material that address the components of AusNet Services' SCS revenue requirement and incentive mechanisms for 2016-20, and the basis for the various Alternative Control Services revenue and price decisions required for the 2016-20 period.

A brief description of the contents of each chapter is included below.

Chapter 1: Demand and Energy

This chapter sets out AusNet Services' Revised Proposal forecasts for customer numbers, energy and maximum demand.

The Preliminary Decision accepted AusNet Services' forecasts of customer numbers and energy consumption, but rejected the forecast of Maximum Demand. AusNet Services addresses the criticisms of its forecasting methodology, showing that the forecasts are arrived at on a reasonable basis and that the approach represents the best possible estimate in the circumstances.

The Revised Proposal uses AusNet Services' initial methodology and updates forecasts for the latest independent data on Victorian population growth.

Chapter 2: Revenue

This chapter summarises the building block components, total revenue and X-factors for AusNet Services' Revised Proposal. The total (unsmoothed) revenue requirement is $3,812.4 million (nominal).

The response to the Preliminary Decision regarding revenue reductions for shared assets is also included, highlighting the need to properly account for the consumer benefits from fibre optic cable. Due to increased revenue requirement from the Initial Proposal, the materiality threshold is only expected to be met in 2016, so that is the only year for which a revenue adjustment is applied.

Transitional arrangements mean that revenue smoothing is calculated in order to maintain the 2016 Preliminary Decision on maximum allowable revenue. This means that revenues are only able to be smoothed over a four year period.

Chapter 3: Capital Expenditure

AusNet Services' Revised Proposal includes $1,749.3 million (2015, real) for net capital expenditure (capex). Customer contributions are forecast to be $196.4 million (2015, real).

There is considerable agreement between the Preliminary Decision and AusNet Services' Initial Proposal. The Revised Proposal outlines differences to the Preliminary Decision that result from updated information, including changes to regulatory obligations, and from clarification of the basis and scope of specific projects within AusNet Services' Initial Proposal.

The Revised Proposal accepts the repex decision with the exception of two safety driven programs (worth $38.8 million) that were not funded in the Preliminary Decision. AusNet Services has also removed the government funded Powerline Replacement Fund programs from the gross repex included in the Preliminary Decision, and included new replacement capex to meet new obligations that ensure electric lines within 'declared areas' will be insulated or placed underground.

Preliminary Decision cuts to augex are rejected, as these cuts related to, firstly, the 56M Overhang Removal program which AusNet Services is under a specific regulatory obligation to complete, and, secondly, to an outdated maximum demand forecast that did not reflect the best forecast of maximum demand.

The Revised Proposal for capital expenditure includes updates resulting from a large number of external drivers. Updates to the Preliminary Decision for capex include:

- Demand-driven augex updated for the latest population growth;
- Repex updated to include additional capex for conductor replacement in declared areas (a new Victorian regulatory obligation);
- Contingent projects are proposed for the installation of REFCL technology (also due to a new Victorian regulatory obligation);
- Additional non-network capex for Power Of Choice Rule changes, following new detail of final Rule changes and the Preliminary Decision to reject AusNet Services' proposed cost pass through event; and
- Updated connections and customer contributions forecast for a new connections framework and latest population figures.

Revisions for cost escalation and to capitalised overheads are also included in the Revised Proposal.

Chapter 4: Operating and Maintenance Expenditure

AusNet Services' Revised Proposal includes $1,269.6 million (2015, real) for operating expenditure (opex). The forecast is largely consistent with that presented in the Initial Proposal. The outlook is for lower price escalation, but higher output growth due to more customers connecting to the network. The opex requirement for distribution communications and IT systems upgraded under AMI is higher due to the Preliminary Decision to reject capex that the Initial Proposal relied on. There is also additional opex required due to new and altered regulatory obligations, including higher GSL payments, the cost of adopting the new customer connections framework, and cost increases attributable to the Power of Choice Rule changes.

Aspects of the Preliminary Decision accepted in the Revised Proposal include:

- Base year opex, with the exception of adjustments for self-insurance, debt raising costs and inflation approach;
- The methodology for determining the rate of change, but not the real price change and maximum demand forecast inputs; and
- The approach to forecasting demand management opex and GSL costs.

The Revised Proposal rejects the allocation of costs for distribution business systems upgraded under AMI to ACS.

Chapter 5: Incentives

This chapter sets out the Revised Proposal with respect to the expenditure and performance incentive schemes that apply to AusNet Services.

In relation to expenditure adjustments that are inputs to AusNet Services' revenue allowance, the Revised Proposal includes $28.4 million for the Efficiency Benefit Sharing Scheme (EBSS) carryover, which removes an incorrect adjustment for movements in provisions from the Preliminary Decision and addresses an error in the calculation of inflation. Following strong stakeholder support, a $10 million DMIA is also included in the Revised Proposal, consistent with the Initial Proposal.

The Revised Proposal also includes some revisions to aspects of the Preliminary Decision on the performance schemes (including the Service Target Performance Incentive Scheme (STPIS), and the F-Factor Scheme) that will apply in the current regulatory period[3], such as to performance targets, incentive rates and exclusions. The amendments address a combination of new information and errors in the Preliminary Decision.

Chapter 6: Cost Pass Through

This chapter sets out the Revised Proposal for cost pass through events to apply for the current regulatory period. In addition to the nominated events approved in the Preliminary Decision, AusNet Services proposes the following events, versions of which were approved for the other Victorian DNSPs:

- Retailer insolvency event; and
- Insurer credit risk event.

In relation to the Power of Choice Rules Changes, the Revised Proposal highlights the inconsistency between the Preliminary Decision for AusNet Services (which rejected a nominated pass through event) and the Preliminary Decision for United Energy (which rejected an ex ante expenditure allowance) with the Rules that guarantee distributors a reasonable opportunity to recover their efficient costs. The Revised Proposal includes ex ante expenditure allowances for some Power of Choice Rule changes.

[3] The current regulatory period refers to the period 2016-20 regulatory control period, which commenced on 1 January 2016.

Chapter 7: Rate of Return and Gamma

The Revised Proposal includes a nominal vanilla WACC of 8.66%, based on a (pre-tax) cost of debt of 7.83%, a (post-tax) cost of equity of 9.90% and leverage of 60%. The value of imputation credits (gamma) is 0.25 and the forecast of inflation is 2.19%.

The gamma proposal is consistent with the Initial Proposal. The return on equity proposal responds to the AER's Preliminary Determination by adopting an alternative implementation of its 'foundation model' approach. The alternative implementation of the foundation model is more appropriate given current market conditions and the requirement for the AER to have regard to multiple sources of evidence.

In relation to the cost of debt, AusNet Services proposes immediate transition to the 10-year trailing average methodology. This is consistent with the efficient financing costs for the benchmark efficient entity in a workably competitive market and has been adopted by AusNet Services following consideration of the material presented in the NSW distribution merits review. To better reflect the likely outcomes of the annual updating process for the cost of debt, whereby earlier years drop-out of the average, AusNet Services has modelled a declining debt profile in the proposed revenues presented in this Revised Proposal.

In relation to forecast inflation, AusNet Services proposes that a forecasting method based on market data be adopted. This method has been applied by the AER in previous reviews and, in the current economic conditions, is the most appropriate means to ensure consistency between the inflation forecast used to make adjustments to cash flows and the forecast of inflation implied in the nominal rate of return.

Chapter 8: Opening Regulatory Asset Base

AusNet Services' Revised Proposal for the 2016 opening RAB is $3,444.6 million (2015, real). In material terms, the majority of the adjustments applied in the Preliminary Decision have been adopted, including:

- Reallocation of AMI communications / IT assets (-$75.3 million, nominal) from the SCS to the ACS metering RAB; and
- The half-year WACC removed from 2010 actual net capex (-$13.9 million, nominal).

AusNet Services does not accept the Preliminary Decision's:

- Preferred approach to applying inflation because it does not allow the real value of the RAB to be maintained; and
- Use of gross proceeds from sale of assets in place of their residual values for the purposes of adjusting the RAB for asset disposals in the roll forward model (RFM).

Chapter 9: Depreciation

AusNet Services' Revised Proposal for the depreciation allowance is $519.2 million (nominal). This allowance, which is higher than the Initial Proposal, reflects changes in other aspects of the Revised Proposal as well as specific changes to the approach to determining depreciation. AusNet Services' approach in the Revised Proposal:

- Accepts the AER's alternative estimate of the value of assets for which accelerated depreciation is being applied; and
- Proposes a change to the methodology for calculating depreciation, to adopt the 'year–by-year' methodology approved in the Preliminary Decisions for Jemena Electricity Networks (JEN), Powercor and CitiPower.

Chapter 10: Corporate Income Tax

AusNet Services has proposed corporate income tax for the current regulatory control period of $254.7 million (nominal).

With the exception of proposed value of imputation credits (Chapter 7), the Revised Proposal adopts the Preliminary Decision's approach to calculating the Corporate Income Tax Allowance.

The Revised Proposal for the Corporate Income Tax allowance also reflects changes in other aspects of the proposal.

Chapter 11: Metering Services

AusNet Services proposes a total revenue requirement for ACS Metering Services of $466.2 million (nominal). AusNet Services' Revised Proposal:

- Accepts the approved type 7 metering services charges, the price control mechanism for ACS, and the approved remote services charges;
- Does not accept the allocation of costs between SCS and ACS; and
- Proposes to increase metering opex and capex as a result of new information available and to be consistent with the assumptions underlying the Preliminary Decision, and to remove meter installation costs of new connections from metering costs.

Chapter 12: Alternative Control Services

AusNet Services accepts the Preliminary Decision with respect to:

- Fee Based and Quoted Services;
- The reclassification of dedicated public lighting services as an ACS; and
- The inclusion of new light types for regulation as Public Lighting.

The Public Lighting rates have been updated to reflect AusNet Services' Revised Proposal WACC.

Frangible Poles are proposed to be included as a standard pole type from 1 January 2017, following a request from VicRoads.

Chapter 13: Control Mechanism

AusNet Services accepts the Control Mechanism for Ancillary Services, and the intent of the Revenue Cap formulae for SCS.

The chapter outlines minor concerns within specific elements of the SCS control mechanism, and proposes some amendments.

AusNet Electricity Services Pty Ltd

Electricity Distribution Price Review 2016-20

Revised Regulatory Proposal

Chapter 1: Demand and Energy

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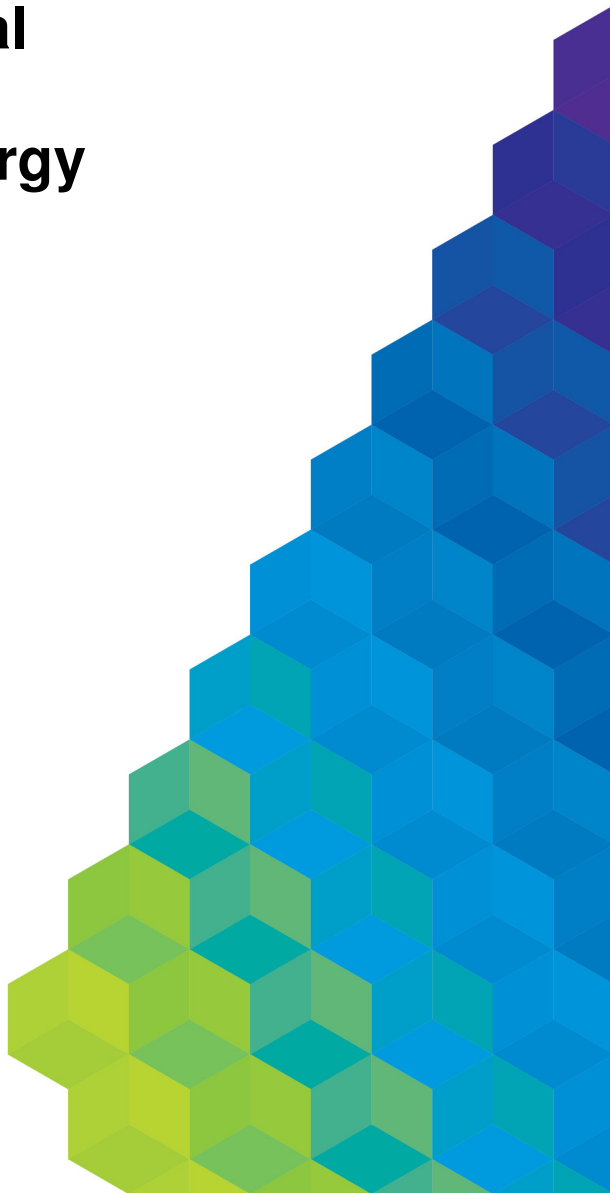

Chapter 1: Demand and Energy

This chapter sets out AusNet Services' response to the Australian Energy Regulator's (AER's) Preliminary Decision with respect to Energy, Demand and Customer number forecasts as set out in Attachment 6 – Capital Expenditure (and Biggar (2015) "An assessment of the Vic DNSP's demand forecasting methodologies"). AusNet Services' initial positions were set out in Chapter 4 – Demand and Energy of the Regulatory Proposal.

In the event of inconsistency between information contained in this chapter and AusNet Services' Initial Proposal, the information contained in this chapter prevails.

1.1 Introduction

The AER approved AusNet Services' forecasts for energy and customer numbers, but substituted the Australian Energy Market Operator ("AEMO"s) maximum demand forecasts for those of AusNet Services. AusNet Services had forecast growth in demand of 1.1% over the 2016-20 regulatory period, whereas the adoption of AEMO's forecasts resulted in a flat demand (i.e. zero growth) forecast in the Preliminary Decision.

The primary reasons the AER cited for preferring AEMO's forecast to AusNet Services' were:

- AusNet Services' methodology did not adequately take into account changes in the relationship between temperature and demand over time;
- AusNet Services assumes that new energy efficiency initiatives come to an end in 2020;
- AusNet Services' 10-year weather sampling period for establishing the probability of exceedance levels is not long enough; and
- Maximum demand had fallen between 2009 and 2012 and whilst demand grew in both 2013 and 2014, the AER did not believe this indicated that demand would continue to grow.

AusNet Services does not accept the AER's demand forecast for the 2016-2020 period for the following reasons:

- The AER erred when it concluded that the AusNet Services forecast was not reasonable;
- The AER used outdated AEMO demand growth forecasts;
- The latest AEMO forecasts are aligned to AusNet Services' forecasts; and
- Updated forecasts for customer numbers and maximum demand have become available as a result of new population forecasts published by the Victorian Government in August 2015.[1]

Once the new population forecasts, referred to above, are incorporated into AusNet Services' forecasts, the customer growth rate included in the Initial Proposal increases from 1.5% per annum to 1.7% per annum. Similarly, the maximum demand growth rate in the Initial Proposal increases from 1.1% per annum to 1.3% per annum[2] for the 2016-20 regulatory period.

The remainder of this chapter is structured as follows:

- Section 1.2 sets out AusNet Services' response to the Preliminary Decision on customer number forecasts and its revised customer number forecast;

1 Department of Environment, Land, Water and Planning, *Victoria in Future 2015*, Victorian State Government, August 2015.

2 Non-coincident summer demand, POE10.

- Section 1.3 sets out AusNet Services' response to the Preliminary Decision on maximum demand forecasts and its revised maximum demand forecast; and
- Section 1.3 sets out AusNet Services' response to the Preliminary Decision on energy consumption forecasts and its revised energy consumption forecast.

The information set out in this chapter accords with all the applicable requirements of the National Electricity Rules (NER).

1.2 Customer Number Forecasts

1.2.1 Preliminary Decision

The AER accepted AusNet Services' customer number forecasts in the Preliminary Decision. AusNet Services had forecast total average customer growth of 1.5% p.a. over the 2016-20 regulatory period, with residential customer growth of 1.77% p.a. The table below contains the customer forecasts which were accepted by the AER in the Preliminary Decision.

Table 1.1: Customer number forecasts – Initial Proposal

Customer type	2016	2017	2018	2019	2020
Residential	626,609	637,929	649,134	659,942	670,684
Commercial	67,129	66,911	66,695	66,491	66,289
Industrial	2,385	2,475	2,564	2,651	2,737
Total	**696,123**	**707,315**	**718,393**	**729,084**	**739,710**

Source: AusNet Services

1.2.2 Response to Preliminary Decision

Subsequent to the submission of our Initial Proposal, the Victorian Department of Environment, Land, Water and Planning (DELWP) released updated population and household projections for Victoria. As noted in AusNet Services' Demand Forecasting methodology,[3] AusNet Services reconciles its customer forecasts to the household forecasts published by DELWP. This methodology was accepted by the AER in the Preliminary Decision. The AER's demand forecasting report, written by Mr. Darryl Biggar, noted that:[4]

> *"AusNet's approach is probably strongest in regard to forecasting growth rates into the future. The use of S-curves should reduce the likelihood of over-estimating growth in regions which are approaching their natural growth limits."*

As the DELWP projections are a key input to AusNet Services' customer forecasting methodology, a change in the DELWP forecasts presents an opportunity for AusNet Services' customer number forecasts and demand forecasts to be made current and, consequently, more accurate. AusNet Services' practice of reconciling to the DELWP forecasts was accepted by the AER in its 2008-2012 Gas Access Arrangements Review (GAAR). In its Draft Decision on the GAAR, the AER instructed AusNet Services (then SP AusNet) to amend its demand forecasts to account for an update to the DELWP[5] forecasts, as the AER considered:[6]

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3 AusNet Services, *Demand Forecasting Methodology (Electricity Distribution Network)*, April 2015, p. 17.

4 Biggar, D., *2015 Victorian Electricity Distribution Pricing Review: An assessment of the Vic DNSP's demand forecasting methodology*, September 2015, p. 30.

5 Then the Department of Planning and Community Development.

6 Australian Energy Regulator (AER), *Access Arrangement draft decision, SPI Networks (Gas) Pty Ltd, 2013-17, Part 2, Attachments*, September 2012, p. 195.

"…that to produce forecasts that are arrived at on a reasonable basis and represent the best estimate possible in the circumstances, it is appropriate to use the most current relevant data."

The projections published by DELWP indicate that household growth in the Local Government Areas (LGAs) in which AusNet Services operates will increase by 1.99% per annum over the 2016-2021 period (this is the time period used by DELWP). DELWP attributes this higher growth in Victoria to Commonwealth Government forecasts of Net Overseas Migration and recent analysis of fertility rates. Within AusNet Services' region, the LGAs of Whittlesea, Casey and Cardinia continue to have the strongest growth, although change in growth is much more pronounced in Casey. Outside of metropolitan Melbourne, the Baw Baw shire is also expected to grow much more strongly than previously forecast.

One area that Mr. Biggar was uncertain of was how AusNet Services forecasts customer numbers in regions where there is an observed decline in population. Where this is the case, AusNet Services' customer forecast 'S-curves' would in effect be inverted, and continue to forecast a decline along the relevant curve. It is important to note that in AusNet Services' region, there is no LGA that has a forecast population decline according to the DELWP forecasts.

Whilst the LGAs in AusNet Services' area are predicted to experience annual household growth of 1.99%, some of these LGAs are shared between AusNet Services and other DNSPs. Therefore, residential growth in AusNet Services' region is not expected to grow by exactly this amount. AusNet Services' revised customer forecast is for residential growth of 1.89% per annum over the regulatory period, whilst the non-residential customer group will remain largely unchanged compared to the Initial Proposal.

At a total level (inclusive of residential and non-residential customers), AusNet Services expects its customer base to grow at 1.7% per annum over the regulatory period. This compares to 1.5% annual growth in the Initial Proposal and is a direct consequence of the higher DELWP household projections.

1.2.3 Revised Proposal

The table below contains AusNet Services' revised customer number forecasts.

Table 1.2: Customer number forecasts – Revised Regulatory Proposal

Customer type	2016	2017	2018	2019	2020
Residential	628,647	640,986	653,605	665,634	677,596
Commercial	67,071	66,824	66,569	66,330	66,093
Industrial	2,399	2,496	2,595	2,690	2,784
Total	**698,117**	**710,306**	**722,768**	**734,653**	**746,474**

Source: AusNet Services

As noted in the table above, total customer numbers are forecast to increase by 6,764 customers by the end of the regulatory period relative to the Initial Proposal. This represents a 0.9% increase in the total number of customers compared to AusNet Services' Initial Proposal.

1.3 Maximum Demand Forecasts

1.3.1 Preliminary Decision

The AER did not accept AusNet Services' forecast of maximum demand in the Preliminary Decision. Instead, the AER substituted the connection point[7] forecast prepared by AEMO in 2014. This resulted in a lower maximum demand forecast, as AusNet Services had forecast maximum demand growth of approximately 1.1% per annum across its network, whereas the 2014 AEMO forecast was for flat demand at the network level.

Despite the AER's endorsement of AusNet Services' ability to forecast appropriate growth rates, the AER considers that AusNet Services' maximum demand forecast has the following shortcomings:

- AusNet Services' methodology did not adequately take into account changes in the relationship between temperature and demand over time;
- AusNet Services assumed that new energy efficiency initiatives come to an end in 2020; and
- AusNet Services' 10-year weather sampling period for establishing the probability of exceedance levels was not long enough.

The AER further argued that AusNet Services' raw (non-weather normalised) maximum demand fell in the three years from 2009 to 2012. Whilst maximum demand increased in 2013 and 2014 – with 2014 maximum demand exceeding 2009 – the AER did not consider this reflected a return to long term growth.

Finally, AusNet Services' Initial Proposal included a comparison to AEMO's 2014 forecasts and outlined a number of concerns that AusNet Services had with AEMO's forecasts. In its Preliminary Decision, the AER did not address AusNet Services' claims regarding AEMO's forecast, however, it stated that it had taken these concerns into account. The AER concluded that the AEMO approach more accurately reflected long term trends and, therefore, adopted the AEMO forecasts in the Preliminary Decision.

1.3.2 Response to Preliminary Decision

AusNet Services does not accept the AER's Preliminary Decision on maximum demand forecasts. AusNet Services believes that the AER has committed several errors of fact and has erred in its judgement on several matters. AusNet Services' response to the Preliminary Decision is presented below. Firstly, the overarching merits of AusNet Services' forecast is set out; then specific criticisms raised by the AER in the Preliminary Decision are addressed.

AusNet Services' forecasts

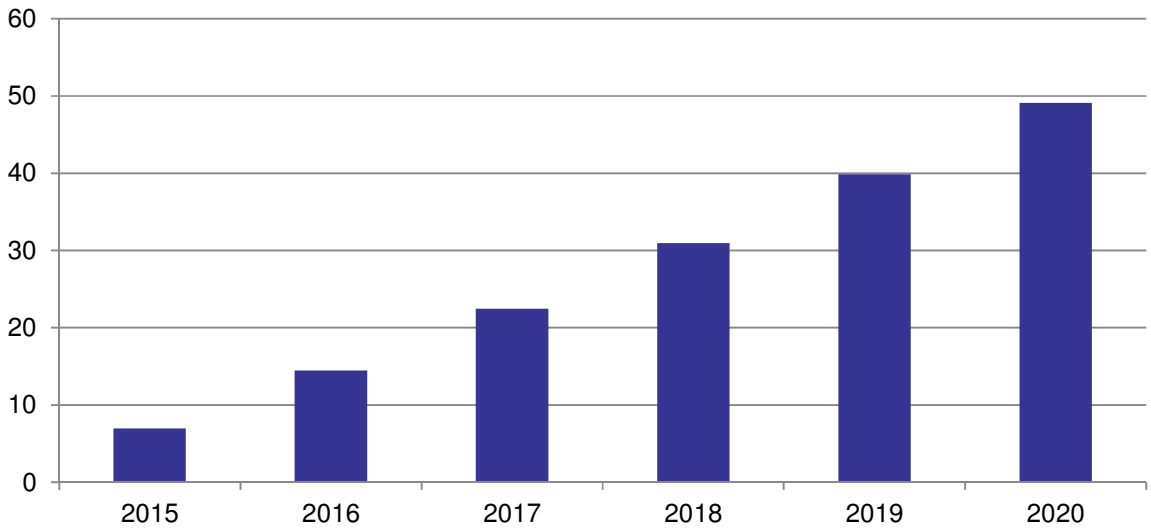
As noted in the AER's Preliminary Decision, AusNet Services and the other DNSPs have used sophisticated methodologies to prepare their maximum demand forecasts. Further, as the AER has acknowledged, AusNet Services' methodology incorporates a variety of techniques that sets it apart from the other Victorian DNSPs, such as the use of S-curves for customer forecasts and demand-temperature correlations and the explicit recognition that new customers are more energy efficient than existing customers.

AusNet Services' demand forecasting methodology used for the Initial Proposal resulted in a forecast 1.1% annual increase in demand over the course of the 2016-20 regulatory period. As noted above, over the same period, customer growth in AusNet Services' network was forecast to increase by 1.5% per annum. That is, AusNet Services forecasted that customer growth will outpace demand growth. This is due to many factors, but a key factor is energy efficiency (from both

[7] For the purposes of this discussion, a connection point is equivalent to a terminal station.

technology/appliances and changing consumer behaviour). The figure below indicates that were it not for energy efficiency assumptions in AusNet Services' model, the demand forecast would be approximately 50MW higher at the end of the regulatory period than AusNet Services had forecast.

Figure 1.1: Impact of energy efficiency on AusNet Services' demand forecast (MW)



Source: AusNet Services

AEMO's 2015 connection point forecasts, which were published before the AER released its Preliminary Decision, supported AusNet Services' Initial Proposal forecast.[8] In AEMO's 2015 forecast, maximum demand in AusNet Services' region was forecast to grow at 0.9% per annum, only 0.2% per annum different from AusNet Services' Initial Proposal forecast. The primary reason for the difference at the network level was Morwell Terminal Station. Whilst AusNet Services has forecast continued growth at Morwell Terminal Station, AEMO has forecast a downward step change in 2016/17 of 9%, after which the load continues to grow on an annual basis. This difference in forecast may be due to differing assumptions used by AusNet Services and AEMO with regards to the future industrial outlook in the region served by Morwell Terminal Station.

Regarding Morwell, it is important to note that none of AusNet Services' forecast augmentation capital expenditure was in areas serviced by that terminal station. Excluding Morwell from both AEMO's and AusNet Services' forecasts, AusNet Services' forecast demand growth would be 1.2% annually over 2016-2020, whilst AEMO's forecast growth would be 1.5% per annum.[9] That is, once the impact of different assumptions about growth at Morwell Terminal Station is removed, AEMO's demand forecast was actually *higher* than AusNet Services' forecast.

Out of the five Victorian DNSPs, the only DNSP to have its demand forecast accepted by the AER was Jemena. The AER's Issues Paper,[10] published after the DNSPs had submitted their Initial Proposals, set out each DNSP's demand forecast and compared them to AEMO's 2014 forecasts. This information is presented in the table below.

8 Australian Energy Market Operator (AEMO), *2015 AEMO Connection Point Forecasting Report for Victoria*, September 2015.

9 For the avoidance of doubt, the AEMO forecast referred to in this paragraph is the 2015 AEMO forecast.

10 AER, *Issues Paper, Victorian electricity distribution pricing review, 2016 to 2020*, June 2015, p. 11.

Table 1.3: Maximum demand forecasts by DNSP

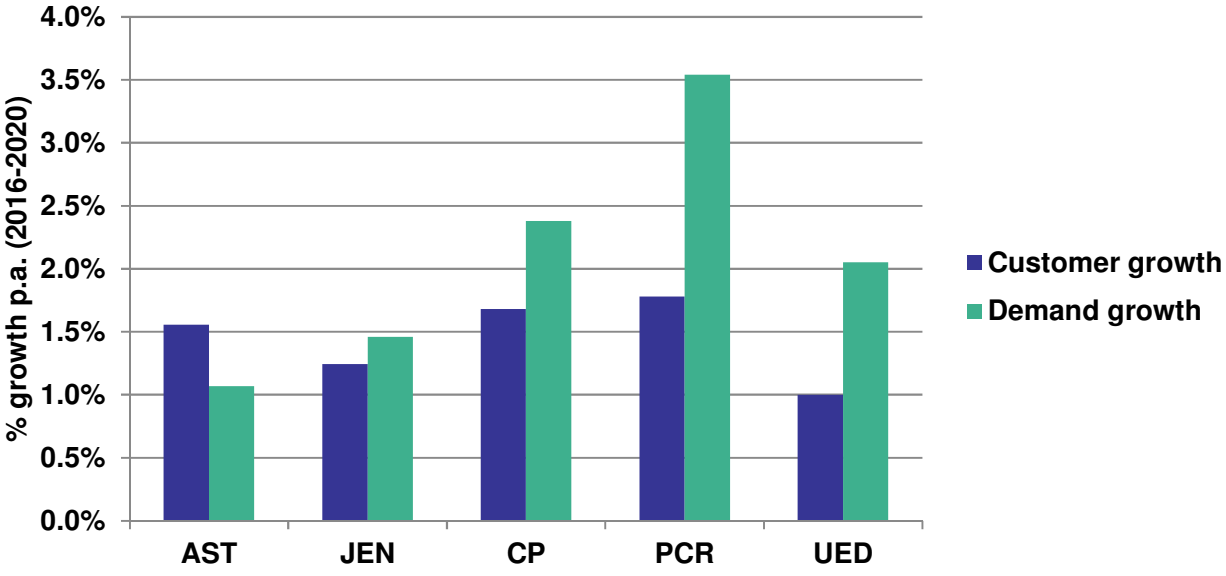
DNSP	Regulatory Proposal Forecasts	AEMO forecast (2014)
AusNet Services	1.07%	-0.09%
CitiPower	2.38%	0.40%
Jemena	1.46%	-0.10%
Powercor	3.54%	0.27%
United Energy	2.05%	0.14%

Source: AER Issues Paper

As can be seen from the table above, AusNet Services had the lowest demand forecast of any DNSP and was also the closest to AEMO's 2014 forecast demand (albeit with differing expectations of growth/decline). It is therefore unclear why the AER considered AusNet Services' demand forecast unreasonable. In light of its acceptance of Jemena's forecast as reasonable, AusNet Services' forecast should also be assessed as reasonable.

Further, since maximum demand is driven by, amongst other things, customer growth, it is instructive to compare the forecast growth in demand to the forecast growth in customers. Growth rates from the five DNSPs' Initial Proposals are presented in the figure below, as taken from the AER's Issues Paper.[11] Lending further weight to the conservatism of AusNet Services' demand forecasts is the fact that AusNet Services was the only DNSP to forecast that demand would grow less strongly than the customer base, implying that per capita demand will fall over the 2016-20 regulatory period. The AER has failed to adequately explain its justification for concluding that AusNet Services' demand forecast is inappropriate in light of compelling evidence to the contrary.

Figure 1.2: Demand growth v. customer growth – Initial Proposals



Source: AER Issues Paper

[11] Ibid, pp. 9,11.

For the reasons described above, AusNet Services believes that the AER erred in setting aside its maximum demand forecasts and substituting outdated 2014 AEMO forecasts. AusNet Services' demand forecasts, based on the information it had at the time, were the most reasonable forecasts available to the AER. The fact that AEMO's 2015 forecasts are closer to AusNet Services' forecasts than AEMO's 2014 forecast reinforces this position.

As referred to above, since the submission of AusNet Services' Initial Proposal, the Victorian Government has released a new set of population and household growth forecasts. These new household projections have been included in AusNet Services' demand forecast model to produce a revised set of demand forecasts, which is explained further at the end of this chapter.

Addressing the AER's Preliminary Decision

This section addresses the points raised by the AER in setting aside AusNet Services' forecast of maximum demand.

Changing demand-temperature relationship

One of the primary reasons for not accepting AusNet Services' maximum demand forecasts was that, in the AER's view, AusNet Services had not reflected the changes in the relationship between temperature and demand over time. This assumption led the AER to conclude that the demand-temperature relationship used by AusNet Services:[12]

> *"…may not reflect a stable, robust relationship, especially since other evidence suggests that this curve has been shifting down over time (due to investment in solar PV and increasing energy efficiency)."*

This conclusion is incorrect as it is based on a misunderstanding of AusNet Services' methods. The demand-temperature S-curve used by AusNet Services contains daily data for each feeder over a period of approximately five years. To suggest, as the AER does, that the data used to produce AusNet Services' demand S-curves are made up entirely of 2009 observations is false – the data points used to fit the curves could and do come from any particular date in the data set and in any event, only observations from late 2009 are included in the data set for most feeders. In addition, any outliers (where the demand for a given temperature is more than two standard deviations from the mean), are automatically excluded from the analysis, such that rare demand-temperature observations will not inform AusNet Services' forecasts.

Further, as ACIL Allen's report on AusNet Services' forecasting methodology notes, in section 3.3.2 titled *Changing 'demand' efficiency*, "The second aspect of AusNet Services' analysis of demand per customer is to consider the rate at which this has changed in recent years."[13] ACIL Allen's report goes on to describe the methodology used by AusNet Services to factor in the changes in demand patterns over recent years. This was also explained in AusNet Services' Initial Proposal in Box 4.2 in the Demand and Energy chapter of the Initial Proposal.[14]

In AusNet Services' demand forecasting model, as new customers connect to the network, they are modelled as having a different demand profile that incorporates the changes observed and forecast to continue until 2020. At the same time, the demand profile for the existing customer base changes over time to reflect that of the new customers connecting to the network. The chart presented in Box 4.2 of the Initial Proposal is reproduced below, and shows that new customers are forecast to have a different demand profile for a given temperature and that the existing customer base transitions to this profile over time.

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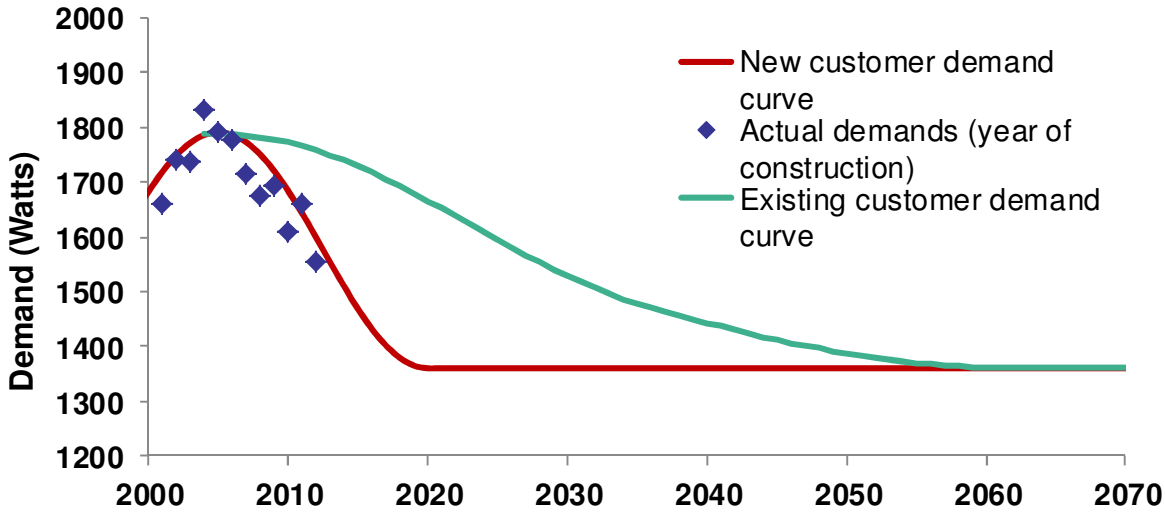
12 AER, *Preliminary Decision, AusNet Services distribution determination 2016-2020, Attachment 6 – Capital expenditure*, October 2015, pp. 6-104.

13 ACIL Allen Consulting, *Distribution demand forecasting: Comparison of AusNet Services and ACIL Allen methodologies*, April 2015, p. 13.

14 AusNet Services, *Electricity Distribution Price Review 2016-20, Regulatory Proposal*, April 2015, p. 76.

Figure 1.3: Changing demand profiles by construction year



Source: AusNet Services

If AusNet Services were not taking into account the changes in the demand-temperature relationship over time, then AusNet Services' demand forecast growth would not be lower than the forecast customer growth. The reason why demand growth is lower than customer growth is because AusNet Services ensures that changing demand patterns over time are incorporated into the forecasts.

Energy efficiency forecasting

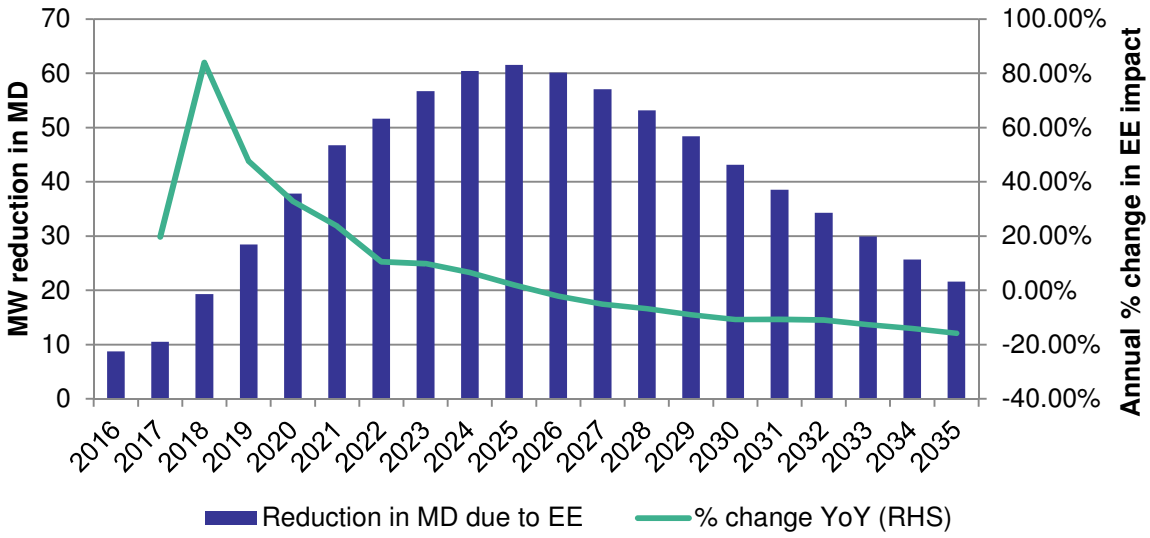
Regarding energy efficiency, the AER is critical of AusNet Services' assumption that new energy efficiency measures will cease to have a material impact on maximum demand from 2020 onwards (refer Figure 1.3, above). Again this is a misunderstanding of the methodology as AusNet Services does not assume that there is no reduction in demand due to energy efficiency from 2020 onwards, just that *new* energy efficiency initiatives, technologies, etc., will not have a further impact on maximum demand. That is, in AusNet Services' forecast, the contribution of energy efficiency to maximum demand is actually accelerating until 2020, and continues to grow after that point, but at a slower rate than before, because the growth is comprised of the existing customer base converting to the 2020 standard over time.

AusNet Services has not selected 2020 arbitrarily, rather it is an outcome of another s-curve process that uses the historic observations and predicts where energy efficiency will 'saturate'. It is not reasonable to suggest that the current trend in energy efficiency will continue into the foreseeable future because most of the relatively attainable opportunities have already been realised (LED lighting, one-watt standby, etc.). It is not clear what the AER assumes will be the new initiatives implemented from 2021 onwards that will make new premises more and more efficient, or why this position is more reasonable than AusNet Services' prediction (based on its modelling) that energy efficiency initiatives will reach their limit in 2020.

In fact, AEMO appears to incorporate similar reasoning to AusNet Services in its forecasts. AEMO's 2015 National Electricity Forecasting Report forecast the contribution of energy efficiency growing strongly until 2021 (growth rates of >10% per annum), and then having a markedly lower impact thereafter.[15] This is exactly what AusNet Services' model suggests – by 2020 the impact of 'new' energy efficiency initiatives will fall away and the remaining population will slowly convert to a more energy efficient profile, with a consequential slowdown in the contribution of energy efficiency to maximum demand.

[15] Australian Energy Market Operator (AEMO), *Forecasting Dynamic Interface*, http://forecasting.aemo.com.au/MaximumDemand/Operational, accessed 27 November 2015.

Figure 1.4: Contribution of energy efficiency to maximum demand – AEMO (MW and % change year-on-year)



Source: AEMO 2015 Connection Point Forecasting Dynamic Interface

Demand trends from 2009

The AER has used non-weather normalised demands to detect a downward trend in maximum demand between 2009 and 2012. The AER has dismissed the fact that 2014 demand was higher than 2009, arguing that:[16]

> *"While there was some growth in demand between 2013 and 2014, this does not necessarily indicate a return to longer term growth in demand."*

The AER has selected a starting point which makes it virtually impossible to discern an underlying trend in demand. Maximum demand in 2009 was exceptionally high due to the extremely high temperatures recorded in that year. At the Scoresby weather station, a key weather station in AusNet Services' network, a maximum temperature of 46.1 degrees was recorded in 2009. In the next three years, the recorded maximum temperatures were 42.1, 38.9 and 39.0 degrees respectively. In 2013 and 2014, maximum temperatures were both above 40 degrees – 40.1 and 42.4 and there was an associated increase in demand. It is also worth noting that there was an increase in demand between 2006 to 2009, meaning the AER has focused on one three year period of declining demand and ignored increases in demand both before and after this period.

That demand in 2014 exceeded 2009 despite lower temperatures is strongly suggestive of an underlying trend of demand growth. AusNet Services again notes that the AER accepted Jemena's maximum demand forecast whilst it rejected AusNet Services' despite Jemena's actual demand data following a similar pattern to AusNet Services' between 2009-2014. Based on its acceptance of Jemena's forecast, it should also accept AusNet Services'. A rejection of AusNet Services' forecast is inconsistent decision making given there is no reasonably discernible grounds for making a distinction between the two forecasts.

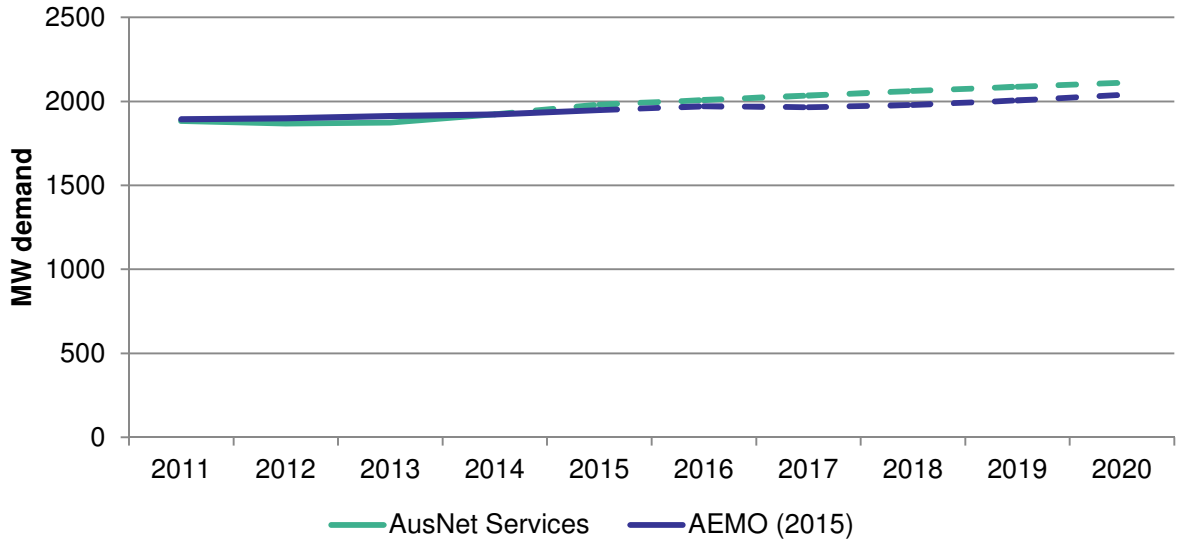
Weather-normalising demand is an inexact science and will differ depending on the methodology employed. However, both AusNet Services and AEMO agree that weather-normalised demand has been growing since 2009.[17] AEMO does not have weather-normalised demands for all terminal

16 AER, *Preliminary Decision, Attachment 6 – Capital expenditure*, October 2015, pp. 6-96.

17 In order to estimate the weather corrected demand, AusNet Services has applied a scaling factor using its temperature-demand s-curves for those zone substations that peak in summer. That is, the actual demand observed has been adjusted up or down depending on where on the s-curve the peak temperature sat relative to the POE10 temperature. Demands from winter peaking zone substations were left unchanged.

stations going back to 2009, but for those terminal stations that do, the POE10 weather-normalised demand has increased since 2009 and this trend is expected to increase in the 2016-20 regulatory period. All terminal stations have AEMO data back to at least 2011 and again, there is a clear trend of increasing demand, which is expected to continue.[18] The figure below compares AusNet Services' and AEMO's POE10 weather normalised actual demand and POE10 summer demand forecast for the period 2011-2020 (the period over which AEMO's data is available for all of AusNet Services' network). The two forecasts are very similar, with the Morwell-influenced reduction in 2017 apparent in the AEMO data series.

Figure 1.5: AEMO weather-normalised demand (non-coincident, summer POE10, all AusNet Services terminal stations, 66kV only) – actual and forecast



Source: AusNet Services; AEMO 2015 Connection Point Forecasting Dynamic Interface

The analysis above shows that the AER erred in its analysis of demand trends over the period 2009 to 2014, which was a key factor in the AER setting aside AusNet Services' proposed growth of 1.1% per annum. To begin with, the AER selected 2009 as its starting point without conducting any analysis on how weather might have influenced demand in 2009 and subsequent years. It then ignored the AEMO weather-normalised data which was both available to it (since the AER adopted the AEMO forecasts) and showed an increasing trend of weather-normalised demand. Finally, the AER gave no reason why the three-year declining trend in raw (non-weather normalised) demand from 2009-2012 was a better indication of long term trends than the two-year increasing trend from 2012-2014 and the prior three-year increasing trend from 2006-2009. The AER conclusion is not justified.

Weather sampling period

The AER has argued that AusNet Services' use of a 10 year period for estimating the impact of weather is inappropriate and a longer time series should be used. There are positives and negatives to using a longer time period to derive the weather inputs required for the development of probabilistic (e.g. POE10, POE50) forecasts. On the one hand, a longer time series provides more data points on which to base conclusions. On the other, doing so entails the implicit assumption that recent weather conditions are not a more accurate prediction of weather in the next 10 years.

AusNet Services has seen an increasing trend of warming temperatures over the last 10-15 years and considers that a shorter sampling period is more likely to be reflective of future weather

[18] AEMO, *Dynamic interface for connection points in Victoria*, http://www.aemo.com.au/Electricity/Planning/Forecasting/AEMO-Transmission-Connection-Point-Forecasting/Transmission-Connection-Point-Forecasting-Report-for-Victoria, accessed 27 November 2015.

conditions. Out of the top 10 annual maximum temperatures recorded at Scoresby weather station (a key weather station for our urban forecasts), going back to 1965, four have been recorded in the last 10 years (and for the top 20, eight in the last 10 years). This is double the rate that would be expected if temperatures were remaining constant.

AusNet Services believes that the weather conditions in the 2016-20 regulatory period are more likely to reflect the weather experienced in the last 10 years than the last 30 years. This is not just AusNet Services' opinion – at the 'Climate Change in Australia' website[19], users can compare the predictions of several long term weather models for metrics such as 'number of days with a maximum temperature above *x* degrees.' When comparing these models to actuals from 1980-2010, all of the models predict a higher number of annual days above 41 degrees for Melbourne in the period 2016-2045 than the 30-year historical actuals have recorded.

AusNet Services considers that using weather data going back to the 1980s to inform demand forecasts does not adequately incorporate the climate change experienced in recent years and expected to continue. The evidence, which is consistent across multiple independent weather models, indicates that the hotter temperatures experienced in recent years are more likely to continue, rather than to return to conditions that were experienced 15-30 years ago. By citing AusNet Services' shorter weather sampling period as one of the reasons to set aside AusNet Services' forecasts, the AER has erred by failing to take into account relevant material before it.

AEMO forecasts

The 2014 Victorian connection point forecast by AEMO was the first time AEMO had published its own demand forecasts for each DNSP's terminal stations. AEMO has recognised that its forecasting methodology can be continuously improved and has held several sessions with industry stakeholders seeking their views on areas for potential improvement. These sessions have been a very useful forum to exchange ideas and better understand AEMO's approach to forecasting.

In its Initial Proposal, AusNet Services set out a number of areas of disagreement between it and AEMO with respect to comparing AusNet Services' forecasts to AEMO's 2014 connection point forecasts.[20] The AER stated that it took these into account, but offered no critique of AEMO's forecast, or rebuttal of AusNet Services' claims. In the absence of sound reasoning for the departure, AusNet Services urges the AER to reconsider these issues, particularly as the 2015 AEMO forecasts reflect the resolution of a number of these issues as a result of AEMO's discussions with stakeholders.

On the basis of the discussions with AEMO throughout 2014 and 2015, AusNet Services anticipated that AEMO's maximum demand forecasts would show positive growth for AusNet Services' network as opposed to the flat forecast in the 2014 forecast. In particular, discussions between AusNet Services and AEMO had focused on the energy efficiency and solar PV assumptions in AEMO's 2014 forecasts. Whilst AusNet Services and AEMO continue to disagree on the impact of solar PV on maximum demand, AEMO's 2015 forecasts included a significant reduction in the contribution of energy efficiency to maximum demand, which was much more in line with AusNet Services' modelling.

Further, the 2015 AEMO forecasts included a new feature of cubic models to forecast non-linear trends. In its Preliminary Decision, the AER commented on AEMO's use of these models, but failed to state that those models weren't actually used by AEMO in the 2014 forecasts that the AER adopted. AusNet Services also uses non-linear models to produce its 'S-curves' for customer and temperature-demand relationships, a practice that pre-dated AEMO's adoption of such techniques.

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19 http://www.climatechangeinaustralia.gov.au/en/climate-projections/explore-data/threshold-calculator/#

20 At the time when the Initial Proposal was submitted, the 2014 AEMO forecast was the most recent forecast available. As noted above, prior to the release of the Preliminary Decision, AEMO released an updated forecast, but the AER did not take this new forecast into account when arriving at its Preliminary Decision.

When AEMO published its 2015 connection point forecasts, it had forecast growth across AusNet Services' network. In particular, the growth at Cranbourne and South Morang Terminal Stations, the source of much of AusNet Services' augmentation capital expenditure, was forecast to grow at 5% and 4% annually (POE10) over the 2016-2020 period.

Since the updated DELWP population/household projections were not available to AEMO at the time it was preparing the 2015 connection point forecasts, it is likely that AEMO will incorporate these higher growth rates in its 2016 forecasts. Therefore, care should be taken in assessing any differences between AusNet Services' revised demand forecasts and the 2015 AEMO connection point forecast. It is important that the AER understands the impact that these revised population projections might have on AEMO's forecast, before it compares the 2015 connection point forecast to AusNet Services' Revised Regulatory Proposal.

Impact of customer numbers of demand forecasts

As noted several times in the preceding discussion, customer number forecasts are a key input to AusNet Services' maximum demand forecasts. The AER noted that AusNet Services' methodology for forecasting growth rates was likely the strongest of all Victorian DNSPs and accepted AusNet Services' forecast customer growth in the Preliminary Decision.

The recently published DELWP household forecasts show an increase in the expected number of households in AusNet Services' network compared to the assumptions included in the Initial Proposal. For this reason, AusNet Services' maximum demand forecasts need to be adjusted to take into account this new information. This information is available now, prior to the AER's Final Decision being made, and will enable the AER's Final Decision to reflect accurate, available data that will better contribute to the attainment of the National Electricity Objective.

Adjusting the demand forecasts for the new customer numbers increases the expected growth rate in maximum demand from 1.1% per annum to 1.3% per annum. Much of this increase is experienced in south-east growth corridor serviced by the Cranbourne Terminal Station.

1.3.3 Revised Proposal

AusNet Services' revised maximum demand forecast is presented in the table below. Forecasts for individual zone substations are included in the revised Regulatory Information Notice (RIN) templates submitted together with the Revised Regulatory Proposal.

Table 1.4: Maximum demand forecasts – zone substation level, MW

	2016	2017	2018	2019	2020
Summer, POE10	2,007	2,035	2,062	2,086	2,111
Summer, POE50	1,749	1,776	1,803	1,827	1,851
Winter, POE10	1,592	1,611	1,630	1,648	1,664
Winter, POE50	1,437	1,454	1,471	1,487	1,502

Source: AusNet Services

1.4 Energy Consumption Forecasts

1.4.1 Preliminary Decision

The AER did not comment on AusNet Services' energy consumption forecasts in the Preliminary Decision. Under the revenue cap form of price control, energy consumption forecasts have a diminished role in setting prices compared to a price cap. Under a revenue cap, any gains or shortfalls in revenue due to differences in actual and forecast energy consumption are 'trued up' when the subsequent year's prices are approved.

Whilst the AER did not formally comment on energy consumption forecasts in its Preliminary Decision, the Post Tax Revenue Model (PTRM) issued with the Preliminary Decision did not change AusNet Services' energy consumption forecasts. Therefore, AusNet Services has assumed that the AER accepted the energy consumption forecasts in the Initial Proposal.

AusNet Services' energy consumption forecasts from the Initial Proposal are presented in the table below.

Table 1.5: Energy consumption forecasts – Initial Proposal (GWh)

Customer type	2016	2017	2018	2019	2020
Residential	3,129	3,108	3,086	3,066	3,065
Commercial	1,482	1,438	1,393	1,348	1,304
Industrial	2,837	2,896	2,951	3,003	3,054
Total	**7,447**	**7,442**	**7,429**	**7,418**	**7,423**

Source: AusNet Services

1.4.2 Response to Preliminary Decision

The change to AusNet Services' customer number forecast requires that the energy consumption forecast from the Initial Proposal is updated to reflect the higher number of customers. No other aspect of the energy consumption forecast or forecasting methodology has changed. The energy consumption forecast as a result of the change to customer numbers is presented in the next section.

1.4.3 Revised Proposal

AusNet Services' energy consumption forecast, incorporating the higher DELWP household projections, is presented in the table below. The relatively small, and cumulative nature of the increase in customers, results in little impact on energy consumption.

Table 1.6: Energy consumption forecasts – Revised Regulatory Proposal (GWh)

Customer type	2016	2017	2018	2019	2020
Residential	3,134	3,117	3,100	3,085	3,088
Commercial	1,479	1,434	1,387	1,340	1,295
Industrial	2,843	2,907	2,966	3,024	3,079
Total	**7,457**	**7,458**	**7,453**	**7,449**	**7,462**

Source: AusNet Services

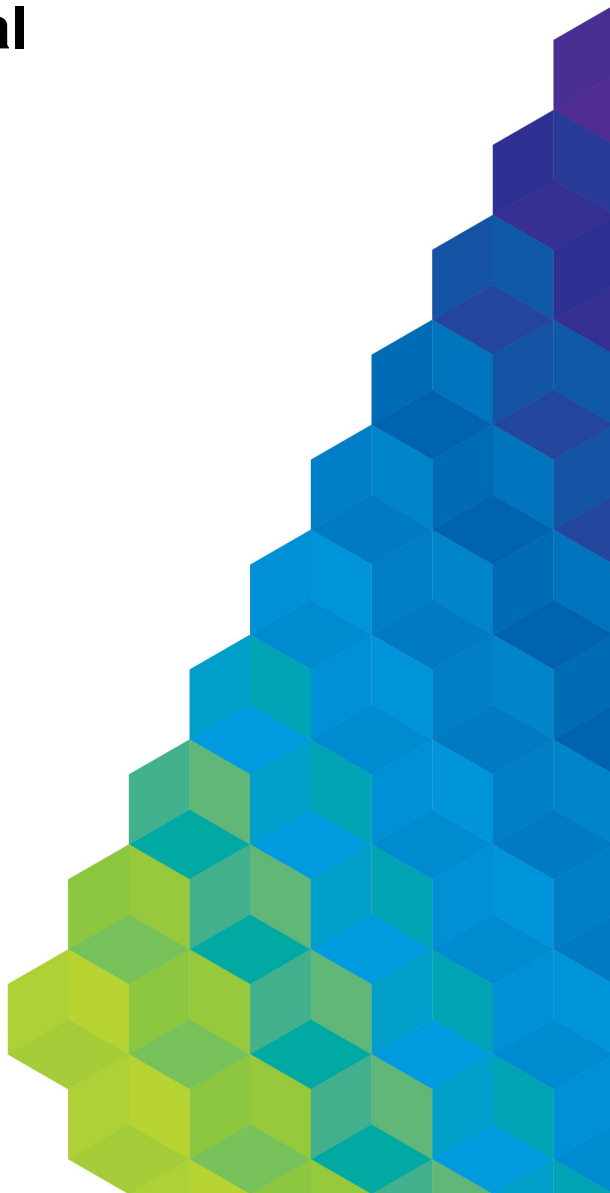
AusNet Electricity Services Pty Ltd

Electricity Distribution Price Review 2016-20

Revised Regulatory Proposal

Chapter 2: Revenue

Submitted: 6 January 2016



Chapter 2: Revenue

This chapter sets out AusNet Services' response to the Australian Energy Regulator's (AER's) Preliminary Decision with respect to Revenue as set out in Attachment 1 – Annual Revenue Requirement. AusNet Services' initial positions were set out in Chapter 6 – Building Block / Revenue Requirement (and Appendix 6A – Shared Assets) of the Initial Proposal.

In the event of inconsistency between information contained in this chapter and AusNet Services' Initial Proposal, the information contained in this chapter prevails.

2.1 Introduction

The AER approved $2,887.5 million (nominal) of the $3,566.9 million (nominal) of revenue (unsmoothed) forecast in the Initial Proposal. This was a reduction of $679.4 million, or 19.0%.

The major cuts to AusNet Services' Standard Control Services (SCS) revenue building blocks proposal included:

- The return on capital allowance reduced by 19.0%;
- The regulatory depreciation allowance reduced by 22.9%;
- The capital expenditure (capex) allowance reduced by 13.6%;
- The operating expenditure (opex) allowance reduced by 12.2%; and
- The cost of corporate income tax allowance reduced by 47.0%.

In total, $188.0 million (nominal) of revenue reduction was due to the reallocation of advanced metering infrastructure (AMI) communications/IT costs to Alternative Control Metering Services.

AusNet Services' Revised Proposal for total revenue is affected by its positions on inputs and approaches to the regulatory building blocks. In summary of key building block positions, the Revised Proposal:

- Adopts the Preliminary Decision's position in relation to several SCS opening RAB amendments, including the reallocation of $75.3 million (nominal) of AMI communications/IT assets to the Alternative Control Services (ACS) metering RAB, but rejects the approach to applying inflation and to valuing disposed assets, as discussed in Chapter 8 – Opening RAB;
- Accepts the AER's alternative estimate of the value of assets for which accelerated depreciation is being applied in the current regulatory control period,[1] but proposes the 'year-by-year' tracking method of depreciation for rolling forward the RAB, as discussed in Chapter 9 – Depreciation;
- Does not accept the Preliminary Decision's forecast of the required rate of return for a benchmark efficient entity and the value of gamma, or the forecast inflation rate, and, as outlined in Chapter 7 – Rate of return & Gamma, proposes:
    - An immediate transition to the trailing average approach for estimating the cost of debt which provides a required rate of return of 8.66% in 2016 and 7.78% by 2020. AusNet Services continues to propose a value of imputation credits of 0.25;
    - A forecast rate of inflation of 2.19% based on market data;

[1] Current regulatory control period refers to the 2016-2020 regulatory period, which commenced on 1 Jan 2016, and to which this Revised Proposal relates.

- Accepts the Preliminary Decision's approach to calculating the Corporate Income Tax Allowance tax with the exception of proposed value of imputation credits, as set out in Chapter 10 – Corporate Income Tax;
- Adopts the forecasts of maximum demand that reflect the latest Victorian Government projections of population growth and are consistent with the 2015 AEMO forecasts, as discussed in Chapter 1 – Demand and Energy;
- Updates real labour cost escalation applied to the capex and opex forecasts, as discussed in Chapter 3 – Capital Expenditure and Chapter 4 – Operating Expenditure;
- Accepts aspects of the Preliminary Decision with respect to opex, but, as discussed in Chapter 4 – Operating Expenditure, the Revised Proposal:
    - Rejects the allocation of opex for distribution communications and ICT systems upgraded under AMI to ACS (discussed in Chapter 11 – Metering Services);
    - Rejects the AER's approach to determining self-insurance, debt raising and labour costs; and
    - Includes updated forecasts of costs required due to new and altered regulatory obligations, including higher GSL payments, the cost of adopting the new customer connections framework, and cost increases attributable to the Power of Choice Rules changes;
- Accepts aspects of the Preliminary Decision with respect to capex, but, as discussed in Chapter 3 – Capital Expenditure, the Revised Proposal includes updates to:
    - Demand-driven augex updated for the latest population growth;
    - Repex updated to include additional capex for conductor replacement in declared areas (a new Victorian regulatory obligation);
    - Contingent projects are proposed for the installation of REFCL technology (also due to a new Victorian regulatory obligation);
    - Additional non-network capex for Power Of Choice Rule changes, following new detail of final Rules changes and the Preliminary Decision to reject AusNet Services' proposed cost pass through event; and
    - Updated connections and customer contributions forecast for new connections framework and latest population figures.
- Rejects reductions in the DMIA allowance (-$7.0 million, real $2015) compared to AusNet Services' proposal, as discussed in Chapter 5 – Incentives; and
- Rejects shared assets revenue decrements (-$0.9 million, real $2015), as discussed in Section 2.2 below.

Having regard to the above changes, AusNet Services proposes total revenue for the current regulatory period of $3,812.4 million (nominal) unsmoothed.

The remainder of this chapter is structured as follows:

- Section 2.2 discusses the Preliminary Decision on Shared Assets Revenue Adjustments and sets out AusNet Services' Revised Proposal; and
- Section 2.3 outlines AusNet Services' Revised Proposal for the current regulatory control period.

The information set out in this chapter accords with all the applicable requirements of the National Electricity Rules (NER).

2.2 Shared Assets

2.2.1 Preliminary Decision

The Preliminary Decision with respect to AusNet Services' proposed shared assets revenue adjustments is $3.5 million (nominal) in total across the current period, compared with AusNet Services' proposed adjustment of $2.4 million (nominal). The Preliminary Decision represents a further $0.9 million (nominal) reduction to AusNet Services' overall revenue requirement for the current period.

In its Preliminary Decision, the AER considered AusNet Services' forecast of shared assets unregulated revenues (SAUR) as reasonable, based on its reporting of historical shared assets revenue and its assessment of this revenue source for other service providers.[2] The AER reviewed the evidence of consumer benefits from contributed assets as outlined in AusNet Services' Initial Proposal.[3]

AusNet Services proposed to reduce the shared asset revenue by 50% of the value of the consumer benefit derived from the use of distribution poles and fibre optic cables provided by third parties. AusNet Services considered that the reductions were prudent on the basis that benefits already currently accrue from these third party arrangements in favour of consumers of regulated electricity services and will continue to accrue in the 2016-20 regulatory control period.

The AER did not accept AusNet Services' proposal to reduce the shared asset revenue adjustment for consumer benefits from fibre optic cables. The AER stated that AusNet Services did not provide sufficient evidence of the benefit of this asset of $1.85 million (real $2015) to consumers.[4] However, the AER accepted AusNet Services' proposal to reduce the shared asset revenue adjustment by 50% of the consumer benefit obtained from distribution poles provided by third parties, which is estimated to be $0.4 million (real $2015).[5]

The AER was also satisfied that AusNet Services would meet the materiality threshold that applies under the Shared Assets Guideline. The Guideline specifies that the use of shared assets is material for a given regulatory year when the average of the expected SAUR is expected to be greater than 1% of the total smoothed revenue requirement for that regulatory year. In its Initial Proposal, AusNet Services submitted that its annual SAUR values were forecast to be around 1.03% of its total revenues in each year of the 2016-20 regulatory control period.

The following table compares the Preliminary Decision with AusNet Services' proposed shared assets revenue adjustments.

Table 2.1: Preliminary Decision on AusNet Services' shared asset revenue adjustment

(Nominal, $M)	2016	2017	2018	2019	2020	Total
Initial Proposal	-0.4	-0.4	-0.5	-0.5	-0.5	**-2.4**
Preliminary Decision	**-0.6**	**-0.7**	**-0.7**	**-0.7**	**-0.8**	**-3.5**

Source: AusNet Services; AER Preliminary Decision

2 AER, *AusNet Services Preliminary Decision 2016-20*Attachment 1 - Annual Revenue Requirement, October 2015, p. 13.

3 AusNet Services, *Electricity Distribution Price Review - Regulatory Proposal*, Appendix 6A – Shared Assets, April 2015, pp. 3-4.

4 AER, *AusNet Services Preliminary Decision 2016-20*, Attachment 1 - Annual Revenue Requirement, October 2015, p. 13.

5 Ibid.

2.2.2 Response to Preliminary Decision

AusNet Services does not accept the Preliminary Decision on AusNet Services' shared asset revenue adjustment.[6]

While AusNet Services' proposed adjustment to the shared asset revenue decrement attributable to distribution poles was accepted, the AER did not accept the equivalent adjustment for gifted fibre optic cables for reasons as mentioned above. AusNet Services again proposes that this adjustment is made. Additional detail and further supporting evidence is set out below.

In addition, AusNet Services provides an updated calculation for consumer benefits as presented below. This update accounts for a minor error contained in AusNet Services' Initial Proposal in relation to the 50% reduction of consumer benefits that were used to adjust AusNet Services' proposed shared asset revenue decrements. The value of this correction is $0.11 million (real $2015) which has the effect of increasing AusNet Services' shared asset revenue decrements compared to the Initial Proposal.

Adjustment for contributed fibre optic cable

The Shared Asset Guideline states that the AER will take into account evidence of consumers benefitting from assets upgraded or replaced by third parties when determining shared asset cost reductions.[7] AusNet Services proposes that its shared asset revenue decrement should be reduced to recognise the benefits to customers of fibre network assets that have been gifted by third parties.

Customers benefit from 74 fibre optic cable pairs gifted by a third party and used to provide regulated services. This benefit arises from the avoided opex which would otherwise be incurred to lease bandwidth as an alternative communications solution, were the fibre optic cable not in place. This benefit is partially offset by increased opex incurred to maintain the fibre optic cable.

AusNet Services estimated the annual value of consumer benefits from fibre optic cables by comparing the actual cost of maintaining existing fibre optic cables with the expected annual cost of leasing additional bandwidth from a third party telecommunications provider (if the fibre optic cables were not in place).

The gifted fibre network spans 227 kilometres between Traralgon and Lakes Entrance providing communications services between regional offices / depots and zone substations along this route.

AusNet Services has estimated the annual maintenance cost of the fibre network to be $0.12 million (real $2015), inclusive of internal costs and external contractor support costs. Under the alternate scenario where the fibres were not in place, AusNet Services' estimates the annual lease costs would be $0.49 million (real $2015). This estimate includes the provision of communication services to 5 regional sites and SCADA-related services at 12 zone substations. These estimates are based on existing lease arrangements in place providing communications services to various locations within AusNet Services' distribution network. Comparing AusNet Services' annual maintenance costs for the fibre optic cable with the avoided lease costs results in an annual net benefit of $0.37 million (real $2015) to consumers, as shown in the figure below:

6 AER, *AusNet Services Preliminary Decision 2016-20*, Attachment 1 – Annual Revenue Requirement, October 2015, pp. 12-14.

7 AER, *Shared Asset Guideline,* December 2013, p. 9.

Figure 2.1: Annual value of consumer benefits from fibre optic cables ($0's, real $2015)

Alternative to having fibre optic cables		no. of sites	Total
Estimated bandwidth leasing costs	80,000	5	400,000
SCADA charges per zone sub-station	7,500	12	90,000
		Total opex saved per annum	490,000
		Offset by maintenance costs (@ $40k x 3)	120,000
		Net saving per annum	**370,000**

Source: AusNet Services

In the absence of the gifted fibre network AusNet Services would incur an estimated $0.37 million (real $2015) per annum in incremental opex to provide the required communication services to its own sites between Traralgon and Lakes Entrance. These incremental costs would, in turn, be passed through to end consumers.

Electricity consumers in AusNet Services' distribution network presently benefit from this third party arrangement and will continue to benefit during the current regulatory control period. It is consistent with the Shared Asset Guideline, and with the AER's treatment of the gifted distribution poles in the Preliminary Decision, for the AER to approve an adjustment in its Substitute Decision to recognise the benefits to consumers of the gifted fibre optic cables.[8]

As stated in AusNet Services' Initial Proposal, for the purposes of calculating the shared asset cost reduction, AusNet Services sought to allow consumers to continue to share in the benefits from contributed assets by adjusting its proposed shared asset revenue decrement by 50% of the estimated benefit to customers.[9] The estimated consumer benefits associated with contributed assets are shown in Table 2.2 below. This includes the consumer benefits approved in the Preliminary Decision for gifted distribution poles.

Table 2.2: Consumer Benefits from Contributed Assets ($m, real 2015)

	2016	2017	2018	2019	2020	Total
Distribution Poles	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	**(0.37)**
Fibre Optic Cable	(0.37)	(0.37)	(0.37)	(0.37)	(0.37)	**(1.85)**
Total	**(0.44)**	**(0.44)**	**(0.44)**	**(0.44)**	**(0.44)**	**(2.22)**

Source: AusNet Services

For the purposes of calculating the shared asset cost reduction, AusNet Services continues to recognise that consumers share in the benefits from contributed assets by adjusting the forecast shared asset revenue decrement by 50% of the estimated benefit to customers from gifted fibre optic cables. Thus, it is appropriate to adjust the forecast shared asset revenue decrement by $0.185 million (real $2015) per annum or $0.92 million (real $2015) in total for the current regulatory control period.

8 AER, *AusNet Services Preliminary Decision 2016-20,* Attachment 1 - Annual revenue requirement, October 2015, p. 13.

9 AusNet Services, *Electricity Distribution Price Review - Regulatory Proposal*, Appendix 6A – Shared Assets, April 2015, p. 4.

2.2.3 Revised Proposal

AusNet Services' forecast of SAUR is expected to be 1.2% of 2016 revenue and 0.90% of the total revenues in each subsequent year of the current regulatory control period. This means, AusNet Services will only meet the materiality threshold under the Shared Assets Guideline in the first regulatory year (2016). The table below provides the materiality assessment outcome.

Table 2.3: Materiality Assessment Outcome ($m, real $2015)

	2016	2017	2018	2019	2020	Total
Proposed smoothed ARR	571.8	753.2	753.2	753.2	753.2	**3,584.7**
Average Annual SAUR	6.8	6.8	6.8	6.8	6.8	**34.1**
SAUR as % of ARR	1.19%	0.90%	0.90%	0.90%	0.90%	**0.95%**
Material?	**Yes**	**No**	**No**	**No**	**No**	**N/A**

Source: AusNet Services

Shared Asset Cost Reduction

Consistent with the Guideline, the shared asset cost reduction has been calculated as 10% of the value of expected total relevant unregulated revenues from shared assets in that year, less the consumer benefits arising from contributed assets. Following this, the materiality threshold is applied. A cost reduction is only included for 2016, the single year where the materiality threshold is met.

The proposed shared asset cost reduction for the current regulatory control period is set out in the table below.

Table 2.4: Shared Asset Cost Reduction ($m, real 2015)

	2016	2017	2018	2019	2020	Total
10% of relevant unregulated shared asset revenues	0.64	0.66	0.68	0.70	0.70	**3.41**
Less 50% of consumer benefits from contributed assets	(0.22)	(0.22)	(0.22)	(0.22)	(0.22)	**(1.11)**
Shared asset cost reduction (before materiality test)	0.42	0.44	0.46	0.48	0.50	**2.30**
Material?	Y	N	N	N	N	**N/A**
Final shared asset cost reduction	**0.42**	**0**	**0**	**0**	**0**	**0**

Source: AusNet Services

2.3 Revised Revenue Proposal

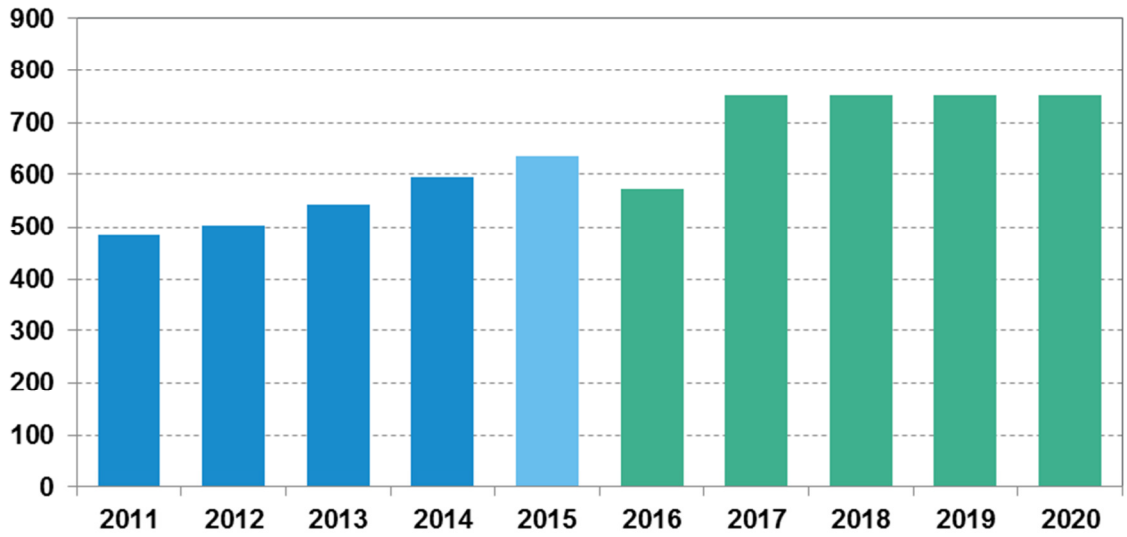
AusNet Services presents its Revised Proposal in this section, which is structured as follows:

- Section 2.3.1 presents AusNet Services' revised revenue requirement;
- Section 2.3.2 presents a summary of the building block components of the revised revenue requirement;
- Section 2.3.3 presents AusNet Services' smoothed revenue requirement for each year of the current regulatory control period, including a description of the X-factors adopted; and
- Section 2.3.4 describes the revenue requirement adjustments that may occur in the current regulatory control period.

2.3.1 Summary of AusNet Services' Revenue Requirement

Based on the detailed inputs described and calculated in this Revised Proposal, AusNet Services' smoothed revenue requirement comprises $571.8 million (real $2015) in 2016 and $753.2 million per annum (real $2015) from 2017-2020.

Figure 2.1: Revenue 2011 to 2020 ($m, real 2015)



Source: AusNet Services.

Note: Shows actual revenue to 2014 excluding STPIS revenue and including costs that are proposed to roll into Standard Control Services in the next regulatory control period (Bairnsdale network support contract and from metering program), 2015 revenue is estimated.

Comparison to previous period

AusNet Services is including a number of costs in the current regulatory control period that were previously recovered outside the price cap. Specifically:

- The cost of a large network support contract, previously recovered through an adjustment to the tariffs during the annual tariff setting process; and
- Costs associated with the AMI smart meter program upgrades to core distribution systems (such as the billing system) where it is now appropriate to subsume them into the standard control distribution service.

Therefore, any meaningful like-for-like comparison must either include or exclude this revenue from both the 2011-15 period and current period. The figure above illustrates real revenue over the 2011-15 period and current period, net of Service Target Performance Incentive Scheme (STPIS) payments, and shows that total revenue will be $824 million (real $2015) higher in the new period on a like-for like basis. After a period of annual average growth of 7% in the 2011-15 period, annual revenue falls by 9.8% in 2016 (on a like-for-like basis) in accordance with the Preliminary Decision for AusNet Services which sets the P0 value for 2016 revenue. In 2017, forecast revenue rises by 31.7% in comparison to 2016, remaining flat thereafter.

2.3.2 Building Block Components of the Revenue Requirement

The building block components and AusNet Services' unsmoothed annual revenue requirements for each year of the current regulatory control period are depicted in the table below.

Table 2.5: Unsmoothed Revenue Requirement

(Nominal $M)	2016	2017	2018	2019	2020	Total
Return on Capital	298.2	317.1	338.6	347.9	356.5	**1,658.3**
Depreciation	109.1	94.3	101.8	103.3	110.7	**519.2**
Operating & Maintenance Expenditure	248.4	259.1	271.4	282.8	295.0	**1,356.7**
Revenue Adjustments	10.4	(2.6)	(3.1)	17.1	1.7	**23.4**
Benchmark Tax Liability	55.1	47.7	49.4	51.3	51.1	**254.7**
Unsmoothed Revenue Requirement	**721.2**	**715.7**	**758.1**	**802.4**	**814.9**	**3,812.4**

Source: AusNet Services

The unsmoothed annual revenue requirement is calculated as the sum of the building block components, which are described in the sections below, and detailed in the Chapters that follow.

Regulatory Asset Base

AusNet Services' RAB has been calculated in accordance with the requirements of clause 6.5.1 and Schedule 6.2 of the NER. It reflects the capex forecasts set out in Chapter 3 of this Revised Proposal, the opening RAB based on expenditure in the 2011-2015 regulatory period as detailed in Chapter 8, and depreciation as calculated in Chapter 9. The table below sets out a summary of the derivation of AusNet Services' RAB for the current regulatory control period.

Table 2.6: Regulatory Asset Base for the Current Regulatory Control Period

(Nominal $M)	2016	2017	2018	2019	2020
Opening RAB	3,444.6	3,706.7	4,030.8	4,301.5	4,580.7
Net Capex	371.2	418.3	372.6	382.4	375.6
Economic Depreciation	-109.1	-94.3	-101.8	-103.3	-110.7
Closing RAB	**3,706.7**	**4,030.8**	**4,301.5**	**4,580.7**	**4,845.6**

Source: AusNet Services

Return on Capital

Consistent with the requirements of clause 6.4.3(a)(2) of the NER, and in accordance with the AER's PTRM, the return on capital is calculated by applying the post-tax nominal vanilla WACC to the RAB for each year of the regulatory control period. AusNet Services has modelled a declining nominal vanilla WACC in the current regulatory control period reflecting the annual updates to the cost of debt during the regulatory period. The table below illustrates the calculation of the return on capital building block. The WACC used in this calculation has been determined in accordance with the provisions set out in clause 6.5.2 of the NER. Full details of the WACC calculation are set out in Chapter 7 of this Revised Proposal.

Table 2.7: Return on Capital for the Current Regulatory Control Period

(Nominal $M)	2016	2017	2018	2019	2020	Total
Opening RAB	3,444.6	3,706.7	4,030.8	4,301.5	4,580.7	**N/A**
Return on Capital	298.2	317.1	338.6	347.9	356.5	**1,658.3**

Source: AusNet Services

Depreciation

The calculation of regulatory depreciation was carried out in accordance with the AER's PTRM and clause 6.5.5 of the NER, and is detailed in Chapter 9 of this Revised Proposal. Consistent with the requirements of clause 6.4.3(a)(1) and (3) of the NER, AusNet Services has incorporated an allowance for depreciation in its building block revenue requirement. The table below lists the regulatory depreciation building blocks for each year of the current regulatory control period.

Table 2.8: Depreciation for the Current Regulatory Control Period

(Nominal $M)	2016	2017	2018	2019	2020	Total
Nominal Depreciation	184.5	175.5	190.1	197.5	211.0	**958.6**
Less Indexation	75.4	81.2	88.3	94.2	100.3	**439.4**
Economic Depreciation	**109.1**	**94.3**	**101.8**	**103.3**	**110.7**	**519.2**

Source: AusNet Services

Operating Expenditure

Consistent with the requirements of clause 6.4.3(a)(7) of the NER, AusNet Services has included a forecast of opex in its building block allowance. As explained in Chapter 4 of this proposal, the opex forecast has been prepared in accordance with all applicable requirements of the NER. The opex forecast is summarised in the table below.

Table 2.9: Operating Expenditure for the Current Regulatory Control Period

(Nominal $M)	2016	2017	2018	2019	2020	Total
Operating Expenditure	248.4	259.1	271.4	282.8	295.0	**1,356.7**

Source: AusNet Services

Revenue Adjustments

Consistent with the requirements of sub-clauses 6.4.3(a)(5),(6) and (6A), AusNet Services has incorporated the carryover amounts that have been determined under the Efficiency Benefit Sharing Scheme (EBSS), the true up of the old jurisdictional S-Factor scheme and shared assets guideline. In accordance with the Preliminary Decision PTRM, the DMIA amounts are now also contained in Revenue Adjustments. The detailed calculation of each of these building blocks was undertaken in accordance with all applicable provisions of the NER, as explained in Chapter 5 – Incentive Schemes, and section 2.2 (Shared Assets) of this chapter. The building block costs are listed in the table below.

Table 2.10: Revenue Adjustments for the Current Regulatory Control Period

(Nominal $M)	2016	2017	2018	2019	2020	Total
EBSS carryover amount	25.7	-4.7	-5.8	14.4	-	**29.6**
S-factor true-up	-16.4	-	-	-	-	**-16.4**
DMIA	1.5	2.1	2.7	2.7	1.7	**10.7**
Shared Assets	-0.4	-	-	-	-	**-0.4**
Total	**10.4**	**-2.6**	**-3.1**	**17.1**	**1.7**	**23.4**

Source: AusNet Services

Tax Liability

Consistent with the requirements of clause 6.4.3(a)(4) of the NER, AusNet Services has incorporated an allowance for its benchmark tax liability into its building block allowance. The detailed calculation of the cost of tax is presented in Chapter 10 of this Revised Proposal. The cost of tax calculation accords with the requirements of clause 6.5.3 of the NER, and is summarised in the table below.

Table 2.11: Benchmark Tax Liability for the Current Regulatory Control Period

(Nominal $M)	2016	2017	2018	2019	2020	Total
Tax Payable	73.5	63.6	65.9	68.4	68.2	**339.5**
Less Value of Imputation Credits	-18.4	-15.9	-16.5	-17.1	-17.0	**-84.9**
Benchmark Tax Liability	**55.1**	**47.7**	**49.4**	**51.3**	**51.1**	**254.7**

Source: AusNet Services

2.3.3 Smoothed Annual Revenue Requirement

AusNet Services has calculated a smoothed revenue requirement by applying an X-factor for each year of the current regulatory control period as described in the sections below. The proposed smoothing is based on the methodology of the AER's PTRM.

X-Factor

The X-factors presented in the table below meet the requirements set out in clause 6.5.9 of the NER. In particular, AusNet Services has calculated the X-factor using the AER's PTRM, so that it:

- Maintains the 2016 MAR from the Preliminary Decision[10];
- Minimises the variance between the annual revenue requirement in 2020 and the building block revenue requirement for that year[11]; and
- Equalises, in net present value terms, AusNet Services' total revenue requirement for the current regulatory control period with the expected smoothed revenue requirement.

The table below presents AusNet Services' X-factors for the current regulatory control period.

Table 2.12: Proposed X-Factor for the Current Regulatory Control Period

%	2016	2017	2018	2019	2020
X-Factor	8.43%[12]	-31.74%	0.00%	0.00%	0.00%

Source: AusNet Services

If the Revised Proposal was applied from 2016, rather than the Preliminary Decision, the P0 value would have been -14.12%, followed by 0.00% to 2020.

Smoothed Annual Revenue Requirement

The application of AusNet Services' X-factors to AusNet Services' 'Unsmoothed Revenue Requirement' produces the following 'Smoothed Revenue Requirement'.

Table 2.13: Smoothed Revenue Requirement for the Current Regulatory Control Period

(Nominal $M)	2016	2017	2018	2019	2020	Total
Unsmoothed Revenue Requirement	721.2	715.7	758.1	802.4	814.9	**3,812.4**
Smoothed Revenue Requirement	584.3	786.6	803.8	821.4	839.4	**3,835.5**

Source: AusNet Services

The AER's PTRM attached to this Revised Proposal demonstrates that the smoothed and unsmoothed revenue requirements are equal in net present value terms, in accordance with the requirements of clause 6.5.9(b)(3) of the NER. The smoothed revenue for each year is also net of estimated non-tariff revenue from alternative control services.

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10 Due to an update to the 2015 MAR, to reflect tariffs accidently omitted in the Initial Proposal, the P0 value required to maintain the 2016 Preliminary Decision MAR has changed (from 8.12% to 8.43%). The 2016 smoothed revenue value in real $2015 terms is unchanged from the Preliminary Decision PTRM.

11 Under transitional Rule 11.60.3(b)(1), Clause 5.5.9(b)(2) does not apply under to this determination. However, AusNet Services' proposal satisfies the clause.

12 Due to an update to the 2015 MAR, to reflect tariffs accidently omitted in the Initial Proposal, the P0 value required to maintain the 2016 Preliminary Decision MAR has changed (from 8.12% to 8.43%). The 2016 smoothed revenue value in real $2015 terms is unchanged from the Preliminary Decision PTRM.

2.3.4 Revenue Requirement Adjustment in Current Regulatory Control Period

The revenue requirement set out in this chapter will be subject to adjustments in accordance with the control mechanism (set out in Chapter 19 – Tariffs for Standard Control Services of the Initial Proposal, and updated in Chapter 13 – Form of Control of the Revised Proposal) to account for:

- The actual CPI, in accordance with the provisions set out in clause 6.2.6(a) of the NER;
- The annual return on debt update;
- AusNet Services' actual service standard performance, relative to its service standard targets, under the STPIS; and
- Any deemed cost pass though event, as nominated in Chapter 6 of this Revised Proposal along with those pass through events specified in clause 6.6.1 of the NER.

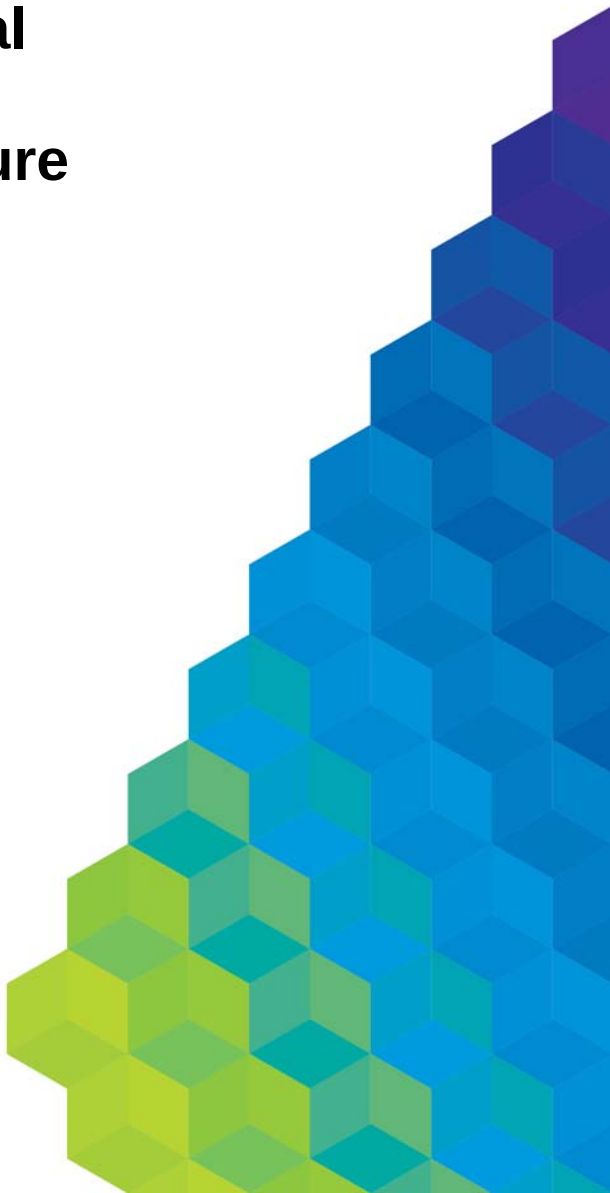
AusNet Electricity Services Pty Ltd

Electricity Distribution Price Review 2016-20

Revised Regulatory Proposal

Chapter 3: Capital Expenditure

Submitted: 6 January 2016



Chapter 3: Capital Expenditure

This chapter sets out AusNet Services' response to the Australian Energy Regulator's (AER's) Preliminary Decision with respect to Capital Expenditure as set out in Attachment 6. AusNet Services' initial positions were principally set out in Chapter 7 – Capital Expenditure of the Initial Regulatory Proposal (Initial Proposal), with positions on uncertain costs set out in Chapter 11 – Cost Pass Through.

In the event of inconsistency between information contained in this chapter and AusNet Services' Initial Proposal, the information contained in this chapter prevails.

3.1 Introduction

The Preliminary Decision approved $1,471.1 million of $1,690.0 million in net capital expenditure (capex), a reduction of $218.9 million, or 13% from the expenditure forecast set out in AusNet Services' Initial Proposal.

The AER substituted lower forecasts for the capex categories of replacement expenditure (repex) and augmentation expenditure (augex). AusNet Services' forecasts of expenditure requirements for customer connections and non-network capex were accepted.

The AER assessed capital expenditure in the categories shown in the table below.

Table 3.1: Preliminary Decision – Replacement Expenditure by category ($m, 2015 real)

Category	Initial Proposal	Preliminary Decision	Difference
Augmentation	313.8	267.4	-46.4
Connections	368.2	368.2	0
Replacement	900.7	758.4	-142.3
Non-Network	208.6	208.6	0
Capitalised overheads	172.8	167.7	-5.1
Labour escalation adjustment	n/a*	-25.1	-25.1
TOTAL (Gross)	**1,964.1**	**1,745.2**	**-218.9**

Source: AusNet Services, AER Preliminary Decision (Capex Model)

Note: Excludes Customer Contributions of $274.0m

** Labour escalation included within each category of Initial Proposal*

While the AER's forecast was reached on a different basis to AusNet Services', AusNet Services accepts the majority of the decision. Issues arising from a misunderstanding about several components or drivers of the forecast remain. In an effort to resolve this, this Revised Proposal provides further information to clarify the basis of AusNet Services' forecast in key areas (including 56M overhang removals[1], downed conductor sectionalisation, and surge arresters).

This Revised Proposal also includes updated forecasts to reflect the AER's **preferences for cost recovery mechanisms** (use of contingent projects to address forthcoming amendments to *Electricity Safety (Bushfire Mitigation) Regulations 2013*; non-network capex for Power of Choice rule changes;

[1] This is a safety program of $31 million in forecast expenditure that was excluded from Preliminary Decision.

and, Overheads), and **updated information** (new customer connections framework to apply in Victoria; demand forecasts; and, labour escalation rates).

Having regard to these changes, AusNet Services proposes gross capital expenditure for the current regulatory period of $1,945.7.4 million, and net capex of $1,749.3 million.

The remainder of this chapter is structured as follows:

- Section 3.2 provides an overview of the revised capex proposal;
- Section 3.3 addresses augmentation expenditure;
- Section 3.4 addresses replacement expenditure;
- Section 3.5 sets out the Revised Proposal for contingent projects;
- Section 3.6 addresses connections capex and customer contributions;
- Section 3.7 addresses non-network capex;
- Section 3.8 addresses capitalised overheads;
- Section 3.9 addresses price escalation; and
- Section 3.10 sets out the Revised Proposal for total capital expenditure.

The information set out in this chapter accords with all the applicable requirements of the National Electricity Rules (NER).

3.2 Overview

For clarity and to promote ease of understanding, this chapter sets out AusNet Services' response to the Preliminary Decision using the AER's preferred capex categories, and highlights the differences between AusNet Services' Revised Proposal and the AER's Preliminary Decision.

The following figure sets out the major adjustments the Revised Proposal has made to the Preliminary Decision capex allowance.

Figure 3.1: Capital Expenditure Revised Proposal – Relationship to Preliminary Decision

Category	Revised Proposal
Augmentation	Preliminary Decision + 56M Overhang Removals; Demand growth
Connections	New Forecast • Same methodology as Initial Proposal • Revised connections forecast
Replacement	Preliminary Decision − Powerline Replacement Fund + Safety Repex (Surge arresters; downed conductor sectionalisation); VBRC – Declared Areas
Non-network	Preliminary Decision + Power of Choice Rule Changes
Capitalised overheads	New Forecast • Same methodology as Preliminary Decision • Based on Revised Proposal for total capex
Escalation adjustment	New Forecast • Pro-rata adjustment to Preliminary Decision • Based on updated labour forecasts and Revised Proposal for total capex
Contributions (capcons)	New Forecast • Revised connection forecasts • New framework for connections in Victoria (Ch 5A)
Legend	Preliminary Decision; Initial Proposal; New Forecast

There are important differences between AusNet Services' forecasting approach and the approach applied by the AER in the Preliminary Decision. For instance, AusNet Services' initial forecast of capital expenditure requirements comprised a program/project level breakdown of expenditure that built up to the overall allowance. In contrast, for the majority of the capital expenditure program, the AER's approach relied on top down techniques such as trend analysis or predictive modelling, meaning that its forecast cannot be broken down into individual projects or programs. AusNet Services' forecasting approach also differed from the AER's in relation to safety driven capex. The Preliminary Decision approved an allowance for expenditures where there was a specific obligation in relation to the project or program[2] but did not address proposed safety programs that have an economic justification.

While the Revised Proposal is presented in terms of adjustments to the Preliminary Decision, AusNet Services has applied a range of assessment techniques to ensure that the overall capital expenditure proposed satisfies the NEO and the Capital Expenditure Criteria. AusNet Services has relied on its forecast presented in the Initial Proposal based on the methods set out in Section 7.3 of that proposal as a check on the overall Revised Proposal.

Importantly, the Revised Proposal relies on the same assumptions as set out in the Initial Proposal[3], with the following exceptions:

- forecasts of customer connections and maximum demand have been updated;
- Chapter 5A is the relevant framework governing customer connections and customer contributions;
- amendments to the *Electricity Safety (Bushfire Mitigation) Regulations 2013* are assumed to commence during the 2016-20 period; and
- labour price forecasts have been updated.

From the perspective of the detailed capital expenditure requirements of the network, in the course of developing the Revised Proposal, AusNet Services has not identified any programs which are unnecessary, or require a reduction in scope. Where AusNet Services accepts the Preliminary Decision's top-down cuts to the Initial Proposal, it is with the understanding that there is a degree of uncertainty as to forecasts (e.g. with respect to volumes) and that AusNet Services has some ability, where necessary, to reprioritise projects and programs across the capex portfolio within the regulatory period.

The total Revised Proposal of forecast capital expenditure is required to achieve the Capital Expenditure Objectives[4].

2 With the exception of the 56M program, which was rejected on the basis that there may be some overlap with other funded programs.

3 Assumptions were set out in Section 7.3.4 (p. 119) of the Initial Proposal. There has been no change to assumptions regarding the interactions between forecast capital expenditure and forecast operating expenditure. (NER cl. S6.1.3(1)).

4 NER cl. 6.5.7(a)

3.3 Augmentation Expenditure (Augex)

3.3.1 Preliminary Decision

The AER approved $267.4 million in the Augex category. Three categories of augmentation expenditure (augex) were assessed: Demand growth, VBRC, and Safety – Other.

Table 3.2: Preliminary Decision – Augmentation Expenditure by driver ($m, 2015 real)

Driver	Initial Proposal	Preliminary Decision[5]	Difference
Demand growth	67.5	52.1	15.4
VBRC	142.1	142.1	-
Safety – other	104.2	73.2	31.0
Total	**313.8**	**267.4**	**46.4**

Source: AusNet Services, AER Preliminary Decision

Notes: Shows direct costs (i.e. excludes overheads). Preliminary Decision figures are before downward adjustment for lower labour escalation.

The Preliminary Decision determined demand related (demand growth) augex by establishing the sensitivity of AusNet Services' augmentation program to maximum demand growth and applying AEMO's 2014 demand forecast. As a result, the Preliminary Decision applied a $15.4 million top down cut to AusNet Services' forecast. AusNet Services' forecast of maximum demand growth was the lowest of the Victorian DNSPs. However, this forecast was rejected by the AER and the AEMO 2014 forecast, which effectively forecasts no maximum demand growth over the 2016-20 period, was substituted.

The Preliminary Decision stated:[6]

> *"We will consider updated demand forecasts and other information (such as AEMO's revised connection point forecasts) in our final decision to reflect the most up to date data."*

The AER reviewed each of the Safety and VBRC programs in light of AusNet Services' obligation to undertake the work, the volume of work proposed and the unit cost of undertaking the activity. The VBRC expenditure, which primarily consists of ongoing work to fit vibration dampers and armour rods was accepted. The programs of animal and bird proofing were also accepted, though the Preliminary Decision sought more information from AusNet Services on project prioritisation and the location of installations.

AusNet Services' 56M overhang removals program (which is the program to insulate or underground the network at locations where it is impractical to remove or trim significant trees in order to obtain the prescribed clearance space above the conductors) was not accepted. The Preliminary Decision was not satisfied that the expenditure was necessary as it was not able to determine if there was some overlap with other programs or why vegetation clearance could not be achieved through standard vegetation management practices.

5 The Preliminary Decision capex model shows an error in the allocation between VBRC and Safety. This table shows the correct allocation.

6 AER, 2015, *Preliminary Decision*, Attachment 6 – Capital expenditure, pp. 6-43.

3.3.2 Response to Preliminary Decision

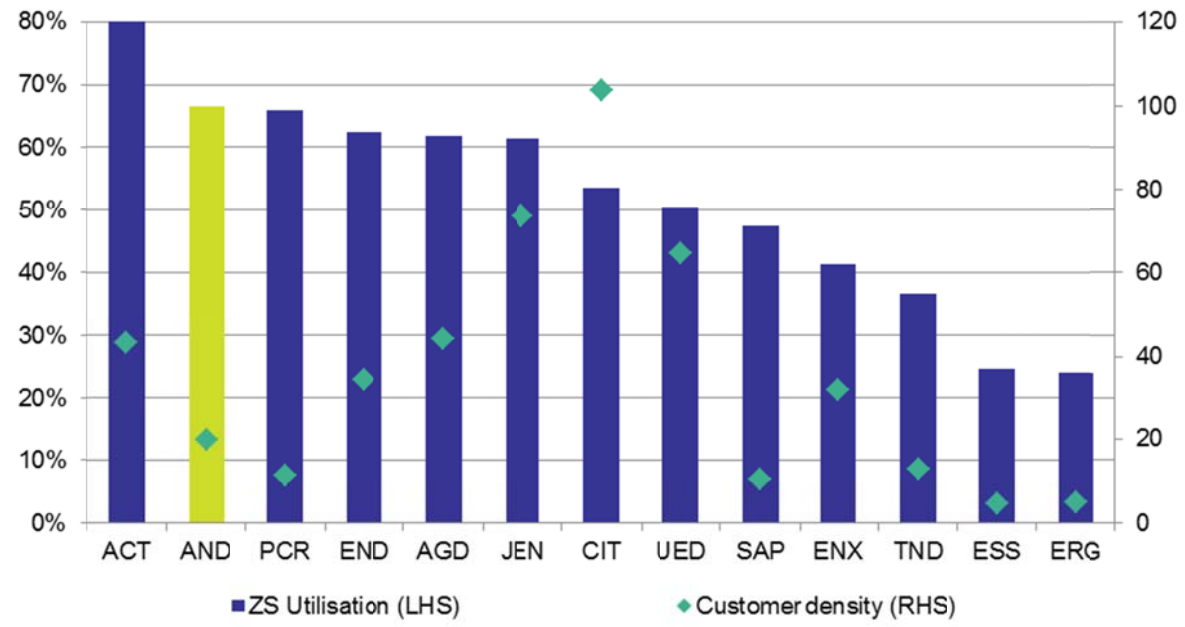
AusNet Services accepts the Preliminary Decision on augex with the following exceptions:

- Demand growth – the AER has applied an outdated forecast of demand growth; and
- Overhang removals – this program is necessary to meet regulatory obligations.

AusNet Services' Initial Proposal included forecast augmentation expenditure that is significantly lower than its historical expenditure. The proposal was based on a maximum demand growth forecast that was the lowest of all the Victorian distributors and is consistent with the latest forecast from AEMO.

In response to the Victorian distributors' regulatory proposals, consumers expressed concern that capex programs over the previous decade have produced significant levels of excess network capacity.[7] AusNet Services does not have significant levels of excess capacity and the proposed augmentation program will not create any. AusNet Services has the second highest utilisation level for zone substation capacity in the NEM with 67%[8]. This is a clear indication that relative to other DNSPs, AusNet Services does not hold a significant level of spare capacity in its network and has invested efficiently.

Figure 3.2: 2013 zone substation utilisation (%)



Source: *AER RIN data.*

Note: *AusNet Services shown as AND. Customer density is number of customers per km line route line length.*

Consumers also noted that distributors have not provided sufficient evidence of their claimed "pockets of demand growth"[9]. AusNet Services forecast augex is primarily targeted at areas of localised demand growth. The sub-transmission line augmentation project is necessary[10] to meet demand growth in the growing northern Melbourne metropolitan area and the high-voltage feeder augmentation is necessary to connect new customers in residential housing estates

7 VECUA, 2015, *Submission to the AER – Victorian Distribution Networks' 2016-20 Revenue Proposals*, p. 22.

8 AER, DNSP Reponses to Economic Benchmarking Regulatory Information Notice (RIN) 2013-14.

9 VECUA, 2015, *Submission to the AER – Victorian Distribution Networks' 2016-20 Revenue Proposals*, p. 25.

10 This project, the KLO-DRN 66kV line, has been subject to a regulatory test

primarily in the rapidly growing south-east metropolitan corridor surrounding Cranbourne. Further information is provided on this localised growth in Appendix 3A - Capital Expenditure Supporting Information.

Maximum Demand Forecast

A detailed response to the Preliminary Decision on forecast Maximum Demand is provided in Chapter 1 – Demand and Energy.

In summary:

- AusNet Services' forecast is reasonable, and its forecasting methodologies produce the best forecast of future maximum demand.
- The Preliminary Decision used outdated AEMO maximum demand growth forecasts. The latest AEMO forecasts align with AusNet Services'. [11]
- New projections of Victorian population growth, released by the Victorian Government in August, require maximum demand forecasts to be updated[12]. Specifically, customer connections growth is forecast to be higher overall, with some locations experiencing higher growth and some forecasting lower growth than included in AusNet Services' Initial Proposal. These forecasts are an accepted and independent source for determining customer connections.

Demand-growth Augex

The Preliminary Decision included an alternative forecast of demand growth augex due to the lower (2014 AEMO) maximum demand forecasts relied on in the Preliminary Decision. AusNet Services' Revised Proposal for demand growth augex is based on the Revised Proposal for forecast maximum demand set out in Chapter 1 – Demand and Energy.

As set out in Chapter 1 of this Revised Proposal, the maximum demand forecast included in AusNet Services' Initial Proposal is consistent with the latest forecast from AEMO (the forecaster that was preferred in the Preliminary Decision). When the latest AEMO forecast is applied to AusNet Services' demand growth augex, the $15.4 million of capex cut in the Preliminary Decision is restored.

The impact of the latest projections for Victorian population growth will necessitate some additional network augmentation between 2016 and 2020. This network augmentation is required to extend the network to connect new residential estates. The Department of Environment, Land, Water and Planning (DELWP) population projections indicate higher levels of customer growth in areas including Casey, Whittlesea, Cardinia and Baw Baw. Specifically, AusNet Services' revised forecast includes:

- $7.9 million (real $2015) for new feeders/feeder works; and
- $8.3 million (real $2015) for zone substation augmentation at Clyde North, commencing in 2019. [13]

The increased expenditure requirement for additional feeders is driven by increased connections in specific locations rather than higher maximum demand.

In reaching the revised forecast for demand growth augex, AusNet Services considered whether the requirements could be met by non-network alternatives.[14] AusNet Services concluded very little

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11 Australian Energy Market Operator (AEMO), 2015 AEMO Connection Point Forecasting Report for Victoria, September 2015.

12 Department of Environment, Land, Water and Planning, *Victoria in Future 2015*, Victorian State Government, August 2015.

13 Direct costs, excluding real cost escalation.

14 Rule 6.5.7(e)10.

additional demand management is likely to be available on these feeders, over and above currently contracted customers and therefore no effective deferral of the newly identified projects is possible. Further details of how this assessment was reached are provided in Appendix 3A: Capital Expenditure Supporting Information.

Safety – Other

Placing powerlines underground due to vegetation overhang (56Ms)

The obligations that necessitate this $31 million program, labelled 'overhang removals' (or '56Ms', which is a reference to an old State Electricity Commission of Victoria inspection code), were described in Section 7.4.2 of the Initial Proposal. While the Preliminary Decision acknowledged the obligation, it stated that "the scope of this program appears unclear"[15]. The following section provides additional detail of the regulatory obligation and program scope[16].

Should the AER have any outstanding queries regarding this safety compliance program that it does not feel are answered by this Revised Proposal, the AER is urged to raise these with AusNet Services prior to making its Substitute Decision.

The *Electricity Safety (Electric Line Clearance) Regulations 2010*[17] clauses 11(4) and 12(4) impose vegetation management requirements on the Victorian DNSPs. These regulations came into force in June 2010. The regulations, relating to overhanging branches, introduced a new requirement that prohibits vegetation from overhanging bare overhead powerlines in cases where it was previously possible to conduct assessments of the area and implement risk management approaches that allowed some overhanging vegetation. It is not always possible to manage vegetation by pruning or cutting trees to adhere to these strict regulations. There are some native trees and trees of cultural or environmental significance that are not allowed to be removed due to local council restrictions. In some cases community pressure makes removing trees exceedingly difficult.

AusNet Services manages to comply with the new regulations through pruning (opex) for most of the spans however eliminating overhanging vegetation from all spans could not be achieved using pruning. Pruning was assessed to be impractical and not environmentally responsible or acceptable to the local communities. Where it is not possible to eliminate the overhanging vegetation the following (capex) options are considered:

- Installing covered conductor such as aerial bundled cable (ABC);
- Relocating powerlines such as re-routing a section of the line to the other side of a roadway; and
- Undergrounding a section of line.

Selecting the most appropriate option to eliminate overhanging vegetation is made on a site-by-site basis. In high bushfire risk areas it is preferable to consider ABC or undergrounding a section of line to minimise the risk of bushfire ignition.

The need to undertake this work was recognised in the 2011-15 EDPR[18]. Expenditure to install an HV ABC solution to eliminate 2,000 overhang spans and achieve compliance was allowed by the AER in its 2011-15 final decision.

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15 AER 2015, *Preliminary Decision*, Attachment 6, pp. 6-46.

16 This section expands on details provided in the Initial Proposal. The document "Historical Changes to bushfire safety obligations.pdf" provided details of the relevant obligations. Initial Proposal Appendix 7A and Appendix 7B provided details of the program.

17 These regulations were introduced after the 2009 bushfires, but prior to the publication of the VBRC Report.

18 AER, 2010, *Final decision – appendices, Victorian electricity distribution network service providers Distribution determination 2011–2015*, APPENDIX P—CAPITAL EXPENDITURE, p.675

AusNet Services initiated a project in 2011 to undertake the capital works necessary to comply with the regulations. A significant proportion of the remaining 2,000 spans[19] were made compliant with the new regulations through removal of trees or replacing bare overhead conductor with ABC.

However, in the 2013/14 summer period, AusNet Services experienced a number of ABC failures in and around Mt Dandenong and subsequent multiple fire events. This prompted an urgent review of the maintenance and replacement strategy for the particular fleet of ABCs, which resulted in the need to replace a material volume of HV ABC. The failure of HV ABC presented a much higher risk than overhanging trees and expenditure was redirected from the overhang removal project to HV ABC replacement with ESV endorsement[20].

As agreed with the ESV, the delayed 56Ms program must now be completed by December 2017. The forecast to complete the project is shown in the table below:

Table 3.3: 56Ms Overhang Removals – updated project profile

	2016	2017
$'000, (2015, real)	16,709	13,672
% of expenditure	55%	45%

Source: AusNet Services. Shows direct costs only excluding real cost escalation.

The expenditure profile has been revised since AusNet Services' Initial EDPR submission. The reason for the changed expenditure profile is that a hybrid underground cable will be used to rectify the majority of the remaining spans. This approach has a longer installation time than other options but offers an improved safety outcome in bushfire risk areas.

Relationship to other undergrounding or conductor insulating works

This program is not directly related to the other network safety related program that results in the undergrounding or insulation of overhead conductors. AusNet Services is currently undertaking four overhead conductor programs which result in replacement of bare overhead conductor throughout the Hazardous Bushfire Risk Area (HBRA). The four programs are:

1. Overhang removals (56Ms) – the undergrounding of bare overhead powerlines where vegetation overhangs the powerline;
2. Conductor Replacement program – the replacement of bare overhead powerlines that are approaching the end of their effective life. This program replaces bare conductor, primarily steel and copper conductor, with new bare conductor;
3. HV ABC program – the replacement of deteriorated high voltage aerial bundled cable (ABC) which is at end of life, with new overhead or underground insulated cable technologies; and
4. Powerline Replacement Fund (PRF) program – the replacement of bare high voltage overhead powerlines in high-risk locations with underground or insulated cable technologies. These works are funded by the State of Victoria, Department of Economic Development, Jobs, Transport and Resources (DEDJTR).

There is no overlap between the overhang removal (56M) project and the conductor replacement project as the Conductor Replacement project (number 2, above) does not eliminate the need to insulate or underground sections of line (i.e. the replacement of bare conductor in deteriorated condition with new bare conductor does not ensure compliance with the regulation to remove overhanging trees).

19 Since the project was scoped in 2009, AusNet Services identified approximately 270 additional spans that needed to be included in this project, bringing the total spans requiring rectification to 2,270.

20 Energy Safe Victoria, Letter to AusNet Services dated 8 September 2015 (ESV Ref: CM-1597).

There is no overlap between the overhang removal (56M) project and the HV ABC program (number 3, above) as locations which have HV ABC installed are already compliant with the regulation to remove overhanging trees (i.e. trees are allowed to overhang the HV conductors where the conductor is insulated such as in the case of HV ABC).

There is some potential overlap between the overhang removal (56M) project and the PRF program (number 4, above), however:

- The scope of the overlap, in terms of the number of spans potentially affected, is very limited; and
- A process is applied to the evaluation of the works which eliminates the potential for the Victorian Government to pay for works at locations where overhang removals are necessary.

Further detail of the relationship between the overhang removal program is provided in Appendix 3A – Capital Expenditure Supporting Information.

Animal and bird-proofing

The Preliminary Decision approved AusNet Services' proposed program of animal and bird proofing of assets in hazardous bushfire risk areas. However, the AER stated that it was seeking additional information on the scope of this project, including how the project will be targeted and delivered.

Incidents caused by bird and animal flashovers have been the third most common source of ground fire ignitions since 2006, accounting for around 12% of ground fires on the network.

Appendix 3A – Capital Expenditure Supporting Information, provides additional information on the background of the project and proposed installation approach for the animal and bird proofing program.

3.3.3 Revised Proposal

AusNet Services' Revised Proposal for augex replicates the Initial Proposal, with two exceptions:

- It forecasts an additional $16.1 million in demand driven augex due to increases in expected gross connections.
- The $31 million 56M overhang removals program has been re-profiled over two years rather than being delivered in a single year.

Table 3.4: Revised proposal – Augmentation Expenditure ($m, 2015 real)

	2016	2017	2018	2019	2020	Total
Augmentation expenditure	70.1	81.1	61.6	57.0	59.1	**328.8**

Source: AusNet Services. Excludes overheads, and adjustment for revised labour price escalation.

3.4 Replacement Expenditure (Repex)

3.4.1 Preliminary Decision

AusNet Services' proposed expenditure of $901 million for repex[21] and the AER rejected this forecast and substituted its alternative forecast of $758 million excluding overheads.[22]

[21] Both Initial Proposal and Revised Proposal include capex funded by the Victorian Government's Powerline Replacement Fund.

[22] AER, 2015, *Preliminary Decision*, Attachment 6, p. 57.

The AER used several techniques to assess proposed expenditure against the capex criteria involving repex modelling, trend analysis, review of health indicators and comparative performance metrics, and technical review.

Trend analysis, review of health indicators and comparative performance metrics, and technical review was generally used to provide context to the AER's decision. These techniques were not directly used to reject AusNet Services' forecast or to provide a substitute forecast.

Predictive modelling using the repex model was used to model expenditure in six asset groups accounting for 66% of AusNet Services' proposed repex. Several scenarios were considered involving the standard asset lives and unit costs AusNet Services reported and alternatives including historical unit costs, NEM unit costs and NEM standard lives. Across the six asset groups, the AER accepted repex of $593 million, which accepts AusNet Services' forecast for these asset groups.

Pole top structure (crossarm) replacements were not modelled using the repex model due to data limitations. AusNet Services' forecast of $127 million was accepted as forecast expenditure is 37% less than the 2011-15 period.

AusNet Services' proposed expenditure of $107 million for SCADA, network control and protection replacements. The AER found that the proposed expenditure is materially higher than expenditure over the 2011-15 period reported in the RINs and substituted an amount equivalent to expenditure over the 2011-15 period of $24 million.

AusNet Services' forecast $73 million to replace assets in the Other RIN category including items such as current and voltage transformers, capacitor banks, regulators, surge arresters, neutral earthing resistors and site repairs. The AER noted a step change in this category of expenditure from the 2011-15 period and did not consider that this step change was justified. An amount of $14.4 million was substituted using the repex model.

Table 3.5: Preliminary Decision – Replacement Expenditure by asset class ($m, 2015 real)

Asset Class	Initial Proposal	Preliminary Decision*	Difference
Poles	185.3	185.3	**-**
Overhead conductor	154.4	154.4	**-**
Underground cable	80.8	80.8	**-**
Services	27.7	27.7	**-**
Transformers	49.7	49.7	**-**
Switchgear	95.1	95.1	**-**
Pole top structures	127.3	127.3	**-**
SCADA, network control and protection	107.0	24.0	**-83.1**
Other	73.4	14.4	**-59.1**
TOTAL	**900.7**	**758.4**	**-142.3**

Source: *AusNet Services, AER Preliminary Decision*

Notes: *All expenditures exclude capitalised overheads (i.e. shows direct costs). AusNet Services' Initial Proposal and Preliminary Decision include $60.4 million (direct) of capital expenditure funded by the Victorian Government's Powerline Replacement Fund (PRF) in the 'Underground cable' asset class.*

* *Preliminary Decision figures show allowance before price escalation adjustment is applied.*

3.4.2 Response to Preliminary Decision

AusNet Services accepts the Preliminary Decision on repex, with three exceptions (all figures in real $2015):[23]

- Downed Conductor Sectionalisation project (SCADA category), $15.7 million – this is a new safety program and, therefore, cannot be assessed using the repex model which relies, at least partially, on historical expenditure and volumes being available as an input.
- Surge Arresters project ('Other' category), $23.1 million– this is also a new safety program that, likewise, cannot be assessed using a repex model.
- VBRC Declared Areas project (new expenditure), $67.0 million – this is additional capital expenditure associated with the undergrounding of powerlines or insulating of conductors during the 2016-20 regulatory control period. This incremental cost is associated with the Victorian Government's proposed amendments to the *Electricity Safety (Bushfire Mitigation) Regulations 2013*.

These projects are required to enable AusNet Services to maintain (and improve) the safety of its distribution network. The forecast expenditure associated with each project represents the prudent and efficient costs of achieving that objective. It is appropriate that the AER increase AusNet Services' repex forecast to include these projects and enable them to be undertaken.

AusNet Services acknowledges that parts of its Initial Proposal and supporting documentation (e.g. asset strategies and works programs which set out the justification for capex based on AusNet Services' asset management approach) did not neatly correspond with the forecast as set out in the AER's RIN template. This is because the definitions and categorisations the AER applies in its RIN, upon which the AER has relied predominantly to derive its alternative forecast, do not align perfectly with the classifications that have applied historically in Victoria or with the drivers of AusNet Services' capex forecast. As a result, projects or programs described in the regulatory proposal are in some cases split into multiple categories when reported in the RIN. This may have made it more difficult for the AER to understand the links between the proposal and the RIN templates.

In the case of the Downed Conductor Sectionalisation project and the Surge Arresters projects, AusNet Services believes the misalignment with RIN categorisation has led to the AER applying an inappropriate replacement assessment framework to these expenditures when, in fact, safety rather than replacement is the driver. Details of these two projects, and their justifications, are provided in the sections below.

The Victorian Government intends to amend the *Electricity Safety (Bushfire Mitigation) Regulations 2013* to introduce a new regulatory obligation which requires a distributor to include in its Bushfire Mitigation Plan details about how it will ensure electric lines within a 'declared area' will be insulated or placed underground.[24] These amendments to the regulations, and subsequently to AusNet Services' Bushfire Mitigation Plan, will require AusNet Services to incur additional capital expenditure during the 2016-20 regulatory control period. Details relating to the new design standard in declared areas are provided in the sections below.

The Revised Proposal also reflects the Australian Tax Office's (ATO's) ruling on the tax treatment of the Victorian Government contribution for the Powerline Replacement Fund.

Safety

Safety is a major theme of AusNet Services' Initial and Revised Regulatory Proposals. A number of programs in the proposals are intended to further reduce safety risks, particularly the risk of bushfire

[23] Direct costs, excluding real cost escalation.

[24] Department of Economic Development, Jobs, Transport and Resources (DEDJTR), *Regulatory Impact Statement for the Bushfire Mitigation Regulations Amendment,* November 2015, p. 94.

ignition and, consistent with the capital expenditure objectives, maintain the safety of the distribution system.

As expressed in its Enhanced Network Safety Strategy, AusNet Services aims 'to reduce serious incidents by 20% through successive regulatory review periods.' The Preliminary Decision makes achieving this goal more difficult. Less expenditure will be available to direct to programs which will further reduce safety risks and other proposed asset replacement programs, resulting in a reduction in some of the proposed volumes of activity. An approach will be applied to balance expenditure across the portfolio of projects and programs that target the areas where risks can be reduced most cost-effectively.

Downed Conductor Sectionalisation project

The following section sets out additional detail about the Downed Conductor Sectionalisation project which was not funded based on the AER's alternative forecasting methodology.

Background

This project is required to maintain or improve the safety of the distribution system. It aims to reduce the potential for a bushfire ignition by isolating a section of a high voltage overhead feeder when a fault results in a conductor touching the ground.

Conductors can be brought to the ground by a number of means such as impact from a falling tree, vehicles hitting poles or asset failure. The safety risks of downed conductors include:

- Fire ignition;
- Electrocution of individuals (members of the public or AusNet Services employees or contractors) coming into contact with the live conductor;
- Loss of livestock; and
- Damage to customer equipment due to brownout and voltage variation.

Electricity protection systems are designed to detect a fault on the network and to operate a switch (typically a circuit breaker) to interrupt the supply of electricity. Interrupting the supply of electricity makes the system safe by eliminating the possibility that a person or animal will touch a live conductor, preventing a fire start, and preventing damage to equipment through high fault currents. Common faults are when single conductors contact each other or the ground. Systems that detect downed conductors or limit fault currents have clear safety benefits through reducing the risks outlined above.

Protection systems are limited in their ability to detect faults on a network. For some common network faults, such as when two conductors contact each other, high fault currents are easily detected and the protection system will open the circuit breaker to interrupt electricity supply. However, for some faults, such as when a conductor breaks and falls to the ground, there may not be a significant increase in the current flowing and a conventional current-sensitive protection system which utilises earth-fault protection relays may not detect the downed conductor. As a result, there may be instances where conductors can potentially remain energised on the ground and lead to fire ignition or electric shock.

A method of enhancing the protection system to detect these faults where a conductor falls to the ground is to utilise a Master Earth Fault (MEF) protection relay. A MEF protection relay detects any current flowing from a conductor to the ground and operates either the circuit breaker to make the feeder safe, or operates the distribution feeder automation system to isolate the faulted section. (Using the distribution feeder automation system to isolate the faulted section means that fewer customers are affected by the fault.)

Trial Project

During the 2011 to 2015 regulatory period, AusNet Services completed a research and development project at Belgrave to establish the suitability of installing new technology MEF protection relays. The

trial project involved the implementation of technology to identify and then isolate a downed, live, conductor.

After the trial project had commenced, a decision was made to trial Rapid Earth Fault Current Limiters (REFCLs) and the project was modified to ensure that both MEFs and REFCLs could be implemented together. From the trial, it was concluded that this technology can be introduced onto the distribution network.

Implementation

The proposed program involves two related projects: replacing conventional MEF protection relays with enhanced relays and installing Neutral Earthing Resistors.

The first program involves replacing MEF protection relays with new technology which has the ability to provide current signatures that enable downed conductors to be detected and also provide monitoring and fault recording for Neutral Earthing Resistors. Following detection of a downed conductor, further automated action can be taken such as opening circuit breakers or ACRs to isolate the fault and using Distribution Feeder Automation (DFA) to restore customers outside the faulted section. MEF protection relays will be replaced at 31 sites (with work commencing in 2015) and automatic sectionalisation of downed conductors will be implemented at stations where new MEF protection relays and DFA has been installed. These new MEF relays are also necessary to enable REFCLs to be installed and operated at zone substations.

The second program involves the installation of fault level reducing systems (Neutral Earthing Resistors) at two zone substations, Foster and Kinglake. Neutral Earthing Resistors are already installed at most zone substations. The installations at Foster and Kinglake will add to the safety of the network by targeting two zone substations which present some bushfire risk and do not currently have Neutral Earthing Resistors installed.

Surge Arresters project

The following section sets out additional detail of the Surge Arresters project which was not funded based on the AER's alternative forecasting methodology.

Background

AusNet Services' medium-voltage electricity distribution network (HV distribution feeders) has approximately 125,000 surge arresters protecting approximately 62,000 distribution substations, 4,000 ACRs and gas-insulated switches, 140 line voltage regulators, 70 pole-mounted capacitors and more than 1,200 underground cable termination poles.

Surge arresters are also installed in zone substations to protect plant such as power transformers and circuit breakers. Approximately 1,600 surge arresters are located in zone substations.

Surge arresters are also known as 'surge diverters' or 'lightning arresters' (LAs).

Line Surge Arresters

A subset of the surge arrester population installed on HV distribution feeders is exhibiting signs of deteriorated condition such as degraded insulator material, housings, venting duct covers and/or diaphragms. Condition assessments indicate that 38% of units are in "very poor" (C5) condition and 2% are in "poor" (C4) condition. The vast majority of surge arresters in condition C4 and C5 are gapped silicon carbide line surge arresters with porcelain housings installed during the early 1980s.

Gapped silicon carbide units can explode when they fail, causing hot ceramic material to spread. This failure mode could cause health and safety consequences if the failure occurred in a populated area. Failure of a surge arrester can also cause ground and asset fires. Fire Loss Consequence (FLC) modelling data was used to assess potential losses due to wildfire ignitions caused by surge arrester failures. This data, provided by Energy Safe Victoria (ESV), further quantifies failure consequences associated with network assets in the traditionally homogenous "hazardous bushfire risk areas" (HBRA).

Risk assessments performed using condition assessments and FLC data has shown that units which are both in poor condition (C4 & C5) and situated in areas susceptible to wildfire should be replaced as a priority.

Proposed Surge Arrester Replacement Program

A new program of pre-emptive surge arrester replacements specifically targeting porcelain-housed silicon carbide surge arresters in high bushfire risk areas is proposed. This program will replace an average of 2,800 surge arresters or 1,400 installations per annum and will be completed in 2025. Such replacements provide community benefits primarily in the form of wildfire avoidance, and protection of costly electrical plant.

Line surge arresters have traditionally been replaced if they are identified as being unfit for service during routine inspection or if the installation (transformer, switch, regulator, cable head) they are protecting is replaced. Surge arrester risk assessments have shown that a step increase in replacement volumes is required to promptly address the risks in an accelerated manner.

AusNet Services' RINs

AusNet Services has not been consistent in the categorisation of the assets titled 'Other – Surge Diverters' in the RINs. In Category Analysis RINs for 2009-13 and 2014 (2.2 Repex and 5.2 Asset Age Profile), AusNet Services included a category in the 'Other' asset group titled 'Other – Surge Diverters'. This line only included the surge arresters located in zone substations. It did not include the majority of the surge arrester population located on the HV distribution feeders.

In contrast, in the EDPR Reset RIN (2.2 Repex), AusNet Services included forecast expenditure and volumes for all surge arresters, including zone substation and line surge arresters, in the 'Other' category in an asset group titled 'Other – Surge Diverters'. The forecast asset replacements and expenditure in the EDPR Reset RIN relates to the pre-emptive replacement of surge arresters located on HV distribution feeders.

AusNet Services is willing to discuss this important issue with the AER if necessary to ensure AusNet Services' approach is clearly understood.

Repex Modelling

Predictive asset replacement modelling based on historical data will not accurately model the proposed volume of surge arrester replacements because:

- The historical RINs show a population of approximately 1,600 Surge Diverters when the actual volume of surge arresters located on HV distribution feeders is approximately 125,000.
- The unit rate for a surge arrester replacement calculated from the historical RIN is based on replacement of surge arresters in zone substations and is much higher than the rate proposed for replacement of surge arresters on HV distribution feeders.
- This modelling does not consider the need for a step change in replacement volumes due to the risks associated with deteriorated assets and the consequences of any failures.

The AER has used predictive modelling to assess the prudency of Repex proposed in the "Other" asset group. Predictive modelling is age based and does not effectively account for condition of assets and risks associated with explosive type based failure modes exhibited by gapped silicon carbide surge arresters. In addition, predictive modelling does not consider location based failure consequence such as those related to bushfire ignition.

Further, predictive modelling uses age profiles to forecast replacement volumes. Surge Arrester age profiles provided by AusNet Services in historic Annual RIN's have related to zone substation surge arresters only.

As the age profiles and volumes of surge arrester units situated in zone substations are considerably different to those operating on overhead line systems, AusNet Services does not consider predictive based modelling using the volumes of surge arresters in zone substations as an accurate means to assess prudency.

A more appropriate basis for assessment is to use a risk based economic assessment to determine the volume of replacements.[25]

VBRC Declared Areas project

The Victorian Government intends to amend the *Electricity Safety (Bushfire Mitigation) Regulations 2013* to introduce a new regulatory obligation which requires a distributor to include in its Bushfire Mitigation Plan details about how it will ensure electric lines within a 'declared area' will be insulated or placed underground.[26] According to the Regulatory Impact Statement (RIS) released by the Victorian Government, the new obligation will impose heightened powerline construction standards which require new electric lines and electric lines being replaced or subject to significant maintenance, to be insulated or placed underground.

These amendments to the regulations, and subsequently to AusNet Services' Bushfire Mitigation Plan, will require AusNet Services to incur additional capital expenditure during the 2016-20 regulatory control period.

Preliminary Decision

In its Preliminary Decision for Powercor, the AER approved a contingent project for the new powerline construction standards which will apply in high bushfire risk areas of the State (codified or declared areas).[27]

Due to the level of uncertainty regarding the detail of this new requirement, AusNet Services did not propose any capital expenditure in the Initial Proposal relation to projects necessary to comply with the new regulatory obligation. However, since then, the Government has provided AusNet Services with each codified area to which the new minimum design standards will apply. AusNet Services can therefore now provide a firm capital expenditure forecast as part of this Revised Proposal.

Within declared areas, specific powerline design and maintenance standards will apply to AusNet Services via its Bushfire Mitigation Plan (and, in turn, its ESMS). These standards will set out requirements in relation to, among other things, the replacement of bare electric lines with a voltage of between 1 kV and 22 kV powerlines with insulated technologies that offer reduced risk of bushfire ignition, including underground cable, aerial bundled cable or spacer cable. As these technologies are substantially more costly than bare powerlines, AusNet Services will require additional capital expenditure in order to comply with the new standards.

Response to Preliminary Decision

When AusNet Services submitted its initial regulatory proposal, there was considerable uncertainty as to how the new powerline design and maintenance standards for declared areas would be applied.

The Victorian Government has now committed to a new design standard and released a RIS and draft regulations which contain the standard. The draft regulations clarify which 105 areas (in Powercor and AusNet Services' network service area) will be declared, when decisions for declaration will be made, and the trigger to replace conductors that have reached end of life.[28]

The Government has also now committed to the progressive replacement of all 22 kV distribution feeders with aerial bundled cable, underground cabling or other technology that delivers greatly reduced bushfire risk as the feeders reach the end of their engineering life. Priority is also to be given to distribution feeders in the areas of highest bushfire risk (i.e. declared areas).

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25 A risk based economic assessment is described in AusNet Services' asset management strategy AMS 20-67 Line Surge Arresters, submitted with the Initial Proposal in April 2015.

26 DEDJTR, *Regulatory Impact Statement for the Bushfire Mitigation Regulations Amendment,* November 2015, p. 94.

27 AER, Powercor *Preliminary Decision 2016-20, Attachment 6 – Capital Expenditure*, October 2015, p. 124.

28 DEDJTR, *Regulatory Impact Statement for the Bushfire Mitigation Regulations Amendment,* November 2015, Appendix D.

It is noted that the new design standard applies an ongoing obligation rather than a discrete project as part of AusNet Services' replacement program[29]. This means it is not suited to the contingent project framework because, unlike a project, it has no delivery timeframe[30].

AusNet Services is supportive of this legislative amendment and the Government's approach to the new design standard for high bushfire risk areas, and understands the standard will be accepted by industry. As such, there is sufficient certainty that the regulations for declared areas will be made as currently drafted.

Given these factors, AusNet Services can confidently provide cost estimates associated with the new design standard and forecast required capex in declared areas in its network area for the 2016-20 regulatory control period.

Forecast capital expenditure for declared areas

Mandating new powerline design standards in high bushfire risk areas will have a substantial impact on AusNet Services' capital expenditure over the 2016-20 regulatory control period.

The proposed standard for declared areas (also known as codified areas) includes the undergrounding of powerlines or insulating conductors. This is consistent with the programs approved by the Victorian Government's Powerline Replacement Fund but it will not fund expenditure incurred in response to the new standard.

In AusNet Services' network area, over 1,200 kilometres of polyphase line is to be replaced at end of life. Consistent with AusNet Services' forecast replacement program, AusNet Services expects to replace 146 kilometres of bare open wire conductor in the 2016-20 regulatory control period in accordance with the new standard.

The Victorian Government acknowledges that the costs associated with the proposed regulations for declared areas include the costs of putting powerlines underground or insulating conductors. The Government estimates that the cost of undergrounding or insulating conductors for polyphase powerlines will be significant, with unit rates estimated at $400,000 per kilometre ($2015).[31]

The unit rates per kilometre of polyphase line will depend on:

- the nature of the powerline design and maintenance standards to apply within a declared area;
- the size and number of declared areas; and
- the specific conditions of each span to be replaced.

AusNet Services has forecast the expenditure based on the cost of undergrounding powerlines or insulating conductors per kilometre on its network at specific locations mandated in the regulations. Only the incremental costs have been included, as the fire loss consequence costs are already reflected in AusNet Services' replacement expenditure forecasts for 2016-20. The cost per kilometre has been calculated as follows:

- the average cost per kilometre for like-for-like replacement is based on AusNet Services' average historical cost of like-for-like replacement;
- the average cost per kilometre for like-for-different modelling is an average of completed works by AusNet Services of over 35 kilometres in declared areas.

29 The requirements also apply to augmentation in codified areas, however, AusNet Services is not anticipating any augmentation in these areas in 2016-20.

30 NER, cl 6.5.7(e)(9A) requires the AER to have regard to whether forecast capex should more appropriately be included as a contingent project.

31 DEDJTR, *Regulatory Impact Statement for the Bushfire Mitigation Regulations Amendment,* November 2015, p. 94.

These cost estimates do not relate to any costs associated with the installation of REFCL devices, including line balancing, network hardening or the installation of additional phases or spans.

AusNet Services has undertaken an analysis of the estimated incremental costs associated with these additional standards including a mix of putting powerlines underground and insulating conductors using existing technology. It is estimated that the incremental costs will be $471,000 per kilometre excluding overheads ($2015).

Table 3.6: Incremental cost of undergrounding or insulating polyphase powerlines

($m, 2015 real)	Unit Cost
Direct cost per kilometre	$471,000
On-costs and overheads (average)	12.8%
Total cost per kilometre	**$531,000**

Source: AusNet Services

The Government has acknowledged that AusNet Services will be faced with these costs due to the significant realignment and rocky terrain in its network.[32]

The average cost per kilometre has been multiplied by the 146 kilometres of powerlines that AusNet Services estimates will need to be placed underground or insulated, to calculate the total expenditure required in order to comply with this new regulatory obligation.

Over the 2016-20 regulatory control period, the total (incremental) costs are estimated to be $77.1 million ($2015) including capitalised overhead.

Table 3.7: Revised Proposal – Declared Areas (incremental repex)

($m, 2015 real)	2016	2017	2018	2019	2020	TOTAL
Direct cost (excluding overheads)	-	16.7	16.7	16.7	16.7	**67.0**
Total cost (including overheads)	-	19.0	19.2	19.4	19.5	**77.1**

Source: AusNet Services

The Government has stated that it is prudent to proceed with this capital expenditure given that it targets the most dangerous areas in the state, results in a substantial reduction in the state's bushfire risk, and potentially avoids the very significant cost associated with a major bushfire event.[33]

AusNet Services considers that its proposed additional capital expenditure in relation to undergrounding of powerlines or insulating of conductors satisfies the capital expenditure criteria, taking into account the capital expenditure factors, because:

- it will be reasonably required in order to achieve the capital expenditure objective to comply with all applicable regulatory obligations or requirements associated with the provision of standard control services, per clause 6.5.7(a)(2);
- the proposed capital expenditure is not otherwise included in AusNet Services' total forecast capital expenditure for the 2016-20 regulatory control period;
- the proposed capital expenditure reasonably reflects the capital expenditure criteria as it reflects the efficient and prudent costs of achieving the capital expenditure objectives. In particular, it reflects the efficient and prudent costs of complying with the anticipated regulatory obligations or requirements and a realistic expectation of the input costs needed to meet that regulatory obligation or requirement; and

[32] DEDJTR, *Powerline Bushfire Safety Program – AAP Information Paper (Project 16C),* December 2015, p. 10.

[33] DEDJTR, *Regulatory Impact Statement for the Bushfire Mitigation Regulations Amendment,* November 2015, p. 109.

- the proposed capital expenditure and the information provided in relation to these matters, comply with the RIN issued to AusNet Services.

Undertaking the proposed capital expenditure project also contributes to the achievement of the NEO, particularly with respect to the increased safety of supply it is expected to achieve. The safety benefits for communities and the reduced costs associated with bushfires were acknowledged by the Government in the RIS.[34]

Government Funded Repex – Powerline Replacement Fund

On 8 May 2015 AusNet Services received a private ruling from the ATO that altered the tax liability associated with powerline replacement works being undertaken by AusNet Services and funded by the Victorian Government's Powerline Replacement Fund (PRF). The ruling means this expenditure will not incur a tax liability. In early July 2015, months prior to the Preliminary Decision, AusNet Services provided the AER with all the necessary models to reflect this ruling, and a letter explaining the implications of the ruling to the regulatory review[35]. This was followed up with a formal negative pass-through submission in relation to amounts recovered during the 2011-15 regulatory control period, which reiterated the earlier information[36].

In the Revised Proposal, PRF capex is excluded for purposes of gross capex, and the matching contribution have been excluded from the total contributions forecast included in the PTRM. This ensures that the taxation allowance is being modelled correctly (that is, set to zero).

3.4.3 Revised Proposal

AusNet Services' proposes three additions to the AER's Preliminary Decision on repex (all figures in real $2015):[37]

- Downed Conductor Sectionalisation project (SCADA category), $15.7 million;
- Surge Arresters project ('Other' category), $23.1 million; and
- VBRC Declared Areas project (new category), $67.0 million.

Table 3.8: Revised Proposal – Replacement Expenditure ($m, 2015 real)

	2016	2017	2018	2019	2020	Total
Preliminary Decision	161.0	150.8	149.2	152.2	145.2	758.4
Less PRF capex	-12.6	-12.3	-12.0	-11.7	-11.4	-60.1
Downed Conductor Sectionalisation Project	1.0	1.8	3.6	4.9	4.4	15.7
Surge Arresters Project	4.6	4.6	4.6	4.6	4.6	23.1
Declared Areas Project	-	16.7	16.7	16.7	16.7	67.0
Total Replacement Expenditure	**153.1**	**161.3**	**162.2**	**167.0**	**160.0**	**803.6**

Source: AusNet Services

Notes: Excludes overheads and final adjustment for revised labour price escalation. Figures may not reconcile to total due to top down escalation adjustments.

34 DEDJTR, *Regulatory Impact Statement for the Bushfire Mitigation Regulations Amendment,* November 2015, p. xi.

35 AusNet Services, ATO Ruling on liabilities from Victorian Government's Powerline Replacement Fund contributions – amendments to 2016-20 revenue proposal, 6 July 2015.

36 AusNet Services, ATO Ruling on liabilities from Victorian Government's Powerline Replacement Fund contributions – negative pass through application, 10 September 2015.

37 Direct costs only, excluding real cost escalation.

3.5 Contingent Projects

This section sets out AusNet Services' response to the Preliminary Decision with respect to events covered by contingent projects applying to AusNet Services in the current regulatory control period[38].

The contingent project framework allows a distributor to propose capital expenditure projects which are reasonably required during the regulatory control period but for which the distributor cannot provide sufficiently certain expenditure forecasts at the time its revenue proposal for that period is assessed.

The capital expenditure component of a proposed contingent project must be greater than either $30 million or 5% of the annual revenue requirement of the distributor for the first year of the regulatory period, whichever is the larger amount. The relevant threshold for AusNet Services is $30 million ($2016 nominal).[39]

A contingent project must have a clearly defined trigger event. If the event occurs during the regulatory control period, the distributor may apply to the AER to amend its distribution determination to enable additional revenue to be recovered during the regulatory period based on the project's forecast required capital and operating expenditure.

3.5.1 Preliminary Decision

In its Preliminary Decision for Powercor, the AER approved a contingent project for the installation of Rapid Earth Fault Circuit Limiter (REFCL) electrical protection devices.[40] AusNet Services did not propose contingent projects to fund its bushfire mitigation initiatives in its initial regulatory proposal for the 2016-20 regulatory control period because, at that time, significant uncertainty remained about the nature and scope of new bushfire safety obligations.

Since the Initial Proposal was submitted, the Victorian Government released a RIS detailing its proposal to amend the *Electricity Safety (Bushfire Mitigation) Regulations 2013* to introduce new obligations on distributors in an effort to reduce the likelihood that electricity distribution powerlines start bushfires.[41] These proposed amendments require AusNet Services to amend its Bushfire Mitigation Plan to set out how it will enhance the protection of powerlines, in its network area in the highest consequence bushfire risk areas.

In light of the detail provided in the RIS, AusNet Services is now in a position to propose a contingent project for the 2016-20 regulatory control period in relation to its anticipated new bushfire mitigation obligations.

3.5.2 Proposed Amendments to the Electricity Safety legislation

The Victorian Bushfire Royal Commission (VBRC) made a number of recommendations in relation to electricity network assets. The VBRC recommended the progressive replacement of SWER power lines and 22 kV feeders, and partially disabling automatic circuit reclosers during peak bushfire season (recommendations 27 and 32). The Victorian Government subsequently established the Powerline Bushfire Safety Taskforce (PBST) to review these recommendations and other options for reducing the risk of catastrophic bushfires from electricity supply networks. The PBST presented its recommendations to Government on 30 September 2011. The Government's response in December 2011 accepted the PBST's proposal to install REFCL electrical protection devices in order to minimise the risk of fire ignitions for electricity network assets. The recommendation was for

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38 The current regulatory period refers to the period that commenced on 1 January 2016, and is the regulatory control period which is the focus of this Revised Proposal.

39 Based on AusNet Services' Preliminary Decision, 5% of the annual revenue requirement for the first year of the regulatory period is $29.3m (Nominal, smoothed).

40 AER, Powercor *Preliminary Decision 2016-20, Attachment 6 – Capital Expenditure*, October 2015, p. 124.

41 DEDJTR, *Regulatory Impact Statement for the Bushfire Mitigation Regulations Amendment,* November 2015.

distributors to include in their Bushfire Mitigation Plans the locations and timing for the rollout of these devices.

The implementation of the PBST's recommendations is now the subject of proposed amendments to the *Electricity Safety (Bushfire Mitigation) Regulations 2013*. The objective of the proposed amendments is to reduce the likelihood that electricity distribution powerlines start bushfires.[42] The following proposals have been shortlisted and assessed by the Victorian Government in the RIS:

1. **Enhance the network protection for polyphase powerlines** – including ensuring that polyphase electric lines have the required capacity to reduce voltage in the event of a phase-to-ground fault. Network protection for polyphase powerlines can be enhanced by installing a REFCL device at the zone substation that supplies the polyphase powerline. The Victorian Government has proposed defining 45 zone substations with the highest consequence bushfire risk area with action to be taken within seven years.
2. **Enhance the network protection for SWER powerlines** – including installing Automatic Circuit Reclosers (ACR) on all SWER lines in AusNet Services' network. AusNet Services has already installed new generation SWER ACRs on its SWER powerlines during the 2011-15 regulatory control period[43] and so does not require an expenditure allowance to meet this requirement.
3. **Powerlines in declared areas to be put underground or insulated** – including covering or placing underground electric lines with voltage under 22 kV. The Victorian Government has proposed to amend the regulations to require electricity distributor's Bushfire Mitigation Plans to set out how powerlines in declared areas would be put underground or insulated when they are replaced or new assets constructed.[44]

Based on the draft of the amending regulations contained in the RIS, AusNet Services will be required to:

- Include details in its Bushfire Mitigation Plan outlining how it will enhance the network protection capabilities for polyphase powerlines originating from prescribed zone substations in the highest consequence bushfire risk areas by 2020. Sixteen of AusNet Services' substations are prescribed in the draft regulations. The draft regulations are technology neutral, and although the RIS acknowledges that there is currently only a limited range of technologies that will meet the proposed regulations[45], the reality is that AusNet Services will be required to install REFCLs in order to comply with this obligation.
- Outline in its Bushfire Mitigation Plan how powerlines that are replaced or constructed in declared areas will be placed underground or insulated.

AusNet Services' Bushfire Mitigation Plan forms part of its Electricity Safety Management Scheme (ESMS), which is accepted by Energy Safe Victoria (ESV).

Submissions to the Government's RIS were due on 30 December 2015. Because of the magnitude of the necessary steps required to roll out REFCLs (which include not only significant capital investment but overhauling network operation practices and fault automation schemes) and the potential for changes to these proposed regulations in relation to REFCLs (and the installation timeframe in particular) in the final amending regulations, AusNet Services is not in a position to forecast REFCLs with great certainty in this Revised Proposal. It is therefore appropriate that expenditure on REFCL installation projects be managed as a contingent project in the current regulatory control period.

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42 DEDJTR, *Regulatory Impact Statement for the Bushfire Mitigation Regulations Amendment,* November 2015, p. x.

43 DEDJTR, *Regulatory Impact Statement for the Bushfire Mitigation Regulations Amendment,* November 2015, p. xii.

44 DEDJTR, *Regulatory Impact Statement for the Bushfire Mitigation Regulations Amendment,* November 2015, p. x.

45 DEDJTR, *Regulatory Impact Statement for the Bushfire Mitigation Regulations Amendment,* November 2015, p. 46.

3.5.3 Response to Preliminary Decision

AusNet Services proposes a contingent project relating to an expenditure program to reduce the likelihood that powerlines forming part of its electricity distribution network start bushfires. The program is required both to comply with a new regulatory obligation or requirement, and will improve the reliability and security, and the safety, of the distribution system.

Table 3.9 Contingent project capex proposed for 2016-20 regulatory control period

Event	Value ($2016)	Trigger
Installation of REFCLs - project to ensure polyphase electric line has the required capacity to reduce voltage in the event of a phase-to-ground fault	Approximately $214 million[46]	(a) The imposition on AusNet Services of a new or changed regulatory obligation or requirement in respect of phase-to-ground fault standards. In this paragraph, 'regulatory obligation or requirement' takes the meaning in section 2D of the law. (b) Energy Safe Victoria provisionally accepts, accepts or determines AusNet Services' bushfire mitigation plan for 2016/17, and that bushfire mitigation plan contains details of the capital program AusNet Services proposes to undertake during the 2016-20 regulatory control period in respect of phase-to-ground fault standards. (c) Completion of a planning report by AusNet Services which accurately identifies the scope of works and proposed costings for the contingent project.

Source: AusNet Services

In proposing this contingent project AusNet Services has had regard to the contingent project criteria in NER clause 6.6A.1. It considers the proposed project and the associated trigger event meet the requirements for approval as a contingent project.

To be accepted as a contingent project, the proposed capital expenditure component for the project must be greater than either $30 million or 5% of the annual revenue requirement of the distributor for the first year of the regulatory control period. The relevant threshold for AusNet Services is $30 million ($2016 nominal).[47]

Rules requirement

Clause 6.6A of the Rules requires a distributor seeking approval of a proposed contingent project to provide in its building block proposal:

- a description of the proposed contingent event, including reasons why the distributor considers the project should be accepted as a contingent project for the regulatory proposal;
- a forecast of the capital expenditure that the distributor considers is reasonably necessary to undertake the proposed contingent project;
- the methodology used to develop the forecast and the key assumptions that underlie it;

[46] Including overhead rate of 12.6% as per AER's Preliminary Decision.

[47] Based on AusNet Services' Preliminary Decision, 5% of the annual revenue requirement for the first year of the regulatory period is $29.3m (Nominal, smoothed).

- information that demonstrates that the proposed contingent project is reasonably required in order to achieve one or more of the capital expenditure objectives;
- information that demonstrates that the proposed contingent capital expenditure complies with the capital expenditure threshold; and
- the trigger events which are proposed in relation to the proposed contingent project and an explanation of how each of these conditions or events addresses the matters referred to clause 6.6A.1(c).

For a proposed contingent project, clause 6.6A.1(b) requires that the AER must be satisfied that the proposed contingent project meets the following criteria:

- the proposed contingent project is reasonably required to be undertaken in order to achieve any of the capital expenditure objectives;
- the proposed capital expenditure:
  - is not otherwise provided for in the total of the forecast capital expenditure for the relevant regulatory control period;
  - reasonably reflects the capital expenditure criteria, taking into account the capital expenditure factors;
  - exceeds either the $30 million or 5% of the value of the annual revenue requirement for the distributor for the first year of the relevant regulatory control period, whichever is the larger amount;
- the proposed contingent project and the proposed contingent capital expenditure comply with the relevant requirements of any relevant Regulatory Information Notice; and
- the trigger events in relation to the proposed contingent capital expenditure which are proposed by the distributor in its regulatory proposal are appropriate.

Forecast capital expenditure of contingent project

The Victorian Government is consulting on its proposal to amend the *Electricity Safety (Bushfire Mitigation) Regulations 2013* to impose a new regulatory obligation on Victoria distribution businesses regarding preventative strategies and programs to be taken to manage earth faults. In order to fund expenditure which is reasonably required to comply with the new obligations, AusNet Services proposes that the AER determines AusNet Services' RECFL installation project is a contingent project. For the purposes of this contingent project, AusNet Services proposes contingent capital expenditure for the installation of REFCLs at 16 zone substations and associated network hardening works in the 2016-20 regulatory period of approximately $214 million ($2016).

The draft amending regulations propose that AusNet Services install REFCLs at 16 zone substations by 31 December 2020 (with 5 additional zone substations completed by 2023). These 16 zone substations would be delivered in two delivery groups (or tranches). The exact number and timing of the REFCLs installations that AusNet Services will be required to install in its network during the current regulatory control period will be confirmed once the amending regulations are made.

Dividing the zone substations into two delivery tranches reflects the Victorian Government's classification of the highest consequence bushfire risk areas. The Government has ranked 45 zone substations based on their bushfire risk reduction per dollar spent and expert advice obtained by the PBST.[48] The timing of the installation of each REFCL at each zone substation is in line with the Government's reduction in risk estimations based on a rating system: zone substations with the

[48] DEDJTR, *Regulatory Impact Statement for the Bushfire Mitigation Regulations Amendment,* November 2015, p. 53.

highest bushfire risk prior to installation of REFCL have a rating of 5, while those with the lowest bushfire risk are given a rating of 1.[49]

The RIS calls for submissions on this timing and risk reduction rating profile. As such, this delivery profile has yet to be agreed and finalised with distributors and the ESV. There are technological uncertainties and operational challenges associated with the installation of REFCL devices, including single supplier risk (Swedish Neutral is currently the only supplier of RCC Ground Fault Neutralizers (GFN)). Further trials and initial installations of the REFCL devices by AusNet Services, Jemena Electricity Network and Powercor, will be instrumental in clarifying the operational and technological constraints and in ensuring the success of the program.

Recent trials have highlighted the extent to which issues emerge as the technology is applied in different sections of the network. It has become apparent that the installation of REFCLs will require significant network changes and operational challenges. The current timetable for REFCL installations proposed by the Victorian Government allows limited time for understanding and managing the technological and operational risks. Further, the costs of the RECFL installations are uncertain due to the untested nature of the technology in a high bushfire risk setting.

AusNet Services has based its estimates of the costs of installing each REFCL on the outturn costs from recent REFCL technology trials undertaken by AusNet Services and United Energy. The costs associated with the installation of REFCLs include:

- direct costs of installing REFCLs, including network compatibility, hardening and balancing costs;
- additional maintenance costs due to the installation of the REFCL; and
- project management, administration and compliance costs.

The Government acknowledges that the estimated costs for the REFCL and required ancillary equipment vary considerably per zone substation, and have been estimated by the Government to range from $2.2 million to $22.1 million.[50] Variations in costs are due to:

- the configuration of the transformers at a zone substation (for example, some zone substations may require two REFCL devices);
- the REFCL technology assumed;
- the extent to which the load on the zone substation is not balanced;
- the extent to which it is expected that existing equipment will need to replaced; and
- the extent to which the zone substation design has been optimised for the installation of the REFCL devices.[51]

In developing the forecast of the capital expenditure for the purposes of the contingent project, AusNet Services has taken into account the particular characteristics of each zone substation and variations in the size of the associated network compared to the base zone substation. For example, the cost forecast for each zone substation reflects:

- the number of distribution assets, specifically the type of surge arresters, line capacitors, regulators and ACRs associated with the zone substation;
- the number of zone substation assets, specifically feeder protection equipment, capacitor banks, voltage transformers and weather and station services; and
- other assets such as distribution transformers or line insulators associated with the zone substation.

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49 DEDJTR, *Regulatory Impact Statement for the Bushfire Mitigation Regulations Amendment,* November 2015, p. 77.

50 DEDJTR, *Regulatory Impact Statement for the Bushfire Mitigation Regulations Amendment,* November 2015, p. 68.

51 DEDJTR, *Regulatory Impact Statement for the Bushfire Mitigation Regulations Amendment,* November 2015, page 68.

AusNet Services' estimated costs range from $5 million to $23 million per zone substation. This would lead to proposed capital expenditure of $102.1 million for the first tranche, and $113.6 million for the second.

The method and standards for the installation of REFCLs are also yet to be finalised. Recent trials undertaken by AusNet Services at Kilmore South zone substation highlighted integration concerns with SCADA systems and balancing. Additionally, the extent of network hardening is yet to be determined.

Trigger event for installation of REFCLs project

In its Preliminary Decision for Powercor, the AER specified a three-factor trigger in relation to an 'earth fault current limiting' contingent event:

1. Passage by the State of Victoria of a law or regulations or other regulatory instrument that gives effect to recommendation 27 of the Victorian Bushfires Royal Commission, whether in part or in full.
2. The formation of capital projects into tranches. All the projects which constitute a tranche must be listed in a regulatory instrument or a bushfire mitigation plan approved by Energy Safe Victoria for completion in the 2016–20 regulatory control period.
3. Every project incorporated in a tranche must be subject of a detailed design investigation which accurately identifies the scope of works and proposed costings.[52]

In determining whether a trigger event is appropriate, clause 6.6A.1(c) of the Rules states that the AER must have regard to the need for a trigger event:

- to be reasonably specific and capable of objective verification;
- to be a condition or event which if it occurs, makes the undertaking of the proposed contingent event reasonably necessary in order to achieve any of the capital expenditure objectives;
- to be a condition or event that generates increased costs that relate to a specific location rather than affecting the distribution network as a whole;
- to be described in such terms that the occurrence of that event or condition is all that is required for the distribution determination to be amended under clause 6.6A.2; and
- to be an event or condition, the occurrence of which is probable during the regulatory control period but the inclusion of capital expenditure is not appropriate because:
- it is not sufficiently certain that the event or condition will occur during the regulatory control period; or
- the costs associated with the event or condition are not sufficiently certain.

AusNet Services has the following concerns regarding the AER's proposed three-factor trigger:

- **Factor 1:** Although the RIS provides for the new regulatory obligation to be created via amending regulations, AusNet Services proposes to draft this factor more broadly to include reference to legislation and other regulatory instruments. Given the regulations won't be finalised until after the Substitute Determination is published, it is appropriate that the trigger event accommodate the possibility that the obligation may be imposed via other legislative or administrative instruments.
- **Factor 2:** AusNet Services proposes amendments to this factor to reflect more accurately the ESV's task under the Electricity Safety Act. AusNet Services also proposes to describe more specifically the content to be included in the Bushfire Mitigation Plan.

52 AER, Powercor *Preliminary Decision 2016-20, Attachment 6 – Capital Expenditure*, October 2015, p. 126.

- **Factor 3:** AusNet Services agrees it is appropriate that the trigger event requires there to be sufficient clarity and certainty about the scope and timing of works and the costs of the contingent project before a distributor can seek to have its distribution determination amended. However, the AER's proposal to require a distributor to undertake 'detailed design investigation' is ambiguous and is not capable of objective verification. Further, it does not correspond to standard project management or approval processes. To address these matters, AusNet Services proposes that this limb be amended to require AusNet Services to complete a planning report which accurately identifies the scope of works and estimated cost for the contingent project.

AusNet Services' proposed trigger, shown in the table below, is largely based on the three-factor trigger proposed by the AER in its Preliminary Decision.

Table 3.10: Proposed trigger event for installation of REFCL contingent project

Trigger event component	AER Preliminary Decision for Powercor[53]	AusNet Services' Proposed Amendment
Factor 1 – Creation of regulatory obligation	Passage by the State of Victoria of a law or regulations or other regulatory instrument that gives effect to recommendation 27 of the Victorian Bushfires Royal Commission, whether in part or in full.	The imposition on AusNet Services of a new or changed regulatory obligation or requirement in respect of phase-to-ground fault standards. In this paragraph, 'regulatory obligation or requirement' takes the meaning in section 2D of the law.
Factor 2 – Capital works program	The formation of capital projects into tranches. All the projects which constitute a tranche must be listed in a regulatory instrument or a bushfire mitigation plan approved by Energy Safe Victoria for completion in the 2016–20 regulatory control period.	Energy Safe Victoria provisionally accepts, accepts or determines AusNet Services' bushfire mitigation plan for 2016/17, and that bushfire mitigation plan contains details of the capital program AusNet Services proposes to undertake during the 2016-20 regulatory control period in respect of phase-to-ground fault standards.
Factor 3 – Completion of Planning Report	Every project incorporated in a tranche must be subject of a detailed design investigation which accurately identifies the scope of works and proposed costings.	Completion of planning report by AusNet Services which accurately identifies the scope of works and provides cost estimates for the contingent project.

Source: AusNet Services and AER, Powercor Preliminary Decision 2016-20, Attachment 6.

3.5.4 Revised Proposal

AusNet Services proposes a contingent project for a RECFL installation project for the 2016-20 regulatory control period. For the purposes of this contingent project, AusNet Services proposes contingent capital expenditure for the installation of REFCLs at 16 zone substations in the 2016-20 regulatory control period of approximately $214 million ($2016).[54]

53 AER, Powercor *Preliminary Decision 2016-20, Attachment 6 – Capital Expenditure*, October 2015, p. 126.

54 Including overhead rate of 12.6% as per AER's Preliminary Decision.

AusNet Services considers that the proposed installation of RECFLs contingent project satisfies the criteria for acceptance as a contingent project because:

- the project is reasonably required to be undertaken in order to comply with new regulatory obligations or requirements associated with the provision of standard control services, per clause 6.5.7(a)(2);
- the proposed contingent capital expenditure is not otherwise provided for in AusNet Services' total forecast capital expenditure for the 2016-20 regulatory control period;
- the proposed contingent capital expenditure reasonably reflects the capital expenditure criteria set out in clause 6.5.7(c) of the Rules as it reflects the efficient and prudent costs of achieving the capital expenditure objectives;
- the proposed contingent capital expenditure will exceed the greater of $30 million based on the best estimates available at this time;
- the proposed contingent project and proposed contingent capital expenditure, and the information provided in relation to these matters, comply with the RIN issued to AusNet Services for the purposes of the making of a distribution determination for the 2016-20 regulatory control period; and
- the proposed trigger event is appropriate having regard to the matters specified in NER clause 6.6A.1(c).

3.6 Connections

Customer connections capex is expenditure to establish new customer connections to the network at the customer's request, including that part of the cost recovered through customer contributions towards connection/augmentation work. AusNet Services' customer connections capex program is required to facilitate network growth and to meet its obligations to connect customers in its distribution area, consistent with the requirements of NER 6.5.7(a)(1) and (2).

3.6.1 Preliminary Decision

The Preliminary Decision approved AusNet Services' customer connections direct capex forecast of $368 million and associated customer contributions forecast of $214 million.[55] The decision approved the key components of the proposal, that is:

- The forecast volumes for determining gross connections capex;
- The forecast unit rates for determining gross connections capex; and
- The forecast customer contributions for determining net connections capex.

However the Preliminary Decision noted that the Victorian Government is intending to adopt the connections arrangements set out in the National Electricity Customer Framework (NECF) in Victoria and that AusNet Services will need to reconsider its connections capex forecast in light of how the new framework would affect customer contributions.[56]

3.6.2 Response to Preliminary Decision

AusNet Services had previously noted that connections capex will be impacted if the Victorian Government decides to adopt the national connections framework. The Victorian Government has since confirmed it is intending to legislate to adopt Chapter 5A of the National Electricity Rules which

55 Excluding government contributions of $60.4 million for the Powerline Replacement Program.

56 AER, *AusNet Services Preliminary Decision*, Attachment 6 – Capital expenditure, October 2015, p. 53.

contains the national connections framework.[57] The likely timing of this change is not yet confirmed, but it is understood it will be 1 July 2016 at the earliest or 1 January 2017 at the latest. This means AusNet Services will become subject to the relevant parts of Chapter 5A of the National Electricity Rules and the AER's *National Electricity Connection Charge Guideline* will replace *Guideline 14* during the current regulatory period.

The changes to AusNet Services' regulatory obligations and requirements necessitate a reconsideration of relevant service classification and customer connection capex forecasts.

Gross Connections Capex

Gross connections capex is a function of forecast volumes and forecast unit rates. AusNet Services takes connections unit rates and multiplies these by volume forecasts for each connection category. The AER accepted AusNet Services' gross capex forecasting methodology in its Preliminary Decision. AusNet Services applies the same methodology in this Revised Proposal.

AusNet Services accepts the Preliminary Decision which approved forecast unit rates, which were based on historical rates, and has not amended those rates in developing its Revised Connections Capex forecast.

AusNet Services produces each volume forecast by applying a trend approach to the historic proportion for each activity included in its forecast connection volumes included as part of its opex forecast.[58]

However, AusNet Services has revised its forecast volumes to reflect updated customer numbers forecasts following the publication of new forecasts of Victorian population growth by the Victorian Government in September 2015. Specifically, customer connections growth is forecast to be higher (on an average basis) across AusNet Services' area. As explained in Chapter 1 – Demand and Energy of this Revised Proposal, this equates to 1.7% growth in connections, as opposed to 1.5% presented in the Initial Proposal.

The updated customer numbers increase the forecast total customer numbers by 6,764 by the end of the 2016-20 regulatory period. AusNet Services has not revised its connections capex estimate for 2015 to reflect the revised customer connections forecast as the difference is immaterial.

The following table sets out the forecast assumptions used to forecast gross connections capex.

Table 3.11: Connections Forecast Assumptions

Connection Category	Unit Rate	Volume
Medium Density Housing	CY14 historical unit rate	Historical proportion of forecast residential connections
U/Ground Service Installation	CY14 historical unit rate	Historical proportion of forecast residential connections
Business Supply Projects	5 yr historical average unit rate (2010-14)	Historical proportion of forecast non-residential connections
Private Electric Line Replacement	5 yr historical average direct costs incurred (2010-14)	N/A – forecast driven by historical costs incurred
Low Density Housing	5 yr historical average unit rate (2010-14)	Historical proportion of forecast residential connections

[57] National Electricity (Victoria) Further Amendment Bill 2015, Part 2, Section 5, introduced into Victorian Parliament on 8 December 2015. See www.legislation.vic.gov.au.

[58] AusNet Services, *Regulatory Proposal 2016–20 (Initial Proposal)*, 30 April 2015, p. 159.

Connection Category	Unit Rate	Volume
Cogeneration Projects	4 yr historical average direct costs incurred (2010-13)	N/A – forecast driven by historical costs incurred

Source: AusNet Services

Customer contributions

In its Initial Proposal AusNet Services had forecast the amount a customer contributes to the cost of their connection in accordance with the Victorian Essential Services Commission's *Guideline 14*. This included introducing a marginal cost of reinforcement (MCR) to better reflect the true costs borne by AusNet Services (and other customers) when a new customer connects.

As noted above, the Victorian Government has since confirmed it is intending to legislate to adopt Chapter 5A of the National Electricity Rules which sets out the national connections framework, with the change coming into effect early in the current regulatory period.

Under the AER's Guideline, the level of customer contribution is calculated using the following formula:

CC = ICCS + ICSN – IR

Where:

CC is the maximum amount of the customer's capital contribution for standard control services;

ICCS (Incremental Cost Customer Specific) is the amount of incremental cost incurred by the customer for services used solely by the customer. This excludes any augmentation cost attributable to the connection;

ICSN (Incremental Cost Shared Network) is the amount of incremental cost incurred by the customer for services which are not used solely by the customer. This may include any augmentation cost attributable to the connection; and

IR is the amount of incremental revenue in relation to the connection offer.

While the AER's Connection Charge Guideline leaves flexibility for the reclassification of connection services there was insufficient time available for AusNet Services to properly consider and consult its customers on this issue before lodging its Revised Proposal. As such, the potential reclassification of services is a matter which AusNet Services intends to address in the future, in consultation with its stakeholders.

The recalculation of forecast customer contributions contained in the Revised Proposal is therefore limited to revising the calculation of incremental cost (IC) and incremental revenue (IR) as a consequence of applying the AER's Connection Charge Guideline and updating the WACC and other relevant information such as energy consumption profiles and unit costs.

Incremental Cost

As discussed above, AusNet Services in its Initial Proposal, had made a material change to its historical incremental cost calculation through the inclusion of a marginal cost of reinforcement (MCR). The MCR is similar to the Incremental Cost Shared Network (ICSN) under the AER's Connection Charge Guideline which can include shared network augmentation costs. However, the Guideline requires businesses to apply thresholds under which customers cannot be charged augmentation costs (beyond extensions costs).

AusNet Services has determined an appropriate threshold which is consistent with the principles in Clause 5A.E.1 of the NER which states that a retail customer cannot be charged a capital contribution for a basic connection service or the connection does not exceed the DNSP's threshold. AusNet Services has determined that the following thresholds are consistent with the NER and the Guideline and applied these in recalculating customer contributions:

- 25 kVA on single wire earth return lines; and
- 100 ampere maximum capacity on 3 phase low voltage supply.

AusNet Services has assumed that the above threshold levels would operate for the 2016-20 regulatory period (although it reserves the right to propose an alternate threshold to the AER as part of any future Connection Policy).

Based on an analysis of AusNet Services' existing customer base, only 0.0002% of customers in the low-density housing category have a maximum demand of >25kW (a proxy for 25kVa). As such, the assumption has been made that all new connecting customers in this category will be below the threshold (e.g. all new customers connecting to a SWER line would be below 25kVA). The Revised Proposal has therefore removed the impact of the MCR for low density housing connections from forecast contributions.

In addition to this, a number of other adjustments to the assumptions underpinning the forecast of customer contributions have been applied relative to those adopted in the Initial Proposal. These include:

- reducing opex to zero, to accord with the requirements of Chapter 5A and the AER's Guideline that operational and maintenance costs should have no net impact on the capital contribution payable by the connection applicant;
- updating modelling to reflect the Revised Proposal WACC;
- refining the MCR calculation to:
  - reflect more detailed information on the diversity factor that is likely to be applied to customers under the proposed MCR approach;
  - reflect more detailed information on the levels of demand different types of customers are likely to place on the network in the future; and
  - correct outdated unit costs of reinforcing AusNet Services' network.

Incremental revenue

AusNet Services has revised its forecast incremental revenue related to connections capex. This is driven by the inclusion of:

- Setting the X-factor to 0 in the contribution model to reflect the AER's Connection Charge Guideline;
- Updated modelling to reflect the Revised Proposal WACC; and
- Updated energy consumption profiles for typical customers to reflect more recent empirical information regarding customer consumption behaviour. This reduces the volumes assumed to be consumed by different customer classes over the current regulatory control period, which reduces Incremental Revenue.

The overall impact of the above is that forecast contributions are lower than the Initial Proposal.

3.6.3 Revised Proposal

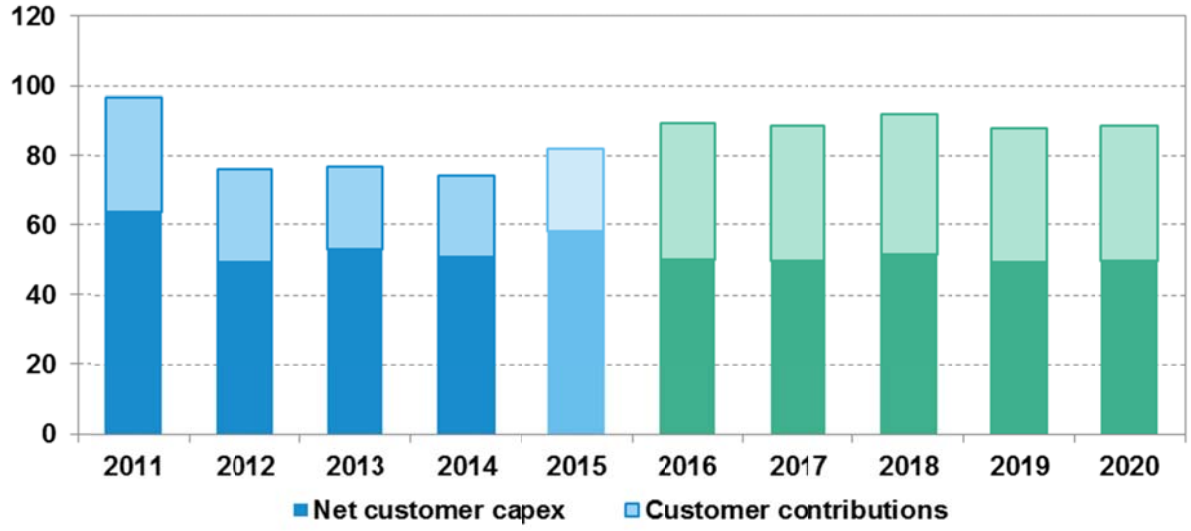
Forecast customer connection capex

AusNet Services is forecasting customer connections direct capex of $412.2 million[59] (2015, real) for 2016-2020 which has been revised to reflect the updated forecast for the number of customer connections. Associated contributions are forecast to be $196.4 million due to changes in forecast incremental cost and incremental revenue. AusNet Services' revised gross and net customer

[59] Excludes capitalised overheads and adjustment for labour escalation.

connection capex is shown in the figure below. The forecast gross connection capex is 10% higher than the current period (on a real $2015 basis) due to forecast growth in customer numbers.

Figure 3.3: Gross and net customer connections, actual and forecast ($m, real 2015)



Source: *AusNet Services*

Notes: *Includes overheads, excludes government contributions. Figures for 2015 are estimates.*

The Revised Proposal advances the NEO because:

- it is aligned with the new national customer connections framework; and
- it recovers more cost from the causer, keeping costs to broader consumers lower, to the extent possible, in the longer term.

3.7 Non-network

3.7.1 Preliminary Decision

The AER accepted AusNet Services' non-network forecast. The AER considered that the forecast was a reasonable estimate of the efficient costs a prudent DNSP would require. The AER stated:[60]

> *"We are satisfied that the reduction in ICT capex, and the forecast expenditure for other minor categories of non-network capex, reflect the high level drivers of expenditure in these categories and therefore reasonably reflect efficient costs. For example, the decline in ICT capex reflects that AusNet Services has recently completed a number of significant ICT investments and is approaching a point in its ICT investment profile which requires less capital investment. The Consumer Challenge Panel submitted that AusNet Services' pattern of reducing ICT expenditure should be followed by other Victorian DNSPs."*

3.7.2 Response to Preliminary Decision

AusNet Services accepts the Preliminary Decision with respect to its non-network capex forecast. However, it is necessary for AusNet Services to submit a forecast that incorporates additional costs attributable to rule changes resulting from the Power of Choice reforms.

60 AER, *AusNet Services Preliminary Decision*, Attachment 6 – Capital expenditure, October 2015, p. 90.

AusNet Services' Revised Proposal repeats and relies upon the Initial Proposal to explain and substantiate that portion of the non-network capex forecast which is unchanged[61].

The costs of implementing and complying with the Power of Choice reforms were not included in AusNet Services' non-network capex in the Initial Proposal. These revisions are now necessary because:

- New information has come to light regarding the certainty and cost impact of a number of the Power of Choice reforms; and
- The AER rejected AusNet Services' proposed Power of Choice nominated cost pass through events, limiting AusNet Services' opportunity to recover the cost of these reforms during the regulatory period.

Since the Initial Proposal was submitted, new information has become available which provides increased certainty around the expected cost impacts of the Power of Choice reforms. This information includes the AEMC's publication of:

- Rules amending the NER and the National Energy Retail Rules on 26 November 2015 to introduce a competitive framework for metering services from 1 December 2017;[62]
- Multiple Trading Relationships (MTR) draft determination on 19 November 2015, in which the AEMC proposes to not make a draft rule in response to the MTR rule change request;
- Meter Replacement Processes draft determination on 17 December 2015, which provides a draft rule setting out the arrangements for meter churn; and
- *National Electricity Amendment (Embedded Networks) Rule 2015 No 15* on 17 December 2015, which creates the new role of embedded network manager to perform the market interface functions that link embedded network customers to the NEM.

These developments provide increased clarity about the nature and scope of the ICT system changes that will be required to comply with the Power of Choice reforms. AusNet Services has developed an addendum to its ICT Strategy and associated non-network capex forecast to reflect this new information (refer to Revised Proposal Supporting Document: Power of Choice Program).

The Power of Choice reforms impose significant change on AusNet Services' current capabilities, particularly as a result of the introduction of metering contestability and the related shared market protocol requirements. Under a contestable framework, the installation, servicing and reading of small business and residential customer meters will no longer be an exclusive role of the distributor. This will become the responsibility of a new market role: the Metering Coordinator (MC).

The key systems that are expected to be impacted include AusNet Services':

- Networking billing, to manage external meter data for billing purposes;
- Meter data management (MDM), to enable supply and management of contestable meter data;
- Customer information system (CIS), to manage the new market roles and meter churn process; and
- Enterprise application integration (EAI), to enable integration to cater for new transactions and processes.

The addendum to the ICT strategy facilitates the updates of ICT systems necessary to achieve compliance, and represents a prudent and efficient response to achieving compliance with the Power of Choice rule changes.

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61 AusNet Services, *Initial Proposal - Chapter 7, Section 7.4.6 Information Technology*, 30 April 2015, and *Initial Proposal Appendix 7E – ICT Strategy.*

62 *National Electricity Amendment (Expanding competition in metering and related services) Rule 2015 No 12*; *National Energy Retail Amendment (Expanding competition in metering and related services) Rule 2015 No 1.*

While some uncertainty remains around key aspects of the implementation of the Power of Choice reforms – including the Victorian Government's position on the introduction of a contestable metering framework in Victoria – AusNet Services considers that, based on the information available at the time of this Proposal, its revised non-network capex forecast represents a reasonable estimate of the efficient costs it will incur to comply with Power of Choice. In particular, the forecast costs reflect the obligations that are currently due to apply in the current period in regards to metering contestability, whereby the current Victorian derogation from the NER Rules will expire on 1 December 2017. While the Victorian Government may choose to extend some form of derogation, it is prudent that the capital expenditure allowance for the current period be based on the regulatory arrangements as they are presently written.

The additional component of AusNet Services' forecast non-network capex is efficient because it includes only the costs of those reforms which are sufficiently certain in nature and scope to form a reasonable cost estimate. For some changes that will occur during the current period but which are subject to a high degree of uncertainty as to their scope – such as those resulting from the AER's Distribution Ring Fencing Guideline – AusNet Services has chosen not to include an estimate of these costs in its forecast. Rather, AusNet Services will seek to manage these costs using the cost pass through arrangements. This approach aligns with AusNet Services' commitment to preparing expenditure forecasts which reflect only its prudent and efficient costs, thereby ensuring it provides electricity services in a way that promotes investment in its network and is in the long term interest of consumers.

To determine its revised non-network capex forecast, AusNet Services has:

- Identified which reforms are sufficiently certain to enable reasonable cost estimates to be prepared, based on publicly available information, consultation carried out by the AEMC and interactions with other industry participants;
- Developed bottom-up forecasts for each reform identified above, based on the most likely implementation scenario; and
- Identified synergies between the various reforms, given the common systems that are expected to be impacted (e.g. meter data management, billing and customer interface systems), as well as between the components of the existing ICT Strategy and initial forecast ICT capex, to determine the extent to which top-down savings may be achieved in the delivery of the program.

This process resulted in the reforms set out in the table below being included in the revised forecast. This table summarises the regulatory changes associated with each reform, and identifies the ICT systems and business functions that will be impacted by these changes.

Table 3.12: Power of Choice reforms included in revised non network capex forecast

Reform	Summary of regulatory changes	ICT system and business functions impacted
Metering contestability	This reform will transform the current regulated metering business model, introducing competition for residential and small business customer metering. This will be achieved by allowing retailers to compete in the metering business through the new market role of Metering Coordinator (MC). In particular, through the MC, retailers will be allowed to replace the distributor's existing meters with their own smart meter, and will ensure that smart meters are rolled out to all new connections. Distributors will progressively transform from providers to consumers of meter service and data, as those services and data as provided by external MCs. To support the new model, distributors will need to make substantial changes to their processes and systems to, among other things, be able to: • Manage external meter data for billing purposes; • Manage the new market roles and third-party meters; • Coordinate with external parties for field work on contestable service provisions;	• Meter Data Management • Customer Services • Regulatory Compliance • Network Billing • Meter and Connection Point Data Management

Reform	Summary of regulatory changes	ICT system and business functions impacted
	• Recognise external meters involved in outages and incidents; and • Maintain a view of the customer incorporating the new tariffs and bill determinants.	
Cost reflective pricing	This reform requires network charges to be reflective of the efficient costs of providing network services, to incentivise customers to reduce their demand in peak times, thus reducing or deferring the need for network augmentation investments. Changes are required to existing systems to ensure they are able to capture and produce the necessary data to determine cost reflective prices. ***[On 21 December 2015, the Victorian Government advised AusNet Services that cost reflective pricing arrangements will be implemented in Victoria through an opt-in approach. Given the timing of this advice, the opex and capex forecasts set out in this Revised Proposal do not reflect Victorian Policy. The Revised Proposal forecast for cost reflective pricing is based on universal application or an opt-out approach, in line with the NER pricing principles that would apply in the absence of applicable obligations contained in another regulatory instrument.*** ***AusNet Services will advise the AER of the impact on its expenditure forecasts, if any, of the Victorian Government's position in a submission to the price review.]***	• Metering Business • Meter Data Management • Customer Services • Regulation • Network Billing
Embedded networks	This reform empowers embedded network customers to participate in the electricity market by allowing them to choose the products, services and suppliers of retail electricity services that suit them best by reducing the barriers to the end customers in the Embedded Network. Changes are required to enhance current systems in order to support the new Embedded Networks Manager role, service provisions within embedded networks and new transactions with embedded networks.	• Metering Business • Meter Data Management • Customer Services • Regulatory Compliance • Meter and Connection Point Data Management
Meter churn process	This reform defines the requirements that the financially responsible Market Participant must consider in the management of Meter Churn resulting from an alteration to a metering installation. To comply with this requirement, changes are require to enhance current systems to calculate and process exit fees, manage data updates on meter churn and to enable coordination with external parties for meter replacement.	• Metering Business • Meter Data Management • Network Billing • Meter and Connection Point Data Management
Shared market protocol and B2B changes	This reform introduces a regime for the MC to provide smart meter services to the retailer and third parties. The services will be generally commercially sourced but the AEMC will define minimum service specification services (mandatory no-cost) to be supported by a new Shared Market Protocol (SMP) via B2B systems. To comply with this requirement, changes are required to enhance current systems to provide and receive meter data via the new services, validate service requests from and initiate requests to external parties, enable the use of external services to provide business information and achieve real-time performance.	• Metering Business • Meter Data Management • Network Billing • Regulatory Compliance • Meter and Connection Point Data Management
Demand response mechanism	This reform establishes a new demand response mechanism (DRM) that would enable participating customers to offer a demand response (DR) for which they would be paid at NEM spot prices. Demand Response Aggregators (DRA) will coordinate customers to reduce their load compared to a projected or "baseline" consumption, and be paid by the Australian Energy Market Operator (AEMO) for the reduction. The DRA may then be able to reward customers based on an agreed scheme. To comply with this requirement, changes are required to enhance current systems to provide DRAs with raw meter interval data on a near-real-time basis.	• Metering Business • Meter Data Management • Regulatory Compliance • Meter and Connection Point Data Management

Further information on the impacts of these changes on ICT systems and on forecast capex is provided in the capex Supporting Document: Power of Choice Program. The opex impacts of Power of Choice are discussed in Chapter 4: Operating and Maintenance Expenditure.

AusNet Services' Initial Proposal included a Power of Choice nominated cost pass through event. The Power of Choice event was proposed because AusNet Services considered that, in light of the uncertainty around the Power of Choice reforms, it would be better able to identify and recover its prudent and efficient costs by using the cost pass through arrangements, rather than ex ante expenditure forecasts. AusNet Services considered this approach was in the long-term interests of customers.

However, the Preliminary Decision rejected the proposed Power of Choice cost pass through event. The AER considered that the prescribed regulatory change and/or service standard events set out in the NER would cover the cost impacts of the Power of Choice rule changes and provided appropriate protection against the risks presented by these rule changes. In response to AusNet Services' concern that some of the additional costs caused by these individual rule changes may not satisfy the pass through materiality threshold, the AER considered that a nominated pass through event was not warranted simply because the materiality threshold might not be met.

Because of the separate, but interconnected nature of the Power of Choice reforms and the associated costs for AusNet Services (which will be between $2-20 million per reform), the Preliminary Decision exposes AusNet Services to a significant risk in the current regulatory period that it will not be able to recover the efficient costs it incurs in providing direct control network services. These risks, and AusNet Services' response to the AER's position on this matter, are discussed further in Chapter 6: Cost Pass Through.

In response to the Preliminary Decision, AusNet Services seeks to include the prudent and efficient expenditure it expects to incur to implement the Power of Choice reforms in its revised non network capex forecast.

3.7.3 Revised Proposal

Based on the information set out above, AusNet Services has identified the following non-network capex requirements for the current regulatory period:

Table 3.13: Forecast non network expenditure ($m, real 2015)

	2016	2017	2018	2019	2020	Total
Preliminary Decision	37.4	41.5	41.1	48.0	40.6	**208.6**
Power of Choice	13.5	31.7	2.1	-	-	**47.3**
Total	**51.0**	**74.1**	**43.1**	**47.7**	**40.4**	**256.3**

Source: AusNet Services

Note: Excludes overheads and final adjustment for revised labour price escalation. Figures may not reconcile to total due to top down escalation adjustments.

3.8 Capitalised Overheads

3.8.1 Preliminary Decision

The AER rejected AusNet Services' proposal of $172.8 million for capitalised overheads (around $33.5 million per year) and replaced it with an alternative forecast of $167.7 million (a 3.0% cut).[63]

[63] The capitalised overheads in the AER's Preliminary Decision model do not match the text of the Preliminary Decision (Attachment 6). The AER has included $168.5 million in the text and $167.7 million in its modelling. However, AusNet Services has identified computational errors in the AER's model. Correcting these errors, the capitalised overhead allowance that is consistent with the AER's preferred methodology and the Preliminary Decision on direct capex is $168.2 million.

While AusNet Services' Initial Proposal continued the current treatment of capitalised overheads as a fixed pool, the AER has stated that:[64]

> *"We consider that reductions in AusNet Services' forecast expenditure should see some reduction in the size of its total overheads."*

The AER's alternative forecast of capitalised overheads presumes that the pool of capitalised overheads is made up of a combination of costs that are fixed in the short term, and costs that vary with the size of the direct capex (excluding non-network: other capex) program[65].

The split between fixed and variable costs used in the Preliminary Decision is 75:25 based on data from Energex. The AER has indicated it would consider revising this split if AusNet Services presented data to demonstrate an alternative split was appropriate.

3.8.2 Response to Preliminary Decision

AusNet Services accepts the AER's alternative approach to determining capitalised overheads. Using this approach, AusNet Services has updated the variable component of the allowance for capitalised overheads for the Revised Proposal of direct capex (excluding non-network: other capex).

While the historical data for AusNet Services' network suggest that capitalised overheads are fixed, it is expected that the AER's alternative forecast will not result in a materially different allowance.

It is also expected that given the AER's preferred approach to setting the allowance for capitalised overheads includes a variable component, the AER will include an allowance for capitalised overheads (determined on a consistent basis) in any subsequent allowances for contingent projects or pass through events that are approved for the 2016-20 regulatory period.

Evidence of efficient historical capitalised overheads

The Preliminary Decision suggests that AusNet Services could provide evidence of the split between fixed and variable costs to use in place of the Energex data.

The historical evidence suggests that AusNet Services' capitalised overheads have been fixed (or more accurately, that the small degree of volatility that exists is not related to the value of the direct capex program). Although there were large increases in capital expenditure over the last 6 years, there has been little increase in capitalised overheads on AusNet Services' electricity distribution network. This was explained in the Initial Proposal:[66]

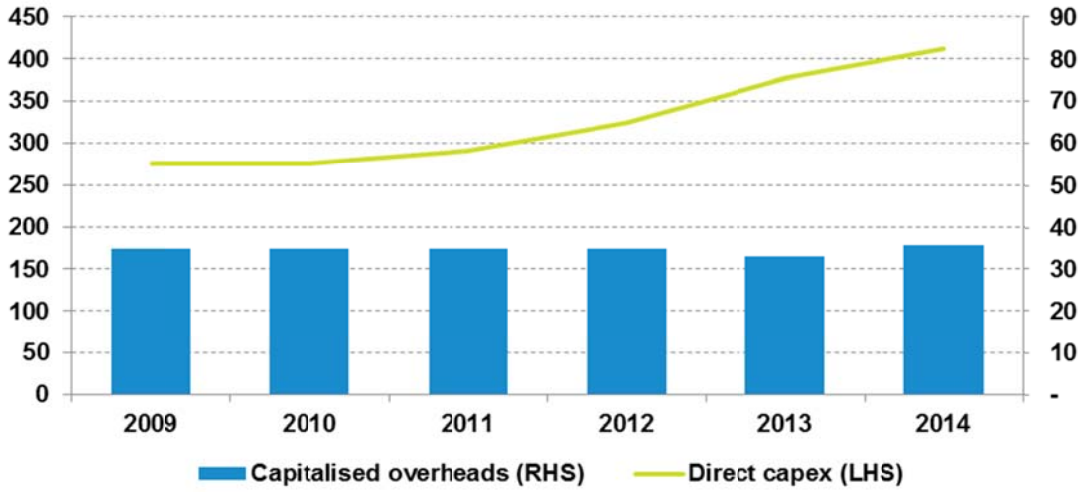
> *"As shown in the Figure below, AusNet Services' capitalised overheads have been relatively flat. Capitalised overheads did not grow in line with the large increases in total direct capex in the [2011-15] period. Hence it is reasonable to assume that current levels of expenditure on capitalised overheads provide the best forecast of future overheads."*

64 AER, *AusNet Services Preliminary Decision*, Attachment 6 – Capital expenditure, October 2015, pp. 6-87.

65 This is consistent with AusNet Services' forecast, where no overheads were allocated to the 'Non-Network: Other' category.

66 AusNet Services, *Initial Proposal,* p.121

Figure 3.4: Capitalised overheads and direct capital expenditure – historical ($m, real 2015)



Source: AusNet Services

Note: Direct capex includes contractor overheads.

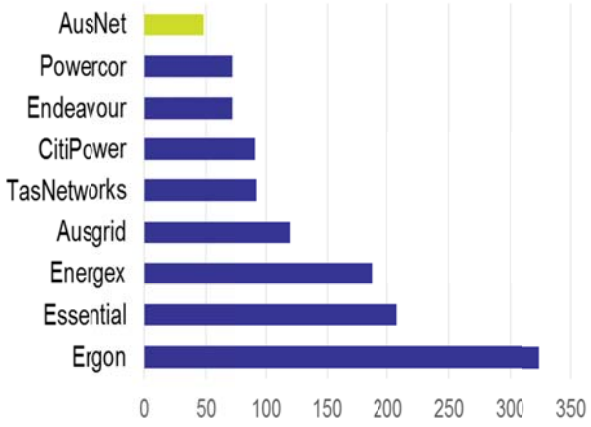
As set out in the Initial Proposal, AusNet Services has efficient levels of capitalised overheads (it is on the efficiency frontier):[67]

> *"AusNet Services leads the sector in the comparative efficiency of its capitalised overheads. The figure below [LHS] shows AusNet Services has low capitalised overheads compared to its peers, taking the total cost of corporate and network capitalised overheads per customer."*

AusNet Services' total overheads are also efficient. AusNet Services has had the third lowest total overheads per customer in the NEM at $103 per customer.[68]

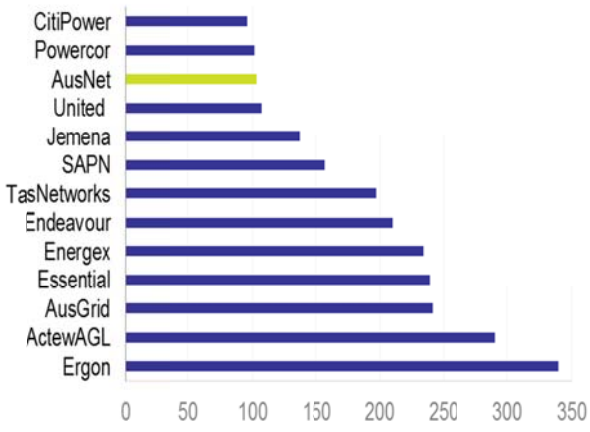
Figure 3.5: Overheads benchmarking

2009-14 average capitalised overheads per customer



Source: AER RIN data (2014 data not available for Ergon & Energex)
Note: ActewAGL, Jemena, SA Power and UED excluded due to data being unavailable / inconsistent.

2009-14 average total overheads cost per customer



Source AER RIN data (2014 data not available for Ergon and Energex)

67 AusNet Services, *Initial Proposal*, Chapter 7, p. 132.

68 AusNet Services, *Initial Proposal*, p. 135.

The evidence of AusNet Services' efficiency for capitalised overheads, supports the Initial Proposal that the AusNet Services' capitalised overhead pool is best forecast as fixed. It is reasonable to assume that for firms at the efficient frontier, there is a more limited ability to reduce the overhead pool.

Implications of AER's preferred forecasting approach for contingent projects and pass through events

The AER's approach will have implications for contingent projects and any pass through events that occur in the current regulatory period. While in the 2011-15 regulatory control period AusNet Services did not seek overhead costs in relation to pass through events because the overhead pool was treated as fixed, the switch in approach to setting the overheads allowance based on the value of direct capex means that an overheads allowance should be included whenever the allowance for the direct capex program is adjusted.

Under the AER's model, an additional $1 million in direct capex requires $27,300 of capitalised overheads. Consistent with the AER's approach, it is expected the AER will include allowances for the variable component of overheads for all contingent projects and pass through allowances it approves in the current regulatory period.

3.8.3 Revised Proposal

Table 3.14: Revised proposal – Capitalised Overheads ($m, 2015 real)

	2016	2017	2018	2019	2020	Total
Capitalised Overheads	34.0	35.7	34.7	34.7	34.8	**174.0**

Source: AusNet Services

3.9 Price Escalation

AusNet Services' Initial Proposal incorporated assumptions in relation to the nature of price escalation during the 2016-20 period. For labour, the forecast escalation rates were based on a combination of AusNet Services' commitments under its main Enterprise Bargaining Agreement and forecasts from economic consultants, CIE. For materials, the forecasts assumed prices moved in line with the Consumer Price Index (CPI).

3.9.1 Preliminary Decision

The Preliminary Decision applied a top down cut of $25.4 million attributable to differences in forecasts for labour escalation.

The AER rejected AusNet Services' forecast labour escalation rates and replaced them with alternative forecasts based on an average of two economic consultants, Deloitte Access Economics and BIS Shrapnel. Details of the labour price escalation decision were included in Attachment 7 – Operating Expenditure in the Preliminary Decision and summarised in Chapter 4 – Operating Expenditure of this Revised Proposal.

In order to determine the size of the adjustment to make to the capital expenditure allowance, the Preliminary Decision employed a top-down methodology. This was necessary, given the nature of the AER's alternative capital expenditure forecast was based on top-down techniques and did not include a program by program breakdown.

The first step in the AER's methodology was to determine the total impact of applying the alternative labour escalation forecasts to AusNet Services' proposed capex program.

The second step was to make a pro-rata adjustment to account for the fact that the Preliminary Decision approved a smaller net capex program than was proposed in AusNet Services' Initial Proposal. The cuts were allocated across capex categories on a proportional basis.

The AER accepted AusNet Services' materials escalation assumptions (CPI).

3.9.2 Response to Preliminary Decision

Chapter 4 (Section 4.3.2) of this Revised Proposal details AusNet Services' updated forecasts of labour escalation and response to the Preliminary Decision.

The Revised Proposal forecasts of labour escalation:

- include updated forecasts from CIE based on the latest available economic data;
- are based on an average of 3 forecasts;
- are lower than AusNet Services' initial forecasts.

AusNet Services has applied the revised labour forecasts to its revised capital expenditure proposal. This escalation is based on the average breakdown of direct capital expenditure (cost shares for labour, contract and materials) taken from the Initial Proposal. It is necessary to apply an assumption because top-down techniques have been applied in relation to some components of the capital expenditure forecast.

3.9.3 Revised Proposal

AusNet Services has applied a top-down adjustment for labour escalation to its capital expenditure forecast as shown in the following table.

Table 3.15: Revised proposal – Top-down escalation adjustment ($m, 2015 real)

	2016	2017	2018	2019	2020	Total
Escalation adjustment	-2.8	-4.9	-5.8	-7.2	-8.3	**-29.1**

Source: AusNet Services

3.10 Total Capital Expenditure Requirement

The revised proposal forecast of required capital expenditure is consistent with AusNet Services' Cost Allocation Method[69].

Table 3.16: Revised proposal – Total Capital Expenditure ($m, 2015 real)

	2016	2017	2018	2019	2020	Total
Augmentation	70.1	81.1	61.6	57.0	59.1	328.8
Connections	81.7	81.6	85.0	81.6	82.4	412.2
Replacement	153.1	161.3	162.2	167.0	160.0	803.6
Non-network	51.0	74.1	43.1	47.7	40.4	256.3
Capitalised corporate overheads	34.0	35.7	34.7	34.7	34.8	174.0
Escalation adjustment	-2.8	-4.9	-5.8	-7.2	-8.3	-29.1
Gross Capex	**387.0**	**428.8**	**380.8**	**380.8**	**368.3**	**1,945.7**
Contributions	*39.3*	*39.0*	*40.5*	*38.7*	*38.9*	***196.4***
Net Capex	**347.7**	**389.9**	**340.2**	**342.2**	**329.4**	**1,749.3**

Source: AusNet Services

Notes: Net Capex excludes asset disposals

69 NER, cl 6.5.7(b)(2).

AusNet Electricity Services Pty Ltd

Electricity Distribution Price Review 2016-20

Revised Regulatory Proposal

Chapter 4: Operating and Maintenance Expenditure

Submitted: 6 January 2016

missionzero

Chapter 4: Operating and Maintenance Expenditure

This chapter sets out AusNet Services' response to the Australian Energy Regulator's (AER's) Preliminary Decision with respect to Standard Control Services (SCS) operating and maintenance expenditure (opex) as set out in Attachment 7 of the Preliminary Decision. AusNet Services' initial positions were set out in Chapter 8 of the Regulatory Proposal.

In the event of inconsistency between information contained in this chapter and AusNet Services' Initial Regulatory Proposal, the information contained in this chapter prevails.

4.1 Introduction

The AER's Preliminary Decision approved $1,104.3 million of opex (excluding DMIA) for SCS for the current (2016-20) regulatory control period,[1] a reduction of 11.4% on AusNet Services' forecast SCS opex of $1,246.4 million. The key drivers of the $142.1 million reduction were:

- The rejection of AusNet Services' proposal to incorporate $89.4 million of forecast opex relating to information and communications technology (ICT) distribution systems upgraded during the Advanced Metering Infrastructure (AMI) roll-out (AMI opex) into SCS opex, which the AER instead allocated to alternative control services (ACS); and
- The application of lower labour cost escalation and different labour / non-labour weights (resulting in a $32.5 million cut).

AusNet Services' Initial Proposal set out a conservative increase in opex for the current regulatory control period. While AusNet Services' view of its opex requirements is largely unchanged, external developments since the Initial Proposal, including regulatory changes, are expected to drive increases in expenditure during the current period.

In summary, AusNet Services:

- Accepts the AER's base year opex, with the exception of adjustments for self-insurance and debt raising costs;
- Accepts the AER's methodology for determining the rate of change, but does not accept the AER's real price change and maximum demand forecast inputs;
- Accepts the AER's approach to forecasting demand management opex and GSL costs;
- Does not accept the AER's approach to forecasting self-insurance costs;
- Does not accept the AER's allocation of AMI opex to ACS; and
- As a result of new information, forecasts a number of step changes and a revised output growth forecast which reflects updated customer numbers and maximum demand forecasts.

Having regard to the above changes, AusNet Services forecasts SCS opex of $1,269.6 million for the current regulatory period.

In developing its revised SCS opex forecast, AusNet Services has again been guided by the objectives that underpinned the opex forecast set out in its Initial Proposal.[2] That forecast sought to constrain growth in the distribution component of customer bills over the current regulatory control period to deliver electricity services at the least cost without compromising network safety or

1 The current regulatory control period refers to the period that commenced 1 January 2016.

2 AusNet Services, *Regulatory Proposal 2016-20*, April 2015, p. 170.

reliability. AusNet Services' revised opex forecast seeks to achieve the same objective in a way that promotes the achievement of the NEO to the greatest extent.

As a result of new information obtained since the lodgement of the Initial Proposal, a number of cost increases have been identified due to changes in regulatory obligations applying to the current period. These regulatory changes are a key driver of the increase in AusNet Services' revised opex forecast from its Initial Proposal.

Consistent with customer feedback, the Initial Proposal forecast included expenditure to further develop AusNet Services' demand management capabilities in the face of uncertainty over future technologies, energy demand and consumption patterns. In light of the opex approved by the AER, AusNet Services remains committed to enhancing these capabilities during the current period, but considers that an increased Demand Management Innovation Allowance (DMIA) is integral to driving further innovation during that time (discussed in Chapter 5: Incentives).

The initial forecast also included rising labour costs, the cost impacts of increasing customer numbers and network size, as well as growth in insurance and self-insurance costs.[3] AusNet Services is again proposing that these factors will drive cost increases during the current period. While it has accepted the AER's approach to forecasting insurance costs, it has largely maintained its approach to forecasting labour costs, output growth and self-insurance.

The remainder of this chapter is structured as follows:

- Section 4.2 sets out proposed base year expenditure;
- Section 4.3 outlines the forecast rate of change;
- Section 4.4 details forecast step changes;
- Section 4.5 discusses forecast self-insurance costs;
- Section 4.6 sets out forecast GSL payment costs;
- Section 4.7 deals with forecast AMI costs; and
- Section 4.8 sets out the total opex forecast.

The information set out in this chapter accords with all the applicable requirements of the National Electricity Rules (NER).

4.2 Base Year

AusNet Services accepts the AER's base year opex with the exception of:

- The inclusion of self-insurance costs in base year opex;
- The exclusion of debt raising costs from base year opex; and
- The inflation approach used to convert base year opex to 2015 dollars.

4.2.1 Preliminary Decision

The Preliminary Decision accepted AusNet Services' actual reported 2014 expenditure as the base for the opex forecast for the current period. In making this decision, the AER considered that "benchmarking indicates AusNet Services is operating relatively efficiently when compared to other service providers in the NEM so we consider this is a reasonable starting point for determining our opex forecast."[4]

[3] Insurance costs refer to insurance premiums, whereas self-insurance costs refers to the costs of managing risk through a self-insurance provision.

[4] AER, *AusNet Services Preliminary Decision*, Attachment 7 – Operating expenditure, October 2015, p. 21.

The AER accepted the following adjustments to actual 2014 opex made by AusNet Services:

- Removed movement in provisions reported as opex in 2014;
- Removed opex incurred in 2014 under the demand management innovation allowance (DMIA);
- Removed GSL payments made in 2014; and
- Added the forecast increase in opex between 2014 and 2015.

The AER made the following other adjustments:

- Removed debt raising costs, which AusNet Services included in its proposed base year;
- Included the following costs:
  - Self-insurance, insurance and Bairnsdale Power Station costs,[5] which AusNet Services forecast on a category-specific basis; and
  - Non-recurrent Victorian Bushfire Royal Commission and superannuation defined benefit schemes opex, which AusNet Services removed from its proposed base year.
- Converted base year opex to 2015 dollars using December Quarter CPI on an unlagged basis, rather than the September Quarter, one-year lagged basis used by AusNet Services.

4.2.2 Response to Preliminary Decision

AusNet Services accepts the AER's calculation of its base year opex, with the following exceptions:

- The removal of debt raising costs;
- The inclusion of self-insurance costs; and
- The inflation approach used to convert base year opex to 2015 dollars.

While AusNet Services accepts the inclusion of insurance costs in the base year, ongoing issues around insurance forecasting remain which are discussed in this section.

Debt raising costs, insurance and the inflation approach are discussed below, while self-insurance is discussed in section 4.5.

Debt raising costs

The AER rejected the inclusion of debt raising costs in the base year on the grounds that:[6]

- AusNet Services did not demonstrate that the AER's benchmark approach is inappropriate and did not demonstrate any methodological problems with that approach;
- The proposed costs are around triple the benchmark costs and are therefore inefficient or do not capture the same scope of costs as the benchmark approach; and
- The proposed costs lack transparency compared to the benchmark approach and it is not clear how they have been allocated across different networks or service classification.

AusNet Services does not accept the Preliminary Decision and considers the reasons provided by the AER are not sufficient to support the rejection of AusNet Services' proposed debt raising costs. AusNet Services responds to each of the AER's reasons in the following sections. For the reasons set out in these sections, AusNet Services is forecasting debt raising costs on a revealed cost basis.

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5 These costs were previously recovered through the annual tariff setting process and not through the price cap.

6 AER, *AusNet Services Preliminary Decision*, Attachment 3 – Rate of return, October 2015, pp. 620-622.

Benchmark vs. revealed cost approach

The AER's benchmark approach is based on analysis conducted by The Allen Consulting Group in 2004 of the transaction costs incurred in raising debt (and equity) finance for regulated utilities.[7] This approach estimates debt raising costs in terms of basis points per annum, which is applied to the debt portion of the RAB to determine an allowance for debt raising costs. The AER updated the approach to reflect updated market data obtained from a 2013 PwC report.[8]

By adopting a benchmark approach where audited actual expenditure is available, the AER is not treating actual 2014 opex consistently at a total opex level. Further, the AER is contradicting its Expenditure Forecasting Assessment Guideline position that the most appropriate approach to forecasting opex is to use a single year, revealed cost approach. In respect of this approach, the AER has stated that:[9]

> *"We make our assessment about the total forecast opex amount and not about particular categories or projects in the opex forecast. Within total opex we would expect to see some variation in the composition of expenditure from year to year. That is, expenditure for some categories will be higher than usual in a given year while other categories will be lower than usual. However, these variations tend to offset each other so that total opex is relatively stable. Using a category specific forecasting method may produce better forecasts of expenditure for those categories but we do not consider it produces a better forecast of total opex."*

The AER's approach is, therefore, inconsistent with its preferred approach to forecasting opex using a revealed cost approach based on total opex. It is not clear why, in this instance, the AER has taken a different (and inconsistent) approach to forecasting different opex categories. That is, why it forecasts debt raising costs using a theoretical benchmark approach, but forecasts other categories using a single year, revealed (actual) cost approach.

While AusNet Services proposes to forecast self-insurance and GSL payments using a category-specific approach, this is appropriate because:

- Self-insurance costs have the potential to be highly volatile and lumpy and are therefore best forecast based on an actuarial assessment (discussed in section 4.5); and
- The GSL payments forecast reflects new scheme arrangements (e.g. payment amounts) that will apply from 2016 and are thus not reflected in AusNet Services' base year opex (discussed in section 4.6).

Neither of these reasons applies to debt raising costs. In fact, as demonstrated in its Initial Proposal,[10] AusNet Services' debt raising costs are broadly recurrent from year to year, which is prima facie evidence that base year costs reasonably reflect the costs that will be incurred during the current period. These attributes make a revealed cost approach the most appropriate forecasting methodology.

AusNet Services does not consider that the efficiency of its debt raising costs is dependent on whether it identified any methodological problems with the AER's benchmarking approach or matters raised in the AER's determinations for other networks. The AER is required to consider AusNet Services' total opex forecast in accordance with NER 6.5.6 and accept that proposal if it is satisfied that it reasonably reflects the opex criteria. This is consistent with the propose-respond model codified in the NER.

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7 The Allen Consulting Group, *Debt and equity raising transaction costs: Final report*, December 2004.

8 PricewaterhouseCoopers, *Energy Networks Association: Debt financing costs*, June 2013.

9 AER, *AusNet Services Preliminary Decision*, Attachment 7 – Operating expenditure, October 2015, pp. 41-42.

10 AusNet Services, *Regulatory Proposal 2016-20*, April 2015, p. 201.

Efficiency and scope of debt raising costs

AusNet Services faced a strong incentive to minimise debt raising costs in the 2011-15 period. As these costs are set based on a fixed benchmark and excluded from the EBSS, AusNet Services bears 100% of the cost of any overspend. This is because the overspend is neither included in the allowance set by the AER on an ex ante basis, nor is it expected to be taken into account in re-basing opex for the subsequent regulatory period.

Therefore there is no basis for the AER's conclusion that AusNet Services' debt raising costs may be inefficient. It would be inconsistent to conclude that AusNet Services' base year opex is efficient, but conclude that its debt raising costs are inefficient, despite the latter being subject to a stronger power of efficiency incentive.

AusNet Services' Initial Proposal set out the reasons why its actual debt raising costs are efficient, and why a forecast based on these costs would contribute to a total opex forecast that reasonably reflects the opex criteria. Those reasons are repeated and relied on in this Revised Proposal.

The AER has also expressed a concern that the scope of the debt raising costs reported by AusNet Services may be inconsistent with the scope of the costs provided for in its benchmark allowance, and that this may be a reason why AusNet Services' actual costs exceed the benchmark.

AusNet Services has mapped the categories of its actual debt raising costs against the categories identified by the AER. The following table shows the results of this mapping:

Table 4.1: Mapping of actual debt raising costs to AER benchmark allowance categories ($m, real 2015)

Cost category	2014 actual costs	2016 benchmark allowance	
		Basis points per annum	$
Arrangement fee	2.48	7.14	1.47
Commitment fee	0.89	0.00	0
Other fees	0.23	1.24	0.25
Total	**3.59**	**8.38**	**1.72**

Source: AusNet Services analysis; 2016 benchmark allowance as per AER Preliminary Decision

Based on the analysis above, it is clear that the AER's approach significantly understates AusNet Services' actual arrangement fee costs. Given the strong incentive faced by AusNet Services to minimise its debt raising costs under the benchmark approach it is evident that the AER's benchmark allowance for the arrangement fee is insufficient.

AusNet Services' actuals include a commitment fee of approximately $0.9 million per annum which is not provided for as part of the AER's benchmark. The commitment fee covers maintaining loan facilities to meet credit rating agency liquidity requirements.

In its draft decision for TransGrid's 2014-18 determination, the AER questioned whether a prudent operator required additional expenditure to maintain liquidity, given not all networks proposed an explicit opex allowance for these purposes.[11] It is evident that AusNet Services incurs significant costs for these purposes, despite no regulatory allowance being provided, demonstrating that this is a real cost incurred by a prudent operator.

[11] AER, *Transgrid transmission determination draft decision* – Attachment 3: Rate of return, November 2014, pp. 327-329.

The allocation and transparency of AusNet Services' debt raising costs

The AER has expressed concerns regarding:

- The allocation of debt raising costs across different networks or service classification; and
- Inconsistency in AusNet Services' Regulatory Accounts, where debt raising costs are listed as zero in the Operating sheet, which prevented it from ascertaining what AusNet Services' proposed debt raising costs of $3.6 million effectively represents.

AusNet Services' debt raising costs are captured in the Finance Charges expense line in its audited Regulatory Accounts. Because the Regulatory Accounts are derived from the Audited Statutory Accounts, the naming conventions used across both sets of accounts must be consistent. Finance Charges in the Audited Statutory Accounts comprise the company's financing costs, which include the repayments on its debt finance and the transaction costs of obtaining that finance (i.e. debt raising costs). An adjustment is applied to the Finance Charges cost reported in the Audited Statutory Accounts to determine the Standard Control Services (SCS) portion, which solely reflects the debt raising costs of the services provided by the regulated electricity distribution business. Similarly, a portion is applied to metering ACS.

AusNet Services' debt raising costs are allocated in accordance with its approved Cost Allocation Methodology (CAM), to ensure each network and service classification is allocated an appropriate amount of cost. The debt raising costs allocated to SCS opex reflect the share of AusNet Services' assets that are used to provide SCS (39% in 2014).

The debt raising costs in the Operating Sheet of the Regulatory Accounts are listed as $0 because only costs considered to be strictly relating to the operations of the business, and not costs associated with financing the business, were reported in this template. This reporting protocol should not be taken to mean that AusNet Services does not incur any debt raising costs. To avoid confusion, AusNet Services will ensure that in future years it reports the costs that are captured in Finance Charges also as debt raising costs in the Operating Sheet.

Nonetheless, because AusNet Services' debt raising costs form part of its audited 2014 Regulatory Accounts, they are subject to the same level of scrutiny as all other opex categories that together comprise total opex. The Regulatory Accounts are audited by a suitably qualified auditor, which provides an independent, objective evaluation of AusNet Services' financial reports and its financial reporting processes. The consistency of AusNet Services' allocation of its opex, including debt raising costs, with the approved CAM is included in the scope of the audit process.

AusNet Services would welcome the opportunity to provide further information on the allocation and reporting of its debt raising costs to assist the AER.

Insurance

The AER rejected AusNet Services' category-specific forecast of insurance costs in the base year and stated its preference is to forecast opex based on the total insurance costs incurred in a single year.

AusNet Services accepts the AER's forecast of insurance as part of base year opex on the grounds that it is not materially different to AusNet Services' latest insurance forecast. However, AusNet Services maintains the position that, depending on the specific drivers and materiality of specific cost categories, a bottom-up forecasting approach may be required to determine a total opex forecast that meets the opex criteria.

AusNet Services' service area is exposed to a particularly high level of bushfire risk, as evidenced by recent bushfire activity in the region, including the catastrophic 2009 Black Saturday bushfires and two smaller bushfires in February 2014. The evidence indicates that the impact of bushfires in

terms of lives lost and buildings destroyed is significantly more pronounced in Victoria than in other Australian states and territories.[12]

The unique level of risk AusNet Services faces means its bushfire liability insurance premium costs, which account for the majority of its insurance costs, are likely to change at a rate that is not consistent with an industry wide, overall rate of change. For instance, between 2008-09 and 2014-15, Aon reports that AusNet Services' liability premium increased sixfold due to, among other things, significant costs from Black Saturday and increases to the overall policy limit.[13]

The AER's preferred approach is to base its opex forecast on the total amount of opex incurred in a single year, rather than forecast some opex categories on a category-specific basis. However, whether this approach determines the best possible forecast of total opex depends on the rate at which individual opex categories change over time, and the quantum of these categories.

For significant cost items that have unique drivers not accounted for in the overall rate of change, a category-specific forecast, where it differs materially from a single-year revealed cost forecast, is required to develop a forecast of total opex that meets the opex criteria.

Given the quantum of AusNet Services' insurance costs, an insurance forecast based on an insurance expert's views of AusNet Services' specific circumstances and general market factors may be required to develop the best forecast of total opex, where such a forecast differs materially from a single year revealed cost forecast.

Inflation approach

The Preliminary Decision converted base year opex to 2015 dollars, as required for PTRM inputs, using December Quarter CPI on an unlagged basis (i.e. using forecast 2015 inflation). This contrasts with the approach used by AusNet Services' Initial Proposal, which used September Quarter on a one-year lagged basis, in accordance with the CPI measure set out in the 2011-15 distribution determination.[14] It also contrasts with the Preliminary Decision EBSS calculation, which used June Quarter CPI on an unlagged basis, creating internal inconsistency across the various building blocks.

AusNet Services is proposing to again use September Quarter CPI on a lagged basis. This approach maintains continuity with the 2011-15 determination, ensures consistency with the inflation calculations used to determine the EBSS carryover amount, and aligns with other critical components of the revenue determination such as the indexation of the RAB, net capex and depreciation.

AusNet Services' reasons for consistent use of the September Quarter CPI on a lagged basis across the various building blocks are discussed further in Chapter 5: Incentives.

4.2.3 Revised proposal

AusNet Services' revised base year opex for the current regulatory period is $203.8 million. Base year opex accounts for 80.2% of the total opex forecast.

Table 4.2: Revised base year opex ($m, real 2015)

Actual 2014 opex (excl. debt raising costs)	197.1
Adjustments	6.6
Base year opex	**203.8**

Source: AusNet Services

12 AusNet Services, *Regulatory Proposal 2016-20*, April 2015, p. 197.

13 AusNet Services, *Regulatory Proposal 2016-20*, April 2015, pp. 197-198.

14 AER, *SPI Electricity Pty Ltd Distribution Determination,* September 2012, p. 11.

4.3 Rate of Change

AusNet Services does not accept the rate of change applied in the Preliminary Decision because it does not provide AusNet Services with a reasonable opportunity to recover at least the efficient costs of a prudent DNSP.

The Preliminary Decision understates the real price change increases AusNet Services expects to incur during the current regulatory period because it forecasts labour costs using:

- Labour escalators based on an average of Deloitte Access Economics (DAE) and BIS Shrapnel forecasts, instead of an average of DAE, BIS Shrapnel and the Centre for International Economics' (CIE) forecasts; and
- Labour and non-labour weights based on an outdated 'benchmark weighting', which differs markedly from the composition of AusNet Services' actual opex and is inconsistent with the AER's preference to using actual, revealed costs to forecast opex.

Accordingly, AusNet Services does not accept the real price change component of the Preliminary Decision rate of change.

The Preliminary Decision rate of change was consistent with AusNet Services' Initial Proposal with respect to:

- The assumption that non-labour costs will increase in line with CPI;
- The approach to forecasting output growth; and
- The application of a zero per cent productivity change forecast.

AusNet Services' Revised Proposal retains these features, subject to updated demand and customer number forecasts as inputs to the output growth calculation.

4.3.1 Preliminary Decision

The Preliminary Decision accepted AusNet Services' approach to forecasting opex growth which was based on the rate of change model applied by the AER in its recent decisions for other networks. This approach accounts for:

- Real price growth;
- Output growth; and
- Productivity change.

While the AER accepted AusNet Services' approach, it did not accept all of the inputs used to generate it.

Real price growth

The Preliminary Decision rejected AusNet Services' proposed internal and external labour escalators. Instead, the AER applied an escalator to the labour costs that it considered would increase at a different rate to CPI equal to the average of Electricity, Gas, Water and Waste Services (EGWWS) Wage Price Index (WPI) forecasts developed by both DAE and BIS Shrapnel.

AusNet Services' proposed internal labour escalators for 2016 were determined using the rates in AusNet Services' EBAs for the months of that year to which they will apply, combined with CIE's EGWWS WPI forecast for the balance of 2016. From 2017, CIE's EGWWS WPI forecast was applied to internal labour costs.

CIE's Construction WPI forecast was applied to external labour for the full duration of the current period.

CIE's forecasts were developed in December 2014, while DAE's and BIS Shrapnel's forecasts were developed in June 2015 and November 2014, respectively.

The AER did not accept AusNet Services' proposed labour escalators because it considered that:[15]

- Forecasting labour costs using an individual EBA forecast for some years and an industry average forecast for others would likely not produce an opex forecast consistent with the opex criteria because of different labour market conditions prevailing at the time the different agreements are struck;
- Using EBA outcomes to forecast labour costs would reduce the incentive to negotiate efficient wages, noting that DAE and VECUA raised similar concerns;
- The cost of contracted labour providing non-field services will increase at the same rate as CPI;
- An average of DAE and BIS Shrapnel's EGWWS WPI forecasts represented the best available forecast of directly employed and contracted field services labour cost increases, noting that CIE's forecast of EGWWS:
    - Was higher than BIS Shrapnel's, and that BIS Shrapnel have historically over-forecast WPI growth; and
    - Looked inconsistent with current labour market conditions based on the timing of the peak in forecast WPI growth in 2016.

The AER also rejected AusNet Services' proposed labour and non-labour weights of 93% (46% internal labour and 47% external labour) and 7%, respectively, which were based on AusNet Services' actual 2014 opex. The AER substituted 'benchmark' weights of 62% labour and 38% non-labour. In making this decision, the AER considered that the benchmark labour weight of 62%:[16]

- Reflected the labour directly employed by AusNet Services and labour employed by contractors to provide field services;
- Is consistent with the AER's approach to measuring productivity, which aims to measure productivity achieved by DNSPs rather than by contractors providing services that are not unique to electricity distribution;
- Was appropriate in light of Victorian DNSP and SA Power Networks (SAPN) benchmarking data on labour and contracted services opex, which demonstrated that the labour weighting should be somewhere between 43% and 83%, with the AER noting that "for those contracts that provide field services only the labour related expenses should be allocated to the labour weighting."[17]

The AER also considered that:[18]

> *"Using a DNSPs' actual base year opex labour and non-labour weights to forecast real price change would provide an incentive to use more [than] the efficient proportion of internal labour in the base year to increase its forecast price growth. Consequently we cannot assume an individual distributor's opex price weightings are efficient, even if our benchmarking analysis finds the distributor to be efficient."*

To demonstrate a DNSP's capacity to react to such an incentive, the AER noted that Powercor's actual directly employed labour proportion of opex varied from 38% to 46% between 2009 and 2014.[19]

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15 AER, *AusNet Services Preliminary Decision*, Attachment 7 – Operating expenditure, October 2015, pp. 52-56.

16 Ibid, pp. 57-58.

17 Ibid., p. 58.

18 Ibid., p. 59.

19 Ibid., p. 59.

In line with AusNet Services' proposal, the Preliminary Decision assumed non-labour costs will increase in line with CPI.

Output growth

The Preliminary Decision accepted AusNet Services' approach to forecasting output growth, which used the output growth model applied by the AER in its recent determinations for other DNSPs. This model uses the following output growth measures and weightings:

- Customer numbers (67.6%);
- Circuit length (10.7%); and
- Ratcheted maximum demand (21.7%).

The AER accepted AusNet Services' forecasts of customer numbers and circuit length. The AER rejected the proposed ratcheted maximum demand forecast, substituting it with AEMO's 2014 transmission connection point maximum demand forecasts, which projects flat maximum demand.

Productivity change

The Preliminary Decision applied a zero per cent productivity change forecast, based on the AER's expectations of the forecast productivity for an efficient DNSP in the short to medium term. This was in line with AusNet Services' proposed productivity forecast of zero per cent.

4.3.2 Response to Preliminary Decision

Real price growth

There are three key aspects to the AER's Preliminary Decision on real price growth. These are:

- The use of EBA outcomes;
- The best available EGWWS WPI forecast; and
- The most appropriate labour and non-labour weights.

For the purposes of clarity, AusNet Services has divided its response accordingly.

The use of EBA outcomes

The Preliminary Decision stated that:[20]

> *"Wage increases in an individual enterprise agreement will often deviate from the industry average. One reason for this is because the wage increases in an individual agreement are affected by the market conditions at the time when the firm made the agreement. These conditions will be different than those that existed when other firms make their agreements. For example, when labour market conditions are softening the wage increases in an agreement made a year ago will likely be higher, all else equal, than an agreement made today. Thus, different firms may have negotiated different wage increases for the same year because they negotiated them at different points in time.*
>
> *Consequently, using an individual enterprise agreement to forecast labour price growth at the start of the forecast period and an industry average for the remainder would likely not produce an opex forecast consistent with the opex criteria. For example, if a firm has higher wages than the industry average (because it negotiated its latest agreement prior to the labour market softening) then you would expect, all else equal, that the wage increases in its next enterprise agreement would be lower than the industry average. Applying a forecast of the industry average wage increases for the remainder of the period would not reflect a realistic expectation of the cost inputs required to achieve the opex objectives."*

[20] Ibid., pp. 52-53.

AusNet Services' Initial Proposal applied its individual EBA outcomes for the period during which they applied, followed by CIE's EGWWS WPI forecast for the remainder of the current period. It did not use a combination of its individual EBA outcomes with a forecast based on average industry-wide EBA outcomes, which the Preliminary Decision appears to have concluded.

If the reference to an "industry average" is to AusNet Services' EGWWS WPI forecast, AusNet Services considers that the AER's criticisms of its approach are not substantiated. In particular, the AER has not provided adequate explanation of why it considers AusNet Services' proposed EBA-based labour escalator for the relevant period does not reasonably reflect the opex criteria. In developing its real price change forecast, AusNet Service has sought to ensure the forecast reflects a realistic expectation of the cost inputs required to achieve the opex objectives.

As discussed further below, AusNet Services' EBA outcomes reflect its actual, efficient costs and are therefore the best estimate of the cost inputs required to achieve the opex objectives. However, as these EBAs expire during the current period, AusNet Services has had to identify an alternative escalation rate to apply for the remaining years.

The best available WPI forecast is considered an appropriate escalator for these years. This forecast reflects the best information available at the time it was developed, including recent data on actual WPI growth and projections of economic variables based on recent macroeconomic conditions (discussed further in the next section).

While EBA outcomes may be based on different labour conditions than the conditions prevailing when the WPI forecast is developed, both reflect a realistic expectation of the cost inputs required to achieve the opex objectives for the time periods which they have been applied to. The AER should not reject the use of different labour cost forecasts for different years simply because each forecast was developed at a different time. The merits of each forecast, insofar as they accurately reflect efficient costs, should be the key factor in the AER's assessment.

Efficiency of AusNet Services' EBAs

As stated in its Initial Proposal, AusNet Services' EBA outcomes are efficient and reflect the costs a prudent and efficient operator would incur, regardless of differences in the labour market conditions prevailing at the time the EBAs were negotiated and those expected to prevail in the current period. The AER has produced no evidence to the contrary. In fact, the AER has recognised the efficiency of AusNet Services' opex in its use of economic benchmarking to assess the efficiency of AusNet Services' revealed costs, concluding that:[21]

> *"Economic Insights' MTFP and MPFP modelling indicates that AusNet Services is relatively efficient overall and also in the use of its opex."*

And:[22]

> *"The MTFP results indicate AusNet Services' efficiency is comparable to the more productive service providers in the NEM."*

The AER's assessment of partial performance indicators also confirmed the efficiency of AusNet Services' base opex:[23]

> *"In our annual benchmarking report we also present a number of partial performance indicators. These indicators examine the service providers' use of assets, opex and total inputs in delivering its distribution services. Under these metrics, AusNet Services also appears to be one of the more efficient networks."*

21 Ibid., p. 29.

22 Ibid., p. 30.

23 Ibid., p. 33.

And:[24]

> *"AusNet Services (AND) incurs relatively low opex and total cost per customer when compared to its peers."*

The wage increases embedded in AusNet Services' EBAs are an integral part of the operating practices that have enabled it to achieve an efficient level of opex compared to its peers.

The AER has stated that "we base our alternative estimate on setting base opex and the rate of change for an efficient and prudent service provider to achieve the opex objectives rather than the NSP's actual costs."[25] However, in developing its alternative estimate of opex, the AER has relied on AusNet Services' actual costs to determine base year opex, as it has deemed these costs to be efficient. By not using a DNSP's actual efficient costs where these costs are available – as reflected in EBA outcomes – to also determine the rate of change, the AER is not developing its alternative opex forecast on a consistent basis. All else equal, the application of efficient EBA outcomes to an efficient base year will produce a forecast of labour costs that is required to achieve the opex objectives.

The sum of base year labour costs and forecast real price change opex accounts for a significant proportion (around 68%) of the total opex forecast. Due to this materiality, by applying an EGWWS WPI forecast in place of AusNet Services' EBA outcomes, the Preliminary Decision does not present a total opex forecast that reasonably reflects the cost inputs required to achieve the operating expenditure objectives, and is not consistent with the Revenue and Pricing Principles.

Furthermore, once an EBA has been certified by the Fair Work Commission, the EBA (including the wage increases it provides for) constitutes a regulatory obligation or requirement which AusNet Services must comply with. As such, the costs AusNet Services incurs in complying with its EBA are costs which are required to achieve the operating expenditure objectives and properly form part of its forecast total opex.[26]

In responding to the regulatory incentives it faces, AusNet Services strives to negotiate EBA outcomes that allow it to meet its service obligations at the lowest possible cost. AusNet Services' EBAs are therefore efficient, with the associated wage increases reflecting prudent and efficient costs.

AusNet Services responds to efficiency incentives

The AER has expressed concerns that "adopting the wage rate increases in an individual firm's enterprise agreement [in regulatory determinations] would reduce the incentive to negotiate efficient wages."[27] For this concern to be valid, it would have to be such that the incentives provided by the EBSS are not sufficiently strong to drive DNSPs to negotiate wage outcomes that allow it to meet its obligations at the most efficient cost.

The EBSS provides a DNSP with a strong and continuous incentive to make opex efficiency savings, including by negotiating efficient wage outcomes that allow it to outperform the opex forecast approved in the relevant regulatory determination. Furthermore, the knowledge that the AER will assess the efficiency of base year opex in future determinations – and set this base year aside if it finds it to be inefficient – provides an incentive for DNSPs to ensure their wage outcomes are efficient to mitigate this risk.

The evidence demonstrates that AusNet Services has responded to these incentives by driving opex savings in recent years. Between 2006 and 2014, total opex of $1,373 million was around eight per cent lower than total allowances of $1,483 million (real 2015), demonstrating

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24 Ibid., p. 34.

25 Ibid, p. 52.

26 NER 6.5.6(a)(2).

27 Ibid, p. 53.

AusNet Services' strong track record of responding to the incentives provided by the EBSS and in doing so, providing safe and reliable services at the lowest cost.[28]

For these reasons, AusNet Services considers that the AER's concerns regarding the efficiency of its EBA outcomes are unfounded. AusNet Services proposes to escalate its internal labour for 2016 using the rates in its EBAs for the months of that year to which they will apply, combined with the best available EGWWS WPI forecast for the balance of 2016. This results in a real internal labour escalator of 1.74% being applied for 2016.

The best available labour EGWWS WPI forecast, and how AusNet Services has determined the labour portion of its base year costs to apply this forecast to, is discussed in the following two sections.

The best available EGWWS WPI forecast

The Preliminary Decision considered that an average of DAE and BIS Shrapnel's EGWWS WPI forecasts represented the best available forecast of directly employed and contracted field services labour cost increases. The AER stated that:[29]

> *"Given our previous analysis found an average of the forecast from DAE and BIS Shrapnel was closest to actual WPI growth we consider an average of BIS Shrapnel's and DAE's forecasts would produce the best forecast available of the growth in the Victorian utilities WPI."*

The Preliminary Decision also stated that:[30]

> *"Where a consultant is used to forecast labour prices, we consider an averaging approach that takes into account the consultant's forecasting history, if available, to be the best methodology for forecasting labour price growth."*

AusNet Services accepts that the EGWWS is an appropriate WPI measure to forecast labour cost increases, and agrees that an averaging approach is an acceptable methodology for forecasting labour price growth.

AusNet Services engaged CIE to develop an updated forecast of EGWWS WPI growth, based on September quarter 2015 WPI data. CIE's report is provided at Appendix 4A. The table below compares CIE's forecast with those of DAE and BIS Shrapnel, and the timing of these forecasts.

Table 4.3: Comparison of EGWWS WPI forecasts

Forecaster	Timing	2016	2017	2018	2019	2020	Average
CIE	Nov-15	0.7%	1.0%	1.1%	1.0%	1.0%	0.9%
DAE	Jun-15	-0.2%	0.3%	0.8%	0.9%	0.9%	0.5%
BIS Shrapnel	Nov-14	0.9%	1.3%	1.8%	2.1%	1.8%	1.6%
Average – DAE / BIS Shrapnel	**N/A**	**0.4%**	**0.8%**	**1.3%**	**1.5%**	**1.4%**	**1.1%**
Average – All	**N/A**	**0.6%**	**0.9%**	**1.2%**	**1.2%**	**1.2%**	**1.0%**

Source: AER, AusNet Services Preliminary Decision, Attachment 7 – Operating expenditure, October 2015, p.56; CIE, Labour price forecasts prepared for Powercor, AusNet Services and CitiPower – Final report, November 2015, p. 7.

CIE's updated forecasts are lower than those included in AusNet Services' Initial Proposal, reflecting updated economic data from the last year that suggests a more subdued economic outlook in the near term.[31]

28 AusNet Services, *Regulatory Proposal 2016-20*, April 2015, p. 175.

29 AER, *AusNet Services Preliminary Decision*, Attachment 7 – Operating expenditure, October 2015, p. 56.

30 AER, *AusNet Services Preliminary Decision*, Attachment 7 – Operating expenditure, October 2015, p. 55.

31 CIE, *Labour price forecasts prepared for Powercor, AusNet Services and CitiPower – Final report*, November 2015, p. 25.

AusNet Services considers that an average of DAE, BIS Shrapnel and CIE's updated forecast represents the best available forecast of EGWWS WPI growth over the current regulatory control period because:

- Statistical theory indicates that an average of multiple forecasts – provided the forecasts are reasonable – will produce a better forecast than an individual forecast;
- The evidence suggests that actual EGWWS WPI growth has diverged from DAE and BIS Shrapnel's forecasts; and
- CIE has strong credentials as an economic forecaster.

It is widely recognised in the statistics literature that when multiple forecasts of the same variable are available, combining forecasts from different sources generally results in a more accurate forecast than if a single source was used. In order for this approach to be effective, each source must contribute some useful information.

The different macroeconomic models and techniques utilised by each forecaster represent different approaches to forecasting the EGWWS WPI and thus all contribute useful information to determining the best forecast. To the extent that each forecast (invariably) has some margin of error, averaging across a larger sample of approaches will reduce this margin of error.

As the AER has recognised, previous EGWWS WPI forecasts developed by DAE and BIS Shrapnel understate and overstate WPI growth, respectively. While some divergence between forecast and actual growth is expected given the nature of economic forecasts, AusNet Services considers that the divergence demonstrated by the forecasters adopted by the AER warrants the inclusion of an additional forecast.

CIE is one of Australia's leading economic consulting firms, having been in operation for over 25 years. CIE is a leader in econometric and statistical modelling of utility networks, including modelling historical relationships and the development and application of forecasting techniques, which have been successfully applied to Australian electricity and gas distributors. CIE's forecasting capabilities position it well to contribute meaningfully to the development of the best available EGWWS WPI forecast.

In its December 2014 forecast, CIE forecast Victorian EGWWS WPI real growth for 2015 of 1.25%.[32]

In its June 2015 forecast, DAE forecast Victorian EGWWS WPI growth for 2015 of 2.0% in real terms,[33] while BIS Shrapnel forecast growth of 0.50% in its November 2014 forecast.[34]

As shown in the table below, actual year-to-date real EGWWS WPI growth in 2015 is 0.53%.

Table 4.4: Actual year-to-date real EGWWS WPI growth, 2015

	EGWWS WPI	CPI	Real WPI growth
Dec-14	124.30	106.60	N/A
Sep-15	126.60	108.00	N/A
Growth	**1.85%**	**1.31%**	**0.53%**

Source: ABS; AusNet Services analysis

Growth for the full year will therefore be at least 0.53%, demonstrating that:

32 CIE, *Labour price forecasts prepared for Powercor, AusNet Services and CitiPower – Final report*, December 2014, p. 6.

33 Deloitte Access Economics, *Forecast growth in labour costs in NEM regions of Australia – Report prepared for the AER*, June 2015, p. 10.

34 BIS Shrapnel, *Real labour and material cost escalation forecasts to 2020 – Australia and Victoria: final report*, November 2014, p. ii.

- There will be divergence between the various WPI forecasts and actual growth in 2015, substantially so for some forecasts;
- DAE is likely to have significantly over-forecast 2015 growth, despite the AER finding that DAE tend to under-forecast utilities labour price growth;[35] and
- BIS Shrapnel's forecast appears most likely to best reflect actual growth, followed by CIE's.

Based on the margin of error demonstrated by all three forecasts, the reasonableness of the available forecasting history from CIE and the averaging principles set out above, AusNet Services considers an average of the forecasts developed by CIE, DAE and BIS Shrapnel represents the best available forecast.

The following table shows AusNet Services' proposed EGWWS WPI forecast.

Table 4.5: Revised EGWWS WPI forecast

	2016	2017	2018	2019	2020
EGWWS WPI growth	0.55%	0.88%	1.16%	1.25%	1.17%

Source: AusNet Services

In conjunction with the labour and non-labour weights discussed in the next section, this forecast has been used to escalate labour costs for the current period, with the exception of 2016 cost increases, which have been determined using the EBA-based escalator of 1.74% discussed above.

The most appropriate labour and non-labour weights

The Preliminary Decision applied benchmark weights of 62% labour and 38% non-labour, respectively, in place of AusNet Services' proposed weights. AusNet Services does not accept the AER's benchmark weights and has applied a revised set of weights that reflect its actual, revealed costs, consistent with the AER's view of what are labour and non-labour costs.

There are a number of flawed assumptions made by the AER in support of its use of the benchmark weights, including that:

- The benchmark weights are appropriate in the absence of more precise information;
- Non-field services labour costs will increases in line with CPI; and
- Using a DNSP's actual weights would provide an incentive to use more than the efficient proportion of internal labour.

The AER's assumptions mean that the use of the benchmark weights in the rate of change calculation will not result in a forecast of opex that is required to meet the opex objectives.

The remainder of this section assesses the validity of each of these assumptions.

Are the benchmark weights appropriate in the absence of more precise information?

The AER's benchmark weights are based on an index constructed by Economic Insights for the purposes of deflating opex for its benchmarking analysis, which in turn are based on analysis conducted by the Pacific Economics Group (PEG) that is now 12 years old.[36]

In its Preliminary Decision, the AER considered that the benchmark weights were appropriate in light of Victorian DNSP and SAPN benchmarking data on labour and contracted services opex, which demonstrated that the labour weighting should be somewhere between 43% and 83%. The

35 AER, *AusNet Services Preliminary Decision*, Attachment 7 – Operating expenditure, October 2015, p. 55.

36 Economic Insights, *Economic Benchmarking Assessment of Operating Expenditure for NSW and ACT Electricity DNSPs*, November 2014, p. 14.

AER also noted that "for those contracts that provide field services only the labour related expenses should be allocated to the labour weighting."[37]

The PEG analysis was conducted more than a decade ago, based on estimated information and for a different purpose to what Economic Insights, and the AER, now use it for. The AER has not provided sufficient explanation as to why, in light of these shortcomings, it considers the benchmark weights based on this data to be more appropriate than an efficient DNSP's actual base year weights. This is despite acknowledging that it has actual data suggesting the labour weighting should be somewhere between 43% and 83%. Further, if the AER does not think it has the actual data it requires, it is not clear why this was not included in the extensive data gathering it has conducted (e.g. the Economic Benchmarking and Category Analysis RINs).

Notwithstanding the shortcomings of the PEG data, the use of external benchmark weights, insofar as they do not reflect an efficient DNSP's actual weights, runs counter to the AER's preferred method of forecasting opex using revealed costs. Specifically, the AER's approach is a significant departure from its preference to use a DNSP's actual costs, where these costs are found to be efficient, to develop its alternative forecast of the opex required to achieve the opex objectives.

AusNet Services agrees that only labour costs should be included in the labour weighting. Accordingly, AusNet Services has reassessed its external labour costs and developed revised labour weights that exclude expenditure on contracts for non-labour services.

The weights proposed in the Initial Proposal were developed by allocating actual audited 2014 opex to either:

- Internal labour, which included the costs of directly employed staff and labour hire contracts, consistent with the requirements of the benchmarking RIN guidelines and requirements;
- External labour, which included the costs of field based and non-field based contracted services, which AusNet Services understood to be predominantly labour costs.
- Non-labour, which included a range of costs such as materials, motor vehicle expenses, media and marketing costs and land and building leases.

These weights were then adjusted to account for cost categories that had been added or removed from base year opex (e.g. self-insurance costs) to ensure the weights included in the rate of change calculation accurately reflected the composition of the base year.

In developing revised labour and non-labour weights for this Proposal, AusNet Services has followed the same approach outlined above. However, to address the AER's concerns with respect to the accuracy and appropriateness of these weights, AusNet Services has also conducted a more granular assessment of its external labour costs, to ensure labour escalation is applied only to the labour portion of its base year opex.

This analysis allowed AusNet Services to disaggregate its base year opex into the following categories:

- Internal labour, which comprises the costs of AusNet Services' employees and its internal labour hire contracts;
- External labour, which is further broken down into:
    - Field services (vegetation management), which comprises the costs of vegetation management contracts. Vegetation management has been categorised separately to other field services due to the specialised nature of this service and its significance to AusNet Services' cost base;
    - Field services (other), which comprises the costs of other field services contracts, such as asset inspection and maintenance, patrol services and installations; and

[37] AER, *AusNet Services Preliminary Decision*, Attachment 7 – Operating expenditure, October 2015, p. 58.

- Non-field services, which comprises the costs of non-field services contracts, such as consulting, legal and audit services.

- Non-labour, which comprises a range of costs such as materials, motor vehicle expenses, media and marketing costs and land and building leases.

The table below shows the contribution of each of the above categories to 2014 actual opex, and AusNet Services' proposed labour and non-labour weights.

Table 4.6: Revised labour and non-labour weights, 2014 opex ($m, nominal)

Cost category	Sub-category	Opex ($)	Adjusted opex ($)[1]	Weights (%)	Labour and non-labour weights (%)
Internal labour		90.3	89.0	45.6%	**82.8%**
External labour	Field services (vegetation management)	32.1	31.6	16.2%	
	Field services (other)	36.2	35.0	17.9%	
	Non-field services	5.9	6.0	3.1%	
Non labour		26.8	33.7	17.2%	**17.2%**
Total		**191.3**	**195.3**	**100.0%**	**100.0%**

Source: AusNet Services

[1] *Adjusted opex accounts for cost categories that had been added or removed from base year opex (e.g. self-insurance costs) to ensure the weights included in the rate of change calculation accurately reflect the composition of the base year.*

The AER has stated that "it has become increasingly difficult to ascertain what the exact split between the labour component and the materials and services component of opex should be with the move to greater (and varying) use of contracting out of field services by distributors."[38] As demonstrated by the table above, AusNet Services does utilise external labour to carry out field services work, such as vegetation management. However, where these contracts contain substantive non-labour expenditure on materials and equipment, the costs of these contracts are typically capitalised and thus do not form part of opex.

For the reasons above, AusNet Services has applied its proposed EGWWS WPI forecast to each of the above cost categories, with the exception of non-labour. Accordingly, AusNet Services is proposing labour and non-labour weights of 82.8% and 17.2%, respectively.[39] These weights, which are based on revealed costs, are consistent with the AER's findings that the labour weighting in the industry lies between 43% and 83%.

While the Preliminary Decision applied the EGWWS WPI forecast only to the AER's view of internal labour and field services contracts, AusNet Services considers that CPI is not an appropriate estimate for non-field services labour costs, and that all labour costs will increase at the same rate. The reasons for this are discussed further in the following section.

Finally, the AER has stated that it has used the benchmark weighting because "when we measure historic productivity growth we are interested in the productivity growth achieved by the service

38 AER, *AusNet Services Preliminary Decision*, Attachment 7 – Operating expenditure, October 2015, p. 58.

39 The external labour and non-labour revised weights differ from those included in the Initial Proposal largely due to 1. the greater amount of non-labour expenditure contained in this Revised Proposals' base year (e.g. Bairnsdale Power Station, insurance costs) and 2. the allocation of some costs to non-labour which had previously been incorrectly allocated to external labour.

providers rather than the productivity growth achieved by contractors providing services that are not unique to electricity distribution."[40]

By taking total inputs, including opex, and forming a ratio with total outputs, the AER's economic benchmarking analysis is neither sensitive nor sophisticated enough to factor in different internal labour proportions attributable to different outsourcing models. Accordingly, there is no basis for the AER's assertion that the labour and non-labour weights used in its productivity model – which are assumptions based on decade-old data – must match the weights used to determine AusNet Services' forecast rate of change. The rate of change is intended to capture future changes in the real cost of inputs, not measure historical productivity improvements.

Furthermore, by including field services contracts in its labour weighting, the AER is including labour that is "not unique to providing electricity distribution services" in the rate of change. For example, general construction industry contractors (e.g. Thiess) provide field services to not only AusNet Services and the wider electricity distribution industry, but also to a range of other industries. Again, by taking total opex, the AER's benchmarking analysis already includes labour not unique to the electricity distribution sector.

For these reasons, intending to capture only the "productivity growth achieved by the service providers rather than the productivity growth achieved by contractors providing services that are not unique to electricity distribution" should not be used as justification for applying the benchmark weights in the place of actual, revealed costs.

In light of the information provided in this Proposal on the shortcomings of the benchmark weights, the composition of its actual costs, the efficiency of its base year opex and the materiality of labour costs, continued application of the benchmark weights would result in an opex forecast that is not sufficient to meet the opex objectives. It would also fail to give AusNet Services a reasonable opportunity to recover at least the efficient labour costs it incurs.

Will non-field services labour costs increase in line with CPI?

The AER has determined that AusNet Services' non-labour costs, as well as its "non-field services" contracts (e.g. legal and accounting services, market research services, administrative services, etc.) will increase at the same rate as CPI.

The AER has therefore applied no real growth to (its view of) AusNet Services:

- Non-labour costs; and
- Non-field services contract costs.

While AusNet Services accepts that non-labour costs should be escalated at CPI, it does not accept the AER's position on applying CPI to non-field services contracts where these contracts comprise labour costs.

AusNet Services considers that all labour, including non-field services, should be escalated using the best available EGWWS WPI forecast. When rejecting the use of the Construction WPI to escalate field services contracts, the AER has said that:[41]

> *"The ABS takes into account the nature of the business, not the nature of the work undertaken, when allocating a job to an industry. The ABS labour price statistics for the EGWWS industry reflects both specialised electricity distribution network related labour* ***and general labour*** *[emphasis added]. We consider regardless of the nature of the task, if labour is employed by a business that operates in the utilities industry, then it should be escalated by the EGWWS industry forecast. For this reason we have adopted the EGWWS classification for all labour."*

In forming this view, the AER quoted the following advice it received from the Australian Bureau of Statistics:[42]

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40 AER, *AusNet Services Preliminary Decision*, Attachment 7 – Operating expenditure, October 2015, p. 57.

41 AER, *AusGrid draft decision* | Attachment 7: Operating expenditure, November 2014, p. 147.

> *"… regardless of the type of job, if the job was selected from a business classified to the electricity, gas, water and waste services industry, the jobs pay movements contributes to this industry."*

The AER's assumption that the costs of non-field services labour providing services to the utilities industry will not increase in line with the EGWWS WPI, and that these costs should therefore be escalated using CPI, directly contradicts its views set out above, and those of the ABS. This is because the AER is inconsistently treating non-field labour resources based solely on whether these resources are directly employed or outsourced, and effectively penalising DNSPs that choose to outsource rather than directly employ labour resources. This is because non-field services contracts represent labour that could be utilised through either an outsourcing or insourcing model, or a combination of both.

For example, AusNet Services maintains an "in-house" legal group to provide day-to-day legal advice, but also engages external legal resources where necessary (i.e. depending on the particular expertise required or where internal resource constraints apply). The decision to outsource or insource is based on whatever resourcing mix allows the company to obtain the best legal advice on the most efficient basis.

The AER has therefore assumed that by virtue of being engaged through an outsource model, non-field services labour will increase at CPI, whereas if the same resources had been directly employed and thus formed part of the EGWWS WPI – as recognised by the AER and the ABS – its cost would be expected to increase in line with the EGWWS WPI forecast. By penalising DNSPs for outsourcing non-field services, the AER is creating a perverse incentive to directly employ to the greatest extent possible. This undermines the incentive provided by the EBSS to drive opex efficiencies through, among other things, adopting the most efficient outsourcing model.

Notwithstanding this issue, the AER has attempted to demonstrate that non-field services labour costs have historically increased in line with CPI, as measured by growth in the Producer Price Indices (PPI) used in Economic Insights' benchmarking analysis.

This data shows that there has been significant variation in PPI growth across the industries examined, from 1% per annum for data processing, web hosting and electronic information storage services to 4% for market research and statistical services. Accordingly, the weighted average of these growth rates, which the AER has shown to broadly equal historical CPI growth, is dependent on the weights assigned to each PPI. The AER's use of the Economic Insights' benchmarking analysis weights assumes that the composition of AusNet Services' non-field services labour reflects these weights, without presenting evidence that this is the case. As outlined above, the benchmark weights are not fit for the purpose in which they are being applied and should not be used in place of AusNet Services' actual, revealed costs.

For the reasons above, AusNet Services does not agree with the AER's assumption that non-field services will increase in line with CPI, and considers that the best available EGWWS WPI forecast should be used to escalate these costs.

Does using a DNSP's actual weights provide an incentive to use more than the efficient proportion of internal labour?

The AER has stated that using a business' own base year weights would "provide distributors an incentive to use more than the efficient proportion of internal labour in the base year to increase its forecast price growth. Consequently we cannot assume an individual distributor's opex price weightings are efficient, even if our benchmarking analysis finds the distributor to be efficient."[43]

A DNSP may have flexibility in substituting between internal field services and external field services labour (e.g. it may choose to use internal field staff to carry out maintenance, or outsource this work to a field services contractor).

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42 Ibid., p. 147.

43 AER, *AusNet Services Preliminary Decision*, Attachment 7 – Operating expenditure, October 2015, p. 59.

However, given the Preliminary Decision has applied an EGWWS WPI forecast to both internal and external field services labour, the AER's concern is not valid. If a DNSP knew that both internal and external field services labour would be escalated by a forecast of the EGWWS WPI, it would be indifferent to using either type of labour with respect to the rate of change it would receive, and hence would not face an incentive to increase its proportion of internal labour.

While substitution is also possible between internal non-field and external non-field services labour (e.g. legal services), depending on whatever resourcing mix proves most efficient, the evidence shows that the incentive suggested by the AER is not reflected in AusNet Services' actual expenditure.

In 2014, the base year for the current period, AusNet Services' internal labour proportion was 47%.[44] In 2011, internal labour costs also accounted for 47% of total opex.[45] This demonstrates that AusNet Services' internal labour proportion has historically reflected the operational needs of the company, rather than an expectation of the rate of change formulae the AER will apply.

Notwithstanding the AER's concerns, AusNet Services maintains an outsourcing model that best meets its needs as a business with its particular geographic and customer attributes and customer base. The application of the AER's benchmark weights disregards how that structure has contributed to the cost efficiency achieved by AusNet Services to date. In particular, there is a danger that the AER's approach will drive businesses to adopt an outsourcing model that aligns with the benchmark weights, but is not optimal for each business' unique operational needs, potentially increasing costs. Such an outcome does not promote operational efficiency and it would not be in the long-term interests of customers.

Finally, the mix of labour and non-labour in base opex reflects a DNSP's view of the most efficient mix of inputs that allows it to meet its obligations. By stating that it cannot assume a business' revealed costs are efficient, the AER is contradicting its top down assessment that AusNet Services (and Victorian DNSPs generally) has an efficient level of opex. The AER is also suggesting that the EBSS only provides an incentive for DNSPs to achieve an efficient level of total opex, but not to achieve an efficient mix of labour and non-labour inputs.

For these reasons, the AER's concerns with respect to the use of actual labour and non-labour weights are unfounded, and should not be used as justification for the application of its benchmark weights.

Output growth

AusNet Services accepts the AER's approach to calculating output growth but does not accept the maximum demand forecast used by the AER in that calculation. AusNet Services has also updated its customer number forecasts to reflect the best available information with respect to Victorian population growth. AusNet Services' forecast growth in circuit length is unchanged from its Initial Proposal.

Forecast growth in maximum demand

AusNet Services has updated its maximum demand forecast to reflect the latest forecasts available from AEMO. A detailed response to the AER's Preliminary Decision on forecast Maximum Demand is provided in Chapter 1: Demand and Energy.

In summary:

- AusNet Services' forecast is reasonable, and its forecasting methodologies produce the best forecast of future maximum demand;

[44] Total opex of $191.3m (nominal) included internal labour expenditure of $90.3m.

[45] Total opex of $145.3m (nominal) included internal labour expenditure of $68m.

- The AER used outdated AEMO maximum demand growth forecasts and had it used the latest AEMO forecasts[46] it would have seen that AEMO's revised view was aligned to AusNet Services; and
- New projections of Victorian population growth, released by the Victorian Government in August, require maximum demand forecasts to be updated.[47] Specifically, customer connections growth is forecast to be higher overall, with some locations experiencing higher growth and some forecasting lower growth than included in AusNet Services' Initial Proposal. These forecasts are an accepted and independent source for determining customer connections.

Customer numbers

As noted above, subsequent to the Initial Proposal, the Victorian Department of Environment, Land, Water and Planning (DELWP) released updated population and household projections for Victoria. These forecasts show an increase in residential (household) growth from 1.75% p.a. to 1.99% p.a. in the period 2016-2021.

AusNet Services has updated its customer number forecast to reflect this new information. The revised customer number forecast is discussed further in Chapter 1: Demand and Energy.

The following table sets out AusNet Services' revised output growth forecast.

Table 4.7: Revised output growth forecast

Output measure	2016	2017	2018	2019	2020
Customer numbers (%)	1.86%	1.76%	1.74%	1.68%	1.61%
Circuit length (%)	1.51%	1.53%	1.40%	1.30%	1.30%
Ratcheted maximum demand (%)	0.81%	0.83%	0.90%	0.87%	0.89%
Output growth (%)	**1.67%**	**1.61%**	**1.58%**	**1.51%**	**1.47%**

Source: AusNet Services

Productivity change

AusNet Services accepts the Preliminary Decisions' application of a zero per cent productivity growth forecast, and agrees that this is an appropriate forecast of productivity change over the current period.

Some stakeholders expressed concern regarding the negative productivity observed in the electricity distribution industry in recent years. A number of stakeholders considered that a positive productivity forecast should be included in the rate of change.

For the reasons outlined in its Initial Proposal, a positive productivity forecast has not been proposed. As outlined in its Initial Proposal, AusNet Services considers that in the absence of evidence that suggests the efficiency frontier is improving, applying a productivity adjustment in the rate of change would not produce the best forecast of total opex.

Further, the EBSS provides strong incentives for AusNet Services to drive ongoing productivity improvements that may be over and above the forecast of industry-average productivity. The application of a firm specific productivity improvement in the rate of change would effectively be pre-empting the productivity improvements the EBSS incentivises DNSP to achieve.

At the same time, AusNet Services does not propose to continue the historical negative trend in opex productivity observed across the industry. This trend has in part been caused by externally

[46] Australian Energy Market Operator (AEMO), *2015 AEMO Connection Point Forecasting Report for Victoria*, September 2015.

[47] Department of Environment, Land, Water and Planning, *Victoria in Future 2015*, Victorian State Government, August 2015.

driven cost increases (e.g. vegetation management, insurance), which increased AusNet Services' opex inputs without affecting the outputs measured within the AER's benchmarking analyses. In the absence of these exogenous cost increases AusNet Services' opex would have grown at just 1.5 per cent per annum, on average, between 2010 and 2014, compared with an actual growth rate of 5.5 per cent.[48]

Regarding the use of historical productivity to forecast future productivity, AusNet Services' Initial Proposal stated that:[49]

> *"Firstly, it would result in a negative productivity assumption, running counter to the regulatory regime AusNet Services operates within, which is designed to foster productivity improvement. Further, this approach would be forecasting productivity based on productivity measured over a period that is not indicative of the future levels of productivity, resulting in a forecast of total opex that does not reasonably reflects the opex criteria."*

AusNet Services remains committed to driving productivity improvements in response to the EBSS, which provides a strong incentive to achieve and maintain productivity improvements. These productivity improvements in turn benefit customers in the long-run through lower opex allowances.

AusNet Services has also proposed to absorb a number of cost increases it expects to incur over the current period. To maintain financial sustainability, it will be crucial to offset these cost increases through productivity improvements. Through Program WorkOut, AusNet Services has made a significant investment in new IT systems during the 2011-15 period. Once fully integrated, these systems are expected to drive operational efficiencies across the business, creating significant long-term value for AusNet Services and its customers. The EBSS provides a strong incentive for DNSPs to undertake such projects.

4.3.3 Revised Proposal

For the reasons set out above, AusNet Services is proposing rate of change opex for the current regulatory period of $78.6 million, which accounts for 6.2% of the total opex forecast.

Table 4.8: Revised rate of change forecast ($m, real 2015)

Component		2016	2017	2018	2019	2020	Total
Real price growth	%	1.00%	0.73%	0.96%	1.03%	0.97%	**N/A**
	$	2.0	3.5	5.5	7.7	9.7	**28.5**
Output growth	%	1.69%	1.61%	1.57%	1.51%	1.47%	**N/A**
	$	3.4	6.8	10.1	13.3	16.5	**50.1**
Productivity growth	%	0.00%	0.00%	0.00%	0.00%	0.00%	**N/A**
	$	0.0	0.0	0.0	0.0	0.0	**0.0**
Rate of change	**%**	**2.70%**	**2.35%**	**2.55%**	**2.56%**	**2.45%**	**N/A**
	$	**5.5**	**10.3**	**15.6**	**21.0**	**26.2**	**78.6**

Source: AusNet Services

4.4 Step Changes

AusNet Services' revised Proposal:

- Accepts the AER's approach to forecasting demand management expenditure;
- Clarifies the cost impact of recent changes to the Changes to Electrical Safety (Electric Line Clearance) Regulations 2015; and

[48] AusNet Services, *Regulatory Proposal 2016-20*, April 2015, p. 193.

[49] AusNet Services, *Regulatory Proposal 2016-20*, April 2015, p. 194.

- Sets out two new step changes as a result of new information.

4.4.1 Preliminary Decision

Demand management

The AER did not include AusNet Services' proposed demand management step change in its Preliminary Decision opex forecast. The AER stated that:[50]

> *"While AusNet Services expects that the costs of this demand management program will increase over the 2016–20 regulatory control period, it expects that the costs of the Bairnsdale network support program will decline over the period."*

The AER therefore included AusNet Services' 2014 demand management costs, including its Bairnsdale Power Station network support costs, in the base year, on the grounds that the AER makes its assessment about total forecast opex and not about particular categories or projects in the opex forecast.[51]

Changes to Electrical Safety (Electric Line Clearance) Regulations 2015

The AER considered that as a result of changes to the Electrical Safety (Electric Line Clearance) Regulations 2015 (ELC) that commenced on 28 June 2015, AusNet Services' vegetation management obligations in the 2016-20 period will be different to those in the 2011-15 period.

The AER also noted advice from ESV regarding amendments it had made regarding exceptions for structural branches, which the AER considered would result in a cost reduction for AusNet Services during the current period. The AER stated:[52]

> *"ESV also noted that it also made amendments to reintroduce exceptions for structural branches in relation to both insulated and uninsulated electric lines which returns the flexibility of ELC 2005 where practicable. This exception allows for reduced clearance distances to be adopted on the condition that appropriate risk mitigation activities are carried out to ensure that an equivalent safety outcome was achieved despite the reduced clearance dimension. ESV noted that the removal of these exceptions in ELC 2010 increased costs over time and expects that the reintroduction of these exceptions in ELC 2015 should decrease pruning costs over time.*
>
> *In our determination for the 2011–15 regulatory control period, AusNet Services was provided with a step change in opex for the removal of the structural branches exceptions. Since ESV has now reversed this change, this is a symmetrical decrease in regulatory obligations from the 2010 changes so we would expect a similar decrease in costs to the increase allowed for in the 2011–15 period. The Consumer Challenge Panel (CCP) also noted that the 2010 amendments to vegetation management are being reviewed and consider these change may have a significant impact on opex over the 2016–20 period.*
>
> *We have recognised that there are potentially both cost increases and cost decreases associated with the ELC 2015 amendments but the net impact of the changes are unclear at this stage. Following further guidance from ESV, we expect AusNet Services to be in a better position to assess the incremental effect of the regulatory changes. We expect it to address this in its revised proposal. Our position on this step change for the final decision will take all these factors into account in coming up with the overall change in costs to comply with ELC 2015."*

4.4.2 Response to Preliminary Decision

AusNet Services:

- Accepts the AER's approach to forecasting demand management expenditure;

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50 AER, *AusNet Services Preliminary Decision*, Attachment 7 – Operating expenditure, October 2015, p. 42.

51 Ibid., p. 42.

52 Ibid., pp. 43-44.

- Clarifies the cost impact of recent changes to the Changes to Electrical Safety (Electric Line Clearance) Regulations 2015; and
- Proposes two new step changes as a result of new information.

Demand management

AusNet Services accepts the AER's approach to forecasting demand management opex on the basis that it provides an opex allowance sufficient to deliver AusNet Services' proposed demand management program. The AER's approach places demand management options on an equal footing with network options with respect to the incentive schemes.

However, as discussed earlier in this chapter in the context of insurance, AusNet Services considers that depending on the materiality of a particular category of costs, a category specific forecast – such as a step change – may be required to determine a total opex forecast that meets the opex criteria.

Changes to Electrical Safety (Electric Line Clearance) Regulations 2015

As set out in its response to the AER's information request,[53] AusNet Services considers that it will be able to manage the following changes arising from the ELC 2015 within its existing opex allowance:

- Compliance with AS4373 "Pruning of amenity trees"; and
- Enhanced notification and consultation requirements.

Regarding exceptions for structural branches, AusNet Services considers that its base year costs are reflective of the vegetation management obligations that will apply during the current period, and that its costs are not expected to decline as a result of these exceptions.

The structural branches amendments noted by ESV are the introduction of:

- Regulations 4 and 5, which relate to insulated cables; and
- Regulation 6, which relate to bare conductor.

Regulations 4 and 5 (insulated cables)

At the last EDPR, AusNet Services' opex allowance included approximately $25 million ($2010) over five years for management of insulated service cables (not mains cables).

AusNet Services managed insulated service cables in accordance with the obligations contained in the 2010 regulations until October 2013, when it applied for and received an exemption from ESV for the management of reduced clearances to insulated service cables (included as a supporting document to this Revised Proposal).

Accordingly, since October 2013, AusNet Services' actual vegetation management costs reflect obligations which are substantially similar to the new management obligations contained under regulations 4 and 5 of the Electricity Safety (Electric Lines Clearance) Regulations 2015. This includes during 2014, the base year for the current period.

In fact, the new regulations impose an additional obligation over and above AusNet Services' current vegetation management obligations. Regulation 5(c) requires annual clearing of vegetation around insulated cables whereas clause 2.1.2 of the exemption allowed vegetation to remain if abrasion of the service cable was not likely before the next inspection (i.e. potentially for a number of years). However, AusNet Services considers that its base year vegetation management expenditure will be sufficient to comply with this additional obligation, and does not propose a step change in this regard.

53 Information Request #008, 1 July 2015.

Regulation 6 (bare conductor)

The primary purpose of the exception set out in Regulation 6 is to introduce further engineering measures for councils to manage street trees for which they have responsibility, in accordance with Section 84C of the Electricity Safety Act 1998, to maintain vegetation clearances. Where councils have structural limbs within the clearance space for bare conductors, they may apply to the responsible Major Electricity Company for an engineering assessment and where appropriate, application of engineering solutions at their own cost. For example, insulating covers could be applied to bare conductors in order to manage clearance to insulated cable clearances.

This exemption was therefore intended to introduce flexibility to the manner through which councils achieve compliance, and may result in changes to their vegetation management practices and costs. However, AusNet Services' vegetation management costs have not been impacted by the introduction of Regulation 6.

New step changes

There have or will be a number of changes to AusNet Services' regulatory obligations in the current period, which will increase its opex requirements during the current regulatory period. These changes relate to:

- The Essential Services Commission of Victoria's (ESCV) review of the Victorian Guaranteed Service Levels (GSL) scheme;
- A new connections charging framework; and
- The Power of Choice reforms.

At the time AusNet Services' Initial Proposal was lodged, the ESCV had not commenced its review of the GSL scheme, nor had the Victorian Government stated its intention to adopt the connections charging framework set out in Chapter 5A of the NER.

Since that time, the ESCV's draft and final decisions for its review of the GSL scheme have been published, and the Victorian Government has introduced legislation to Parliament to adopt Chapter 5A during the current period.[54]

Accordingly, the cost increases attributable to these regulatory changes have been forecast in this Revised Proposal. AusNet Services' revised GSL forecast is presented in section 4.6, while the cost impacts of the new connections charging framework are discussed below.

The reviews and changes to the regulatory framework initiated by the Victorian Government have been late in the AER review process, which has made it difficult to allow sufficient consultation with customers on the cost impacts of these changes.

While the Power of Choice reforms were underway at the time of the Initial Proposal, AusNet Services sought to recover the costs associated with these reforms through a nominated cost pass through event. The Preliminary Decision rejected this approach. Given there have been further developments in this space, firmer cost estimates can now be provided. Consequently, AusNet Services has included its forecast of prudent and efficient Power of Choice opex in this Revised Proposal. These costs are discussed below.

New connections charging framework

The Victorian Government has confirmed it is intending to legislate to adopt Chapter 5A of the NER, which contains the national connections framework. The likely timing of this change is not yet confirmed, but it is understood it will be 1 July 2016 at the earliest or 1 January 2017 at the latest. This means AusNet Services will become subject to the relevant parts of Chapter 5A of the NER and the AER's National Electricity Connection Charge Guideline will replace the ESCV's Guideline 14 during the current regulatory period.

54 National Electricity (Victoria) Further Amendment Bill 2015.

The application of Chapter 5A will increase the scope and complexity of AusNet Services' connection charging obligations, which have reflected Guideline 14 during the 2011-15 period. In particular, AusNet Services will be required to undertake additional activities relating to connection charges and rebates. Consequently, additional costs will be incurred during the current period to ensure compliance with the new connections charging framework.

These costs relate to the additional staff required to process the new charging arrangements consistent with the new obligations. The risks of the 'do nothing' option are non-compliance with AusNet Services' regulatory obligation to charge customers in accordance with Chapter 5A. Hence, doing nothing is not a credible option.

A key feature of these new obligations includes the development and administration of Pioneer Schemes, which require AusNet Services to make refunds to retail customers that have funded connection assets which are no longer being dedicated to the exclusive use of that customer. The refund is funded through a connection charge payable by the new users of the relevant assets. These schemes greatly increase the scope and complexity of AusNet Services' rebates scheme.

AusNet Services is also required to develop and maintain a new Connections Policy that sets out charging arrangements for connection of premises and real estate developments to AusNet Services' network on a consistent basis with the AER's published Connection Charge Guideline. Furthermore, new data collection and reporting processes for regulatory reporting against new customer service metrics will need to be developed. An increase in customer enquiries is also expected in response to the changed connection charging arrangements set out under Chapter 5A.

AusNet Services has assessed that it will require three additional FTEs to carry out this new range of activities:

- Connection Policy Manager to develop and maintain a new Connections Policy and provide management oversight;
- Connection Charging Analyst to develop and maintain rebate scheme databases, calculate and administer rebates (e.g. incremental revenue and Pioneer Scheme calculations) and comply with new reporting processes and requirements; and
- Connection Relationship Officer to respond to the expected increase in customer enquiries.

The forecast costs of these FTEs (including statutory on-costs) are set out in the table below. These costs are in addition to AusNet Services' base year costs, which reflect the less prescriptive connection charging obligations that applied under Guideline 14.

Table 4.9: Forecast opex for new connections charging framework ($m, real 2015)

New connections Framework	2016	2017	2018	2019	2020	Total
Connection Policy Manager	0.2	0.2	0.2	0.2	0.2	**0.9**
Connection Charging Analyst	0.1	0.1	0.1	0.1	0.1	**0.6**
Connection Relationship Officer	0.1	0.1	0.1	0.1	0.1	**0.6**
Total	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**2.1**

Source: AusNet Services

Power of Choice reforms

On 30 November 2012, the AEMC released its final report and implementation plan with respect to its review of demand side participation in the NEM, titled Power of Choice – giving consumers options in the way they use electricity. In response to this report, the Council of Australian Governments (COAG) and the COAG Energy Council agreed to implement a suite of energy market reforms that relate to:

- Improving pricing and incentives by providing customers with clear signals about the cost of their energy consumption;
- Providing customers and demand side providers with information that allows them to choose efficient demand options; and
- Implementing a range of technologies, skills and supporting frameworks to support pricing information and demand management options.

The implementation of the Power of Choice reforms requires changes to the NER. Accordingly, multiple rule change requests have been submitted to the AEMC by the COAG Energy Council. These rule changes will have a number of implications for the operation of the electricity market, some of which are likely to affect the cost of providing direct control services. Principally, the introduction of a contestable metering framework from 1 December 2017 will require DNSPs to make substantial changes to their processes and systems in order to progressively transform from providers to consumers of meter service and data.

AusNet Services' Initial Proposal did not include expenditure for Power of Choice reforms, and sought to deal with these costs through a nominated cost pass through event. The Power of Choice event was proposed because AusNet Services considered that, in light of the uncertainty around the Power of Choice reforms, the recovery of its prudent and efficient costs through the cost pass through arrangements, rather than ex ante expenditure forecasts, was in the long-term interests of customers.

However, the Preliminary Decision rejected the proposed Power of Choice cost pass through event. The AER considered that the prescribed regulatory change and/or service standard events set out in the NER would cover the cost impacts of the Power of Choice rule changes and provided appropriate protection against the risks presented by these rule changes. In response to the fact that the additional costs caused by these individual rule changes were unlikely to pass the materiality threshold for those pass through events, the AER considered that a nominated pass through event was not warranted simply because the materiality threshold would not be met.

Because of the separate, but interconnected, nature of the Power of Choice reforms, and the associated costs for AusNet Services, the Preliminary Decision exposes AusNet Services to significant cost-recovery risk in the forthcoming period. These risks, and AusNet Services' response to the AER's position on this matter, are discussed further in Chapter 6: Cost Pass Through.

AusNet Services' preferred approach to dealing with Power of Choice costs was through a nominated cost pass through event, as this approach would have led to customers paying for the outturn costs incurred in meeting the new obligations. However, as the AER has rejected this approach, and in doing so exposed AusNet Services to cost-recovery risk, AusNet Services has had to include the prudent and efficient expenditure it expects to incur to implement the Power of Choice reforms in its revised expenditure forecasts.

Since the Initial Proposal, new information has also come to light that provides increased certainty around the expected cost impacts of the Power of Choice reforms. This information includes the publication of the AEMC's:

- Expanding Competition in Metering and Related Services (Metering Contestability) final determination on 26 November 2015, which introduces a competitive framework for metering services from 1 December 2017;
- Multiple Trading Relationships (MTR) draft determination on 19 November 2015, in which the AEMC decided to not to make a draft rule change in relation to the MTR rule change request;
- Meter Replacement Processes draft determination on 17 December 2015, which provides a draft rule setting out the arrangements for meter churn; and

- Embedded networks final determination on 17 December 2015, which set out a rule that will create the new role of embedded network manager to perform the market interface functions that link embedded network customers to the NEM.

These developments provide increased clarity around the new business processes, and costs, which will be required to comply with Power of Choice. The forecast costs reflect the obligations that are currently due to apply in the current period in regards to metering contestability, whereby the current Victorian derogation from the NER Rules will expire on 1 December 2017. While the Victorian Government may choose to extend some form of derogation, it is prudent that the operating expenditure allowance for the current period be based on the regulatory arrangements as they are presently written.

In light of this new information, and the Preliminary Decision's approach to Power of Choice costs, AusNet Services has forecast the additional opex that will be required during the current period to comply with the new regulatory obligations attributable to the reforms. Chapter 3: Capital Expenditure sets out the capex impacts of the individual Power of Choice reforms.

The proposed opex is driven by the new business processes, and increased volumes of existing processes, that will be required under Power of Choice. These changes will require a substantive FTE uplift during the current period. As the risks of the 'do nothing' option are non-compliance with the regulatory obligation created by Power of Choice, this is not a credible option.

The forecast expenditure is required to comply with AusNet Services' regulatory obligations as a distribution network services provider. These costs specifically exclude any costs to establish and/or operate a contestable metering business. Any costs associated with this activity will be funded by that business.

The table below sets out forecast opex of $4.8 million required for the Power of Choice reforms.

Table 4.10: Forecast Power of Choice opex ($m, 2015)

Power of Choice reform	2016	2017	2018	2019	2020	Total
Customer access to data	0.1	0.1	0.1	0.1	0.1	**0.6**
Cost reflective pricing	0.0	0.2	0.2	0.3	0.3	**0.9**
Metering contestability	0.0	0.0	0.7	0.9	1.2	**2.8**
Access to smart meter services and SMP / B2B integration	0.0	0.0	0.1	0.1	0.1	**0.3**
Demand response mechanism	0.0	0.0	0.0	0.0	0.1	**0.1**
Total	**0.1**	**0.3**	**1.2**	**1.4**	**1.7**	**4.8**

Source: AusNet Services

The profile of the step change opex set out above depends on the profile of the increased business process volumes forecast for each reform. These volumes are driven by when the new reform's obligations must be met, and the rate at which AusNet Services, the industry and its customers adapt to the changes Power of Choice will bring. For example, as Metering Contestability will be effective from 1 December 2017, opex for this reform is forecast to begin ramping up from 2018.

Further information on the impacts of each reform with respect to business processes and costs is provided in the subsequent sections. The inputs and calculations used to determine forecast Power of Choice opex have been provided as a supporting model to this Revised Proposal.

Customer access to data (effective 1 March 2016)

This reform allows a customer to request electricity consumption data and allows a charge to be applied when a request for data is received from a customer more than four times in any given 12 month period, in a different manner or form than specified in the AEMO metering data provision procedures or by a customer authorised representative as part of a request for information about more than one customer.

Currently, this level of data provision is not conducted to a structured format, within the specified timeframes or at the volume that is expected to be realised from March 2016.

Therefore, additional staff will be required to:

- Manage the authentication of customer or authorised representative and their validation based on the customer information data;
- Manage the request lifecycle within specified timeframes;
- Initiate the extraction of meter data from the database and process and format the resulting meter data;
- Initiate the billing of requests for multiple customers; and
- Manage the expected increase in exception handling and customer queries.

The following table sets out the forecast opex associated with this reform.

Table 4.11: Forecast opex for customer access to data ($m, 2015)

Customer access to data	2016	2017	2018	2019	2020	Total
Opex	0.1	0.1	0.1	0.1	0.1	**0.6**

Source: AusNet Services

Cost reflective pricing (effective 1 January 2017)

This reform requires network charges to be reflective of the efficient costs of providing network services to incentivise customers to reduce their demand in peak times. To implement and manage the new tariff structures, additional staff will be required to:

- Capture, store, and analyse new energy elements for residential customers (e.g. season, maximum demand);
- Configure new tariffs to reflect maximum demand;
- Manage more complex revenue reconciliation and budgeting activities; and
- Manage a sharp increase in customer bill enquiries.

On 21 December 2015, the Victorian Government advised AusNet Services that cost reflective pricing arrangements will be implemented in Victoria through an opt-in approach. Given the timing of this advice, the opex and capex forecasts set out in this Revised Proposal do not reflect Victorian Policy. The Revised Proposal forecast for cost reflective pricing is based on universal application or an opt-out approach, in line with the NER pricing principles that would apply in the absence of applicable obligations contained in another regulatory instrument.

AusNet Services will advise the AER of the impact on its expenditure forecasts, if any, of the Victorian Government's position in a submission to the price review.

The following table sets out the forecast opex associated with this reform.

Table 4.12: Forecast opex for cost reflective pricing ($m, 2015)

Cost reflective pricing	2016	2017	2018	2019	2020	Total
Opex	0.0	0.2	0.2	0.3	0.3	**0.9**

Source: AusNet Services

Metering contestability (effective 1 December 2017)

This reform will transform the current regulated metering business model, introducing competition for residential and small business customer metering. This will be achieved by allowing retailers to

compete in the metering business through the new market role of Metering Coordinator (MC). These changes will have a substantive impact on AusNet Services' business processes.

Specifically, AusNet Services must ensure its regulated distribution and metering business complies with the rule changes (i.e. supports new market roles and transactions), and sustain its regulated business operations in the context of metering contestability (e.g. enable mass-market billing from third party meter data, outage management with third party meters, etc.).

The scope of AusNet Services' current business processes does not include receiving and processing external meter data from external parties for network billing purposes, nor coordinating with other Metering Coordinators and other external parties.

Hence, new business processes, and increased volumes of existing processes, will be carried out from 2018. These processes include:

- Coordinating with Metering Coordinators for installation of new, contestable meters in AusNet Services' network area (e.g. ensuring all documentation is received, creating and providing a National Meter Identifier (NMI), arranging appointments for fuse inserts, etc.);
- Exception management for new connections (e.g. following up for outstanding information);
- Carrying out new exit fee processes (e.g. calculation and processing of fees, responding to customer enquiries); and
- Requesting data from Metering Coordinators for billing purposes.

The following table sets out the forecast opex associated with this reform.

Table 4.13: Forecast opex for metering contestability ($m, 2015)

Metering contestability	2016	2017	2018	2019	2020	Total
Opex	0.0	0.0	0.7	0.9	1.2	**2.8**

Source: AusNet Services

Access to smart meter services and SMP/B2B integration (effective 1 December 2017)

This reform introduces a regime for the Metering Coordinator to provide smart meter services to retailers and third parties. The AEMC will define minimum service specification services to be supported by a new Shared Market Protocol (SMP) via B2B systems. The services accessible through the SMP will include:

- Remote energisation;
- Remote de-energisation;
- Remote on-demand meter read service;
- Remote scheduled meter read service;
- Metering installation inquiry service; and
- Advanced meter reconfiguration service.

The minimum specification services will be implemented via the SMP, which will be supported by a new transaction system implemented by AEMO. Consequently, AusNet Services will be required to develop the capability to integrate with this system in such a way to support the "near-instant" level of performance required for the expected transaction volumes.

From 1 December 2017, AusNet Services will be required to perform processes to enable it to provide and consume new smart meter services, in compliance with the requirements of the SMP. It is expected that the level of transactions requiring manual validation and system time-out intervention will increase substantively under the new protocol. Hence, additional costs are forecast from 2018 to reflect the forecast increase in these volumes.

The following table sets out the forecast opex associated with this reform.

Table 4.14: Forecast opex for access to smart meter services and SMP/B2B integration ($m, 2015)

Access to smart meter services and SMP / B2B integration	2016	2017	2018	2019	2020	Total
Opex	0.0	0.0	0.1	0.1	0.1	**0.3**

Source: AusNet Services

Demand response mechanism (effective 2019 (est.))

This reform establishes a new demand response mechanism (DRM) that would enable participating customers to offer a demand response (DR) for which they would be paid at NEM spot prices. Demand Response Aggregators (DRA) will coordinate customers to reduce their load compared to a projected or "baseline" consumption, and be paid by the Australian Energy Market Operator (AEMO) for the reduction. The DRA may then be able to reward customers based on an agreed scheme.

As DRA is an entirely new market role, new processes are required to govern the provision of DRAs with raw meter interval data on a near-real-time basis. While the DRM rule change is currently in its consultation stage, AusNet Services understands that all distributors will be required to provide meter interval data to DRAs from 2018.

Hence, new business processes will be carried out from 2018 to manage exceptions associated with:

- Maintaining standing database of data;
- Receiving and acknowledging data requests from DRAs;
- Providing data to DRAs; and
- Managing and resolving queries and issues from DRAs.

The following table sets out the forecast opex associated with this reform.

Table 4.15: Forecast opex for demand response mechanism ($m, 2015)

Demand response mechanism	2016	2017	2018	2019	2020	Total
Opex	0.0	0.0	0.0	0.0	0.1	**0.1**

Source: AusNet Services

4.4.3 Revised Proposal

AusNet Services' revised step change opex for the current regulatory period is $6.9 million. Step change opex accounts for 0.5% of the total opex forecast.

Table 4.16: Total forecast step change opex ($m, real 2015)

Step change	2016	2017	2018	2019	2020	Total
Power of Choice	0.1	0.3	1.2	1.4	1.7	**4.8**
New Connections Charging Framework	0.4	0.4	0.4	0.4	0.4	**2.1**
Total	**0.6**	**0.7**	**1.7**	**1.8**	**2.1**	**6.9**

Source: AusNet Services

4.5 Self-Insurance

AusNet Services does not accept the AER's approach to forecasting self-insurance costs as part of base year opex, and proposes to forecast these costs on a category-specific basis.

4.5.1 Preliminary decision

The Preliminary Decision rejected AusNet Services' proposed approach of forecasting its self-insurance costs for the current period, which involved:

- Removing actual 2014 self-insurance losses (being the costs incurred that are attributable to a self-insurance event) from base year opex; and
- Including a category-specific forecast of self-insurance costs in the opex forecast, based on actuarial modelling carried out by Aon.

The AER forecast self-insurance costs by leaving 2014 self-insurance losses in the base year, and excluding AusNet Services' category-specific forecast from its opex forecast.

In making this decision, the AER stated:[55]

> *"We make our assessment about the total forecast opex amount and not about particular categories or projects in the opex forecast. Within total opex we would expect to see some variation in the composition of expenditure from year to year. That is, expenditure for some categories will be higher than usual in a given year while other categories will be lower than usual. However, these variations tend to offset each other so that total opex is relatively stable. Using a category specific forecasting method may produce better forecasts of expenditure for those categories but we do not consider it produces a better forecast of total opex."*

4.5.2 Response to Preliminary Decision

AusNet Services does not accept the AER's approach to forecasting its self-insurance costs for the current regulatory period because it fails to:

- Consistently treat self-insurance and insurance; nor
- Recognise the impact of self-insurance losses on total opex.

Consistent treatment of self-insurance and insurance

The Preliminary Decision reflects a misunderstanding of the mechanics and purpose of self-insurance. Self-insurance losses are by nature volatile and can vary markedly from year to year. For this reason, the quantification of these losses is best suited to an actuarial analysis that forecasts self-insurance based on expected losses determined from historical data, rather than on actual losses in a single year. The AER's approach will not result in a more accurate forecast of total opex than such an analysis, particularly when base year opex is materially influenced by losses due to abnormal events.

Indeed, self-insurance is analogous to insurance, with the "premium" being an actuarial assessed self-insurance allowance, and the costs of actual self-insured events being equivalent to insurance losses that are claimed under an insurance policy. Therefore, just like for insurance, the relevant cost in the base year to be assessed is the allowance, or premium, not the self-insurance losses incurred.

Given either insurance or self-insurance, or a combination of both, can be used to manage a given risk class (e.g. bushfire liability), the costs of both risk management options should be assessed on a consistent basis. A relevant example is the treatment of insurance costs associated with the 2009 bushfires, where the relevant cost in the base year for the 2011-15 period was the liability insurance

[55] AER, *AusNet Services Preliminary Decision*, Attachment 7 – Operating expenditure, October 2015, pp. 41-42.

premium paid, not the amount paid out on settlements associated with court cases around these events. The AER's Preliminary Decision on self-insurance is analogous to the inclusion of the amount paid out on settlements in the 2011-15 opex allowance, rather than the insurance premium.

By accepting that insurance premiums are a cost that should be allowed for in opex forecasts, but not adopting the same position on self-insurance, the Preliminary Decision provides a perverse incentive to rely solely on insurance, rather than self-insurance, to manage insurable risks. This has the potential to result in an inefficient level of insurance coverage being obtained.

For example, the AER's approach incentivises AusNet Services to minimise its exposure to uninsured (i.e. below-deductible) losses by reducing the deductible on its bushfire liability policy. This may result in inefficient insurance premium increases that would ultimately be funded by customers, thereby running counter to the NEO. A consistent approach to both insurance and self-insurance provides balanced incentives to DNSPs with respect to the risk management measures they choose to employ, and is more likely to minimise the total cost of insurable risk than an approach that asymmetrically encourages insurance or self-insurance. This promotes the long-term interests of customers through lower opex allowances.

The AER approach is also at odds with the regulatory accounting treatment mandated in the transmission sector, where self-insurance payments are held in a provision that is then drawn down for events (losses). A similar treatment in the distribution sector should avoid confusion at future reviews.

The impact of self-insurance losses on opex

While the AER has stated that categories of expenditure vary from year to year and that these variations tend to offset each other, it has not presented evidence that this is the case with respect to AusNet Services' self-insurance costs. In fact, self-insurance is quite deliberately aimed at infrequent high cost events, therefore, the likelihood that the base year or even an average over one regulatory period would be reflective of annual self-insurance premiums set through an actuarial approach is unlikely. Figure 4.1 below demonstrates the volatility, and high cost, of self-insurance events.

AusNet Services acknowledges that the composition of its opex will vary from year to year and there may be some offsetting effects of this variation. However, whether these offsetting effects mean that total opex is broadly recurrent from year to year depends on the quantum of individual expenditure categories. Where an individual opex category has a high degree of volatility and may be significant from time to time, relying on offsetting effects between categories is unlikely to result in the best forecast of total opex.

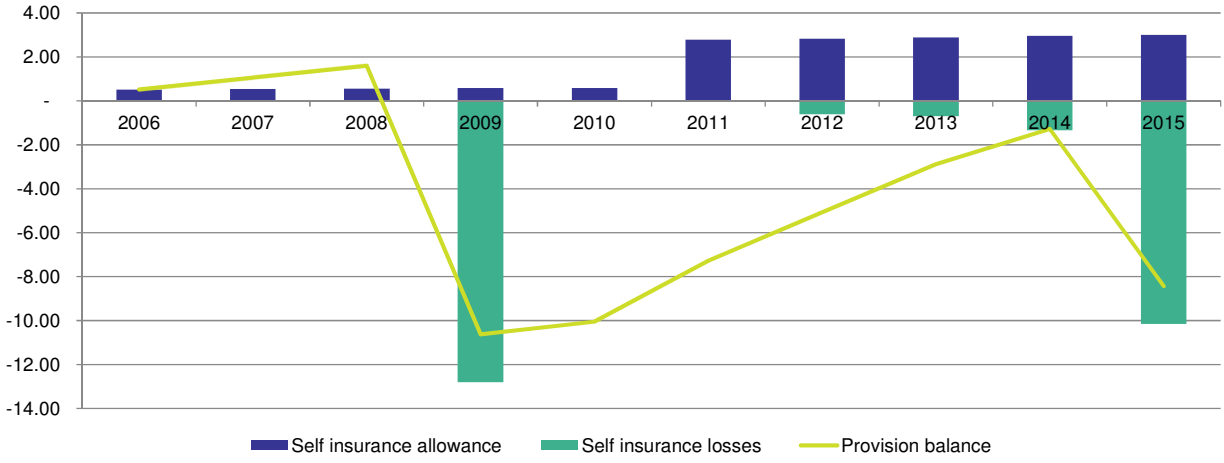
The high level of bushfire risk to which AusNet Services' network is exposed requires it to maintain a bushfire liability insurance policy with the highest limit of any utility in Australia. Therefore, there exists the potential for significant self-insurance costs to arise from time to time. For instance, the Black Saturday bushfires in 2009 led to AusNet Services incurring around $13.7 million (nominal) of bushfire related non-recurrent expenditure. These costs, which included the $5 million deductible on the bushfire liability insurance policy, as well as emergency response and unbudgeted vegetation management costs, were removed from AusNet Services' base year opex, and from its opex for EBSS purposes, for the 2011-15 regulatory control period.

In 2015, two smaller bushfires at Jack River and Mickleham Road resulted in AusNet Services again paying the deductible on its bushfire liability insurance policy, which has increased to $10 million following the Black Saturday bushfires. While these fires were not as devastating in terms of lives lost or properties destroyed, their cost impact was significant, highlighting the potential for AusNet Services to incur material costs when bushfires do occur, which will not be offset by reductions in other cost categories. While AusNet Services utilises sophisticated bushfire mitigation technology and equipment, the fact that its network area contains some of the most difficult terrain and hazardous bushfire risk area in Australia means the reoccurrence of further bushfire events is a risk it must manage.

For these reasons, forecasting self-insurance opex based on the amount of losses incurred in a single year will not result in an opex forecast that is required to achieve the opex objectives. This is because opex in a single year may contain an abnormally low or high amount of self-insurance losses, depending on the outcome of events outside the control of AusNet Services.

The following figure shows AusNet Services' historical self-insurance allowances for bushfire liability and poles and wires risks, the losses incurred for these risk classes and the "running" balance of the self-insurance provision.

Figure 4.1: Self-insurance allowances and losses ($m, nominal)



Source: AusNet Services; Essential Services Commission of Victoria, Electricity Distribution Review 2006-10 Final Decision - Volume 1, October 2005, p. 204; AER, Victorian electricity distribution network service providers distribution determination 2011-15, October 2010, pp. 468-470.

Note: The 2006-10 allowance reflects the $0.5m of self-insurance costs the Essential Services Commission of Victoria (ESCV) added to 2004 base year costs; the 2011-15 allowance reflects the $1.38m of bushfire liability costs the AER retained in 2009 base year opex and the $1.3m it provided for as an annual poles and wires allowance.

This figure demonstrates that both the 2009 and 2014 bushfires resulted in substantial self-insurance costs, and that these costs are highly volatile. In fact, this materiality and volatility has meant that historical self-insurance allowances have not been sufficient to cover losses. By rejecting Aon's actuarial assessment of expected self-insurance losses, and approving a self-insurance allowance that is lower than what has historically been determined, the Preliminary Decision opex forecast does not represent a realistic expectation of the cost inputs required to achieve the opex objectives.

Furthermore, if AusNet Services had paid a $10 million deductible during 2014 (the base year for the current period) rather than in 2015, its opex forecast for the current period would be at least $50 million higher under the AER's self-insurance approach. Because self-insurance losses are excluded from the EBSS for the 2011-15 period, this would have resulted in a windfall gain for AusNet Services and higher prices for customers. This potential outcome highlights the shortcomings of forecasting self-insurance opex based on the amount incurred in a single year.

However, self-insurance costs in 2014 were $1.7 million (real 2015), compared with Aon's annual self-insurance forecast of $3.3 million, which AusNet Services proposed in its Initial Proposal. Accordingly, the AER appears to have forecast AusNet Services' self-insurance costs based on its actual 2014 costs because these costs were not significant in that year, rather than based on a robust actuarial analysis.

Because of the intrinsic volatility of self-insurance costs, and their significance to total opex, an actuarial approach to forecasting these costs based on their expected value will result in a total opex forecast that meets the opex criteria, compared to an approach that forecasts using a single year of losses.

4.5.3 Revised Proposal

For the reasons outlined above, AusNet Services is proposing a self-insurance forecast of $16.9 million, based on the Aon forecast submitted in its Initial Proposal. Self-insurance costs account for 1.3% of the total opex forecast.

Table 4.17: Forecast self-insurance costs ($m, real 2015)

Risk class	2016	2017	2018	2019	2020	Total
Poles and wires	2.1	2.1	2.1	2.1	2.1	**10.6**
Fire liability	1.2	1.2	1.2	1.3	1.3	**6.2**
Total	**3.3**	**3.4**	**3.4**	**3.4**	**3.4**	**16.9**

Source: AusNet Services

4.6 GSL Payments

AusNet Services accepts the AER's category-specific approach to forecasting GSL costs based on an average of the last five years of actual payments. However, to reflect the GSL payments, rates and thresholds published in the ESCV's draft decision on its review of the GSL scheme, an increased GSL payments forecast is being proposed.

4.6.1 Preliminary decision

The Preliminary Decision accepted AusNet Services' proposed GSL forecast, which was based on a five-year average of actual GSL payments from 2010-14.

4.6.2 Response to Preliminary Decision

On 18 November 2015, the ESCV released a draft decision for its review of the Victorian Electricity Distributors' GSL scheme.[56] The draft decision proposed a number of changes to the existing GSL, including:

- Increases to all existing payment rates;
- Reductions in the threshold applying to some payments; and
- The introduction of a new payment.

The amendments to the scheme will apply from 1 January 2016.

The ESCV's final decision was published on 24 December 2015.[57] However, due to the timing of the final decision, AusNet Services has been unable to reflect any changes between the draft and final decisions in its revised GSL forecast. Should any changes be identified that affect the forecast, AusNet Services will provide further information on its forecast GSL payments in a submission to the AER.

The changes set out in the draft decision mean that AusNet Services' GSL payment costs during the current period will be higher than from 2010-14. Accordingly, AusNet Services has revised its forecast of GSL payments for the current regulatory period to reflect the payments, rates and thresholds set out in the ESCV's draft decision. The development of the revised forecast involved:

1. Determining the number of GSL payments that would have occurred from 2010-14 had the draft decision thresholds and payments applied in those years;

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56 Essential Services Commission Victoria, *Review of the Victorian Electricity Distributors' Guaranteed Service Level Payment Scheme: Draft Decision*, November 2015.

57 Essential Services Commission Victoria, *Review of the Victorian Electricity Distributors' Guaranteed Service Level Payment Scheme: Final Decision*, December 2015.

2. Multiplying the number of payments from step 1 by the draft decision rates to determine a revised time series of historical payments; and
3. Converting the revised time series of historical payments from step 2 into 2015 dollars and averaging this time series.

The inputs and calculations used to determine the revised GSL forecast have been provided as a supporting model to this Revised Proposal.

4.6.3 Revised Proposal

AusNet Services' revised GSL payments opex for the current regulatory period is $46.3 million. GSL costs account for 3.6% of the total opex forecast.

Table 4.18: Forecast GSL payment costs ($m, real 2015)

	2016	2017	2018	2019	2020	Total
GSL payments	9.3	9.3	9.3	9.3	9.3	**46.3**

Source: AusNet Services

4.7 Costs from ICT Distribution Systems Upgraded Under AMI

4.7.1 Preliminary decision

The AER rejected the proposed allocation of opex from ICT distribution systems upgraded under AMI (AMI opex) into SCS for the current period. Instead, the AER allocated these costs into ACS opex. The AER considered that the allocation of costs between SCS and ACS should be dealt with as part of the development of its Distribution Ring Fencing Guideline, which it is required to publish by 1 December 2016, in accordance with a nationally consistent approach.[58]

4.7.2 Response to Preliminary Decision

AusNet Services does not accept the AER's allocation of AMI costs into ACS on the basis that such an allocation is not consistent with its approved cost allocation method (CAM).

Consistent with its Initial Proposal, AusNet Services' approved cost allocation methodology (CAM) and long standing practice, metering charges for the current regulatory control period are calculated on an incremental costs basis. The basis of this allocation and the reasons for not accepting the allocation set out in the Preliminary Decision is explained in Chapter 11: Metering Services.

Practically, this means that many distribution business systems, as opposed to dedicated metering systems, that were upgraded as part of the AMI roll-out will now be subsumed into the distribution service. Examples include billing and B2B (data to market) systems that are required to fulfil distribution services and would exist even in the absence of a metering service.

Specifically, AusNet Services has included all opex on systems and assets that are required for the standard control network service, and particularly the Local Network Service Provider (LNSP) function outlined in the NER, in its distribution use of system charges.

This results in the following costs being allocated to SCS opex to be recovered in the core distribution network service:

- Communication and ICT (excluding Meter Management System) costs; and
- Overheads that were previously being allocated into the AMI project.

[58] AER, *AusNet Services Preliminary Decision*, Attachment 7 – Operating expenditure, October 2015, p. 40.

These costs are relatively constant over the period due to the BAU nature of operating the existing metering communication technology, and because the assumed efficiencies gained from the replacement capex rejected in the Preliminary Decision are no longer able to be achieved.

4.7.3 Revised Proposal

The table below sets out AusNet Services' revised AMI costs of $102.1 million, which account for 8% of the total opex forecast. Further details are provided in Chapter 11 and the Addendum to the Metering Asset Management Strategy.

Table 4.19: Forecast AMI costs ($m, real 2015)

	2016	2017	2018	2019	2020	Total
ICT maintenance	18.0	18.0	17.9	17.3	17.1	**88.4**
Overheads	2.7	2.7	2.7	2.8	2.8	**13.7**
Total	**20.7**	**20.8**	**20.7**	**20.1**	**19.9**	**102.1**

Source: AusNet Services

4.8 Total Opex Forecast

The table below shows AusNet Services' total forecast operating expenditure for the current period of $1,269.6 million.

Table 4.20: Forecast total opex ($m, real 2015)

Opex component	2014	2016	2017	2018	2019	2020	2016-20 total	
		Current period					$	%
Base opex	201.3	203.8	203.8	203.8	203.8	203.8	**1,018.8**	**80.2%**
Real price change	N/A	2.0	3.5	5.5	7.7	9.7	**28.5**	**2.2%**
Output growth	N/A	3.4	6.8	10.1	13.3	16.5	**50.1**	**3.9%**
Step changes	N/A	0.6	0.7	1.7	1.8	2.1	**6.9**	**0.5%**
Self-insurance	1.7	3.3	3.4	3.4	3.4	3.4	**16.9**	**1.3%**
GSL payments	6.6	9.3	9.3	9.3	9.3	9.3	**46.3**	**3.6%**
AMI costs	27.1	20.7	20.8	20.7	20.1	19.9	**102.1**	**8.0%**
Total opex	**236.7**	**243.1**	**248.1**	**254.3**	**259.4**	**264.7**	**1,269.6**	**100.0%**

Source: AusNet Services

Notes: Includes debt raising costs in base opex; excludes DMIA.

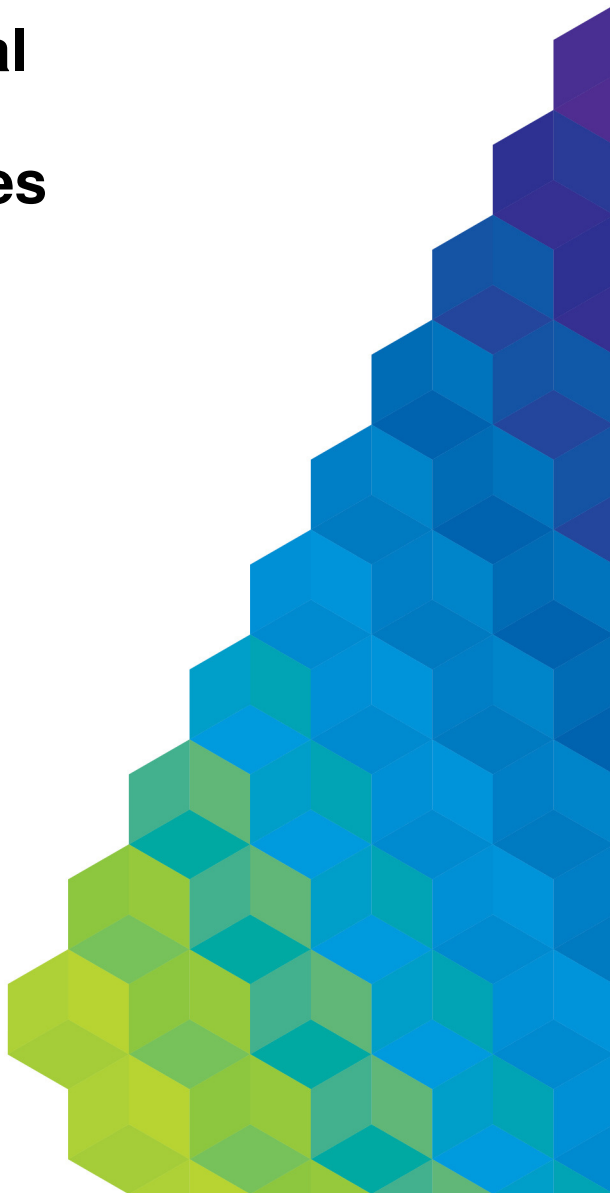
AusNet Electricity Services Pty Ltd

Electricity Distribution Price Review 2016-20

Revised Regulatory Proposal

Chapter 5: Incentive Schemes

Submitted: 6 January 2016



Chapter 5: Incentive Schemes

This chapter sets out AusNet Services' response to the Australian Energy Regulator's (AER's) Preliminary Decision with respect to the national and jurisdictional incentive schemes applying to AusNet Services in the 2011-15 and current regulatory control periods.[1] These schemes are the:

- Service Target Performance Incentive Scheme (STPIS);
- Efficiency Benefit Sharing Scheme (EBSS);
- Capital Expenditure Sharing Scheme (CESS);
- F-Factor Scheme; and
- Demand Management Incentive Scheme (DMIS).

The AER's Preliminary Decision with respect to these schemes is set out in Attachments 9 (EBSS), 10 (CESS), 11 (STPIS), 12 (DMIS) and 18 (F Factor Scheme) of the Preliminary Decision. AusNet Services' initial positions were set out in Chapter 10 of the Regulatory Proposal.

In the event of inconsistency between information contained in this chapter and AusNet Services' Initial Regulatory Proposal, the information contained in this chapter prevails.

5.1 Introduction

In summary, the Revised Proposal:

- Includes some revisions to aspects of the STPIS to address a combination of new information and errors in the Preliminary Decision;
- Includes a $28.4 million EBSS carryover amount, up from the Preliminary Decision's $14 million, largely due to the correction of an incorrect adjustment for movements in provisions made in the Preliminary Decision;
- Accepts the AER's Preliminary Decision on the F-Factor Scheme and the CESS; and
- Proposes a $10 million Demand Management Incentive Allowance (DMIA), following strong stakeholder support.

The AER's intention to apply the complete suite of incentives in Victoria is fully supported.

The remainder of this chapter is structured as follows:

- Section 5.2 sets out AusNet Services' response to the STPIS;
- Section 5.3 sets out AusNet Services' response to the EBSS;
- Section 5.4 sets out AusNet Services' response to the CESS;
- Section 5.5 sets out AusNet Services' response to the F-Factor Scheme; and
- Section 5.6 sets out AusNet Services' response to the DMIS.

The information set out in this chapter accords with all the applicable requirements of the National Electricity Rules (NER).

[1] The current regulatory control period refers to the period that commenced 1 January 2016.

5.2 Service Target Performance Incentive Scheme

AusNet Services rejects the AER's proposed application of the STPIS on the ground that it fails to:

- Reflect the lower value of customer reliability (VCR) on the STPIS performance targets; and
- Exclude events outside of AusNet Services' control including load interruptions caused by the use of rapid earth fault current limiting (REFCL) devices.

Further, as acknowledged by the AER in a letter to AusNet Services dated 10 November 2015, AusNet Services' incentives rates for the current regulatory control period require recalculation due to an error in the Preliminary Decision.

5.2.1 Preliminary Decision

In its Preliminary Decision, the AER applied the STPIS to AusNet Services for the 2016-20 regulatory period based on the following parameters:

- Set the revenue at risk at ±5 per cent;
- Segmented AusNet Services' network according to feeder categories including CBD, urban, short and long rural;
- Applied reliability of supply parameters of:
  - SAIDI targets at 81.860 for urban, 188.504 for short rural and 234.597 for long rural;
  - SAIFI targets at 1.105 for urban, 2.299 for short rural and 2.838 for long rural;
  - MAIFI targets at 2.799 for urban, 5.830 for short rural and 11.380 for long rural; and
  - A customer service telephone answering parameter of 80.33;
- Set performance targets based on AusNet Services' average reliability performance over the past five regulatory years;
- Set a beta of 2.8 to calculate the major event days (MED) boundary;
- Applied the methodology indicated in the national STPIS for excluding specific events from the calculation of annual performance targets; and
- Applied the latest VCR for Victoria to the calculation of incentive rates.[2]

In its Preliminary Decision, the AER did not modify AusNet Services' STPIS performance targets to reflect the lower VCR on the basis that:

1. There has been no net movement in the VCR between previous regulatory periods for the purpose of setting the STPIS rates;
2. There is limited co-relation between the VCR and AusNet Services' reliability outcomes; and
3. AusNet Services did not seek an upward adjustment to tighten the STPIS targets for the 2011-15 regulatory period when the VCR increased.[3]

Further, the AER did not accept AusNet Services' proposed exclusion for load interruptions caused by non-network solutions programs.

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2 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 11 – STPIS*, October 2015, p. 7.

3 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 11 – STPIS*, October 2015, p. 17.

5.2.2 Response to Preliminary Decision

The AER's Preliminary Decision in respect of the STPIS is flawed because it:

- Rejects modifications to AusNet Services' performance targets to reflect a lower VCR; and
- Miscalculates AusNet Services' incentive rates and the closure of the ESCV scheme.

Additionally, AusNet Services is proposing to include an additional exclusion to address the mandated use of REFCL devices on high bushfire risk days due to amendments to the *Electricity Safety (Bushfire Mitigation) Regulations 2013* which will apply in the 2016-20 regulatory control period.

(1) Modifications to the STPIS performance targets to reflect the lower VCR

The STPIS is aimed at ensuring that the DNSP's operational and investment strategies are consistent with customers' value for the services that are offered to them. As acknowledged by the AER, the STPIS provides an incentive for distributors to invest in reliability improvements where customers are willing to pay for it.[4]

The AER rejected AusNet Services' modifications to its performance targets to account for the lower VCR for capex planning purposes on the grounds that:

- There has been no net movement in the VCR between previous regulatory periods for the purpose of setting the STPIS rates;
- There is limited or no clear co-relation between the VCR and AusNet Services' reliability outcomes; and
- AusNet Services did not seek an upward adjustment to tighten the STPIS targets for the 2011-15 period when the VCR increased.[5]

AusNet Services strongly disputes these assertions.

In 2014, AEMO carried out a review of the VCR, which resulted in a reduction of the Victorian composite VCR by approximately 40 per cent, from $63.09 per kWh ($2014) to $39.50 per kWh ($2014).[6] In the 2011-15 period the VCR used to set AusNet Services' STPIS incentives rates was $54.92 per kWh ($2014).[7]

The AER based the STPIS performance targets for the 2011-15 period on AusNet Services' average reliability performance over the past five regulatory years. Following the review of the VCR, customers have signalled that the value of reliability is lower, and subsequently AusNet Services' historic five-year average reliability performance is not reflective of the current value of reliability.

The AER used the reduced VCR to assess AusNet Services' capital expenditure programs in the 2016-20 regulatory control period but has not reflected the lower VCR in the STPIS incentive targets. This will lead to distortions in the incentive framework applied to AusNet Services in the current regulatory control period. An unbalanced incentive framework is not in the long term interests of consumers. Further, if the incentive rates reflect the revised VCR, but the STPIS targets do not, the incentive scheme itself is inherently inconsistent.

The regulatory incentives framework applied to AusNet Services in the current regulatory control period should be balanced and proportional and therefore reflect how the VCR impacts capital expenditure and, consequently, reliability.

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4 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 11 - STPIS*, October 2015, p. 11.

5 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 11 - STPIS*, October 2015, p. 17.

6 Australian Energy Market Operator , *2013–14 Value of Customer Reliability (VCR) Review – Final Report*, September 2014.

7 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 11 - STPIS*, October 2015, p. 16.

The AER's Better Regulation Guideline acknowledges that the incentives framework for distributors:[8]

> *"…encourages network businesses to make efficient decisions. They give network businesses an incentive to pursue efficiency improvements in opex and capex, and to share them with consumers."*

Incentives for forecast operating and capital expenditure should be balanced with the incentives under the STPIS. The AER has recognised that the STPIS and the expenditure forecast outcomes collectively encourage businesses to make efficient decisions on when and what type of expenditure to incur, in order to meet service reliability targets.[9]

In the 2016-20 regulatory control period, AusNet Services' capital expenditure forecasts have been amended to reflect the lower VCR. If AusNet Services is expected to maintain historic levels of reliability due to a STPIS that reflects a historic and higher VCR, the AER would need to be cognisant of the inherent trade-off and forecast an increase in capital expenditure to deliver these outcomes.

In a recent submission to the AER, the Victorian Government highlighted to the AER the need for consistency in the regulatory incentives applied to distributors. In its submission, the Victorian Government stated:[10]

> *"The AER needs to ensure that the targets for the STPIS are consistent with the expenditure forecasts that are provided. If the AER provides expenditure to maintain reliability, then the [STPIS] targets should not be adjusted and the DNSPs should be penalised for any reduction in reliability through the STPIS. If the AER does not provide expenditure to maintain reliability as a result of the lower VCR, then the [STPIS] targets should be adjusted accordingly."*

The AER has not provided expenditure to maintain reliability due to the revised VCR. As such, the STPIS targets should be modified to reflect the lower VCR.

The AER contends there is no correlation between the VCR and reliability. AusNet Services strongly disputes this position. As AusNet Services explained in its regulatory submission, the revised VCR impacts both the expenditure proposed and the expected reliability relative to the historic average over the current regulatory control period. AusNet Services is expecting to defer 10 projects worth over $140 million ($2014) of capital expenditure as a result of applying the new VCR in its planning and risk assessments. AusNet Services has calculated that this deferral will result in an average decline on historic reliability performance of 3.24 minutes on SAIDI and 0.09 interruptions of SAIFI annually, at a network level.[11]

The AER is correct in stating that there has been no net movement in the VCR for the purposes of setting the STPIS rates between 2010 and the current regulatory control period. However, AusNet Services questions the relevance of the AER's statement. The AER has not recognised that the STPIS that applied in the 2006-10 regulatory control period was markedly different to the scheme that applied in the 2011-15 regulatory period. The STPIS administered by the ESCV applied for two regulatory control periods, including the 2006-10 period. In June 2008, the AER developed a STPIS, that applied to all Victorian distributors from 2011, which differed from the previous ESCV scheme.

(2) Miscalculation of AusNet Services' incentive rates

The AER has erred in the calculation of AusNet Services' STPIS incentive rates as follows:

- In a letter to AusNet Services dated 10 November 2015, the AER acknowledged that there is an error in the calculation of the incentive rates for AusNet Services in its Preliminary Decision. The AER stated that the incentive rates outlined in Attachment 11 of its

8 AER, *Expenditure Incentive Guideline*, November 2013.

9 AER, Final *Decision, Transmission Revenue Reset, SP AusNet 2014-17, Operating Expenditure*, p.103.

10 Department of Economic Development, Jobs, Transport & Resources, *Submission to Victorian electricity distribution pricing review (2016-20)*, July 2015, p. 10.

11 AusNet Services, *Electricity Distribution Price Review - Regulatory Proposal*, April 2015, p. 248.

Preliminary Decision were derived from AusNet Services' total energy consumption instead of average annual energy consumption. The STPIS outlines that the average annual energy consumption should be applied in calculating the AusNet Services' incentive rates. The AER has stated that it intends to correct for this error in its Final Decision.[12]

- Second, the AER calculated a common VCR to apply to all non-CBD distributors across all feeder types of approximately $39/kWh. AusNet Services contends that this overstates the VCR in AusNet Services' network, due to AusNet Services' higher proportion of residential customers relative to the rest of Victoria.[13] The AER's approach to calculating VCR also does not take into account differences in VCR at the feeder type level (urban, rural short, rural long). This means the same VCR is applied to all feeder types in the incentive rates calculation, despite differences in the mix of customer types at the urban and rural level. This results in outcomes under the STPIS that do not reflect the true VCR for specific parts of the network. AusNet Services considers that incentive rates in the STPIS should be calculated on the basis of each DNSP's network characteristics. In its Initial Proposal, AusNet Services outlined the following VCRs at the feeder type level, which were derived from the AEMO VCR results and AusNet Services' network characteristics:
  - Urban feeders: $37.01/kWh;
  - Short rural feeders: $35.67/kWh; and
  - Long rural feeders: $37.32/kWh.
- Further, the AER has erred in its calculation of the close-out of the previous ESCV S-factor scheme by using forecast 2013 revenue set out in the 2013 tariff submission, rather than actual 2013 revenue as per AusNet Services' submitted regulatory accounts. The AER's use of forecast revenue has resulted in a downward adjustment to AusNet Services' revenue requirement that is $0.18 million more than it would be if actual 2013 revenue was used.

(3) The exclusion of the mandatory use of REFCL devices

In light of the Victorian Government's proposed amendments to AusNet Services' bushfire mitigation obligations, AusNet Services is proposing an additional modification to the STPIS for the use of REFCL devices.

The STPIS requires that the AER exclude any load interruptions caused by:[14]

> *"…the exercise of any obligation, right or discretion imposed upon or provided for under jurisdictional electricity legislation or national electricity legislation applying to a DNSP."*

On 17 November 2015, the Victorian Government released a Regulatory Impact Statement (RIS) for proposed amendments to the *Electricity Safety (Bushfire Mitigation) Regulations 2013* which aim to reduce the likelihood that electricity distribution powerlines start bushfires. These amendments require AusNet Services to include in its Bushfire Mitigation Plan details of the preventative strategies and programs it will implement to enhance the protection for certain powerlines in the highest consequence bushfire risk areas within its network area, including how it will ensure high voltage powerlines in high bushfire risk areas have the ability to reduce the energy produced within specified timeframes.

Although the draft regulations are intentionally technology neutral, the RIS acknowledges there is currently only a limited range of technologies that will enable distributors to meet their new

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12 Letter from Chris Pattas dated 10 November 2015, *Error in the 2016-20 distribution determination for AusNet Services regarding STPIS*, Reference # 57379.

13 The residential VCR is much lower than any other class of customer.

14 AER, *Electricity distribution network service providers – Service target performance incentive scheme*, November 2009, p. 12.

obligations.[15] Presently, distributors will be required to install REFCL devices to achieve the high voltage reduction capability on its polyphase powerlines. In the circumstances where the REFCL devices will be utilised, on the highest risk days in the highest bushfire risk areas, AusNet Services' priority is reducing bushfire risk and ensuring the safety of Victorians. Based on analysis undertaken by the CSIRO, the use of REFCL devices has been proven to significantly reduce voltage in the event of phase-to-ground faults, leading to an estimated reduction in bushfire risk of up to 60%.[16]

AusNet Services supports the introduction of technologies to reduce bushfire risk and promote public safety. However, given the supply interruptions that the use and activation of REFCLs can give rise to, AusNet Services proposes to modify the STPIS to exclude any interruptions to supply caused by the use of REFCL devices. The utilisation of the REFCL devices will be in accordance with AusNet Services' revised Bushfire Mitigation Plan, accepted by ESV.

This proposed exclusion for the operation of REFCL devices would be similar to the current exclusion in calculating the MAIFI relating to interruptions caused by the operation of automatic reclose devices.[17]

5.2.3 Revised Proposal

As explained by the AER, the STPIS is designed to ensure that increases in efficiency are not at the expense of service performance for customers.[18]

AusNet Services considers that the AER has erred in its application of the STPIS including by not reflecting customers' current value of reliability in AusNet Services' performance targets.

AusNet Services proposes STPIS targets that reflect the lower VCR, exclude load interruptions caused by the use of REFCL devices, and include incentive rates that reflect AusNet Services' network characteristics.

5.3 Efficiency Benefit Sharing Scheme

AusNet Services rejects the Preliminary Decision's EBSS carryover amount of $14 million on the grounds that it includes an incorrect adjustment for movements in provisions. AusNet Services submits a carryover amount of $28.4 million.

5.3.1 Preliminary Decision

In its Preliminary Decision, the AER approved a carryover amount of $14 million from the application of the EBSS in the 2011-15 regulatory control period.[19] This compared to AusNet Services' proposed carryover of $25.7 million.

The reduction of $11.7 million was due to the AER:

- Amending AusNet Services' proposed movements in provisions adjustment to remove alleged double counting;
- Adjusting AusNet Services' actual operating expenditure to remove costs associated with RIN compliance; and

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15 Department of Economic Development, Jobs, Transport and Resources, *Regulatory Impact Statement for the Bushfire Mitigation Regulations Amendment,* November 2015, p. 46.

16 Department of Economic Development, Jobs, Transport and Resources, *Regulatory Impact Statement for the Bushfire Mitigation Regulations Amendment,* November 2015, p. 57.

17 AER, *Electricity distribution network service providers – Service target performance incentive scheme*, November 2009, p. 22.

18 AER, *Electricity distribution network service providers – Service target performance incentive scheme*, November 2009, p. 3.

19 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 9 – Efficiency benefits sharing scheme*, October 2015, p. 6.

- Applying a different approach to calculating inflation for the purposes of converting actual and forecast opex to real 2015 dollars.

The AER accepted AusNet Services' proposed exclusions for the current regulatory period, including: GSL payments, the DMIA operating expenditure, and debt raising costs.[20]

The AER also proposed to exclude losses on the disposal of assets on the basis that Victorian distributors should not be rewarded or penalised for accounting adjustments.

5.3.2 Response to Preliminary Decision

AusNet Services does not accept the Preliminary Decision carryover amount of $14 million on the basis that the AER's movements in provisions adjustment has been applied incorrectly and that the AER has not calculated inflation consistently with the inflation measure set out in the 2011-15 determination.

AusNet Services accepts the AER's adjustment to 2014 operating expenditure to remove RIN compliance costs.

AusNet Services accepts the AER's proposed exclusions of GSL payments, DMIA operating expenditure and losses on scrapping of assets, but does not accept the exclusion of debt raising costs as it is proposing to forecast these costs on a revealed cost basis as part of base year operating expenditure.

Movements in provisions

The AER concluded that by excluding movements in provisions for defined benefits from the carryover amounts, AusNet Services excluded provisions for superannuation for defined benefits schemes twice: the first time when it reversed movements in provisions attributable to operating expenditure, and the second time when it excluded expenditure on superannuation for defined benefits schemes as a cost category.

The AER's calculation of the carryover amount is in error for the following reasons:

- AusNet Services' superannuation provision represents the superannuation liability of the defined benefit superannuation funds of AusNet Services' employees **excluding** SPI Management Services Pty Ltd (SPIMS) employees.
- The "superannuation costs for defined benefits and retirement schemes" EBSS exclusion refers to payments made between AusNet Services' and SPIMS, to reflect changes in the balance of SPIMS' employees' defined benefit superannuation funds. These payments are **not** reflected in the movement of provisions.
- AusNet Services calculated the EBSS exclusion this way to ensure that double counting did not occur when AusNet Services' actual operating expenditure for EBSS purposes was determined for the 2011-15 regulatory period when, among other things, superannuation costs for defined benefits and retirement schemes and movements in provisions – including the superannuation provision – were removed from actual operating expenditure.
- Therefore, the movements in provisions EBSS adjustment captures changes in the balance of the superannuation provision for AusNet Services' employees, while the "superannuation costs for defined benefits and retirement schemes" EBSS exclusion captures costs relating to the superannuation funds of SPIMS employees.

Accordingly, there is no double counting between these two adjustments. By excluding changes in the balance of the superannuation provision for AusNet Services' employees from its movements in provisions adjustment, the AER is understating the actual movements in provisions that occurred

[20] AusNet Services' Initial Proposal considered that debt raising costs should be excluded from the EBSS if they are forecast using the AER's benchmark approach.

during the 2011-15 period and incorrectly calculating actual operating expenditure for EBSS purposes.

AusNet Services has therefore removed movements in provisions from its actual 2011-14 opex in a manner consistent with its Initial Proposal.

Inflation approach

The calculation of the EBSS carryover amount requires actual and forecast opex to be converted from nominal and 2010 dollars, respectively, to 2015 dollars. AusNet Services' Initial Proposal used September Quarter CPI on a lagged basis.

However the AER's approach in the Preliminary Decision arbitrarily uses June Quarter CPI on an unlagged basis to calculate the annual inflation amounts required for this conversion without explaining why this is a superior approach. The AER's approach is also inconsistent with the approach it applied in the EBSS calculation for the 2006-10 period.

AusNet Services' distribution determination for the 2011-15 regulatory control period states that the inflation measure used in the price control formula is calculated as follows:[21]

> *"The Consumer Price Index, All Groups Index Number (weighted average of eight capital cities) published by the Australia Bureau of Statistics for the September Quarter immediately preceding the start of regulatory year t;*
>
> *divided by*
>
> *The Consumer Price Index, All Groups Index Number (weighted average of eight capital cities) published by the Australia Bureau of Statistics for the September Quarter immediately preceding the start of regulatory year t-1;"*

The determination stipulates that the same CPI measure be used for RAB indexation.[22]

To ensure consistency with the 2011-15 determination, September Quarter CPI on a lagged basis is the correct inflation measure to convert actual and forecast opex to real 2015 dollars for EBSS calculations.

The use of any other measure will calculate an EBSS carryover amount on an inconsistent basis with the inflation embedded in AusNet Services' prices and revenues for the same period. Where differences exist between the inflation value used to calculate prices and revenue and that used to calculate the EBSS carryover, this inconsistency would result in a windfall gain or loss for AusNet Services.

The purpose of the EBSS is to incentivise DNSPs to make sustained efficiency gains. Regarding the EBSS applying to AusNet Services for the 2011-15 period, the AER considered that:[23]

> *"The EBSS is designed to ensure a DNSP facing a potential efficiency gain does not perceive a material advantage in either deferring or advancing an efficiency gain or loss, but rather that it faces an essentially constant benefit or cost from implementing a gain or loss as it arises. The measurement of gains and losses should not be artificially affected by, for example, shifting costs between years. Rather, it should represent genuine business outcomes that have arisen in the ordinary course of conducting the business in a prudent and diligent manner."*

The Preliminary Decision's use of a different indexation method to what was set out in the 2011-15 determination effectively changes a design principle of the scheme ex-post. Mechanically, it affects the carryover calculation such that it does not result in a carryover amount that fully reflects "genuine business outcomes". Such an approach does not align with the AER's stated objectives of the scheme, nor honour the regulatory compact which the 2011-15 EDPR decision established.

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21 AER, *SPI Electricity Pty Ltd Distribution Determination,* September 2012, p. 11.

22 Ibid, p. 23.

23 AER, *Electricity distribution network service providers – efficiency benefit sharing scheme*, June 2008, p. 4.

On the other hand, the use of September Quarter, lagged CPI will ensure the EBSS calculation rewards/penalises only efficiency gains/losses and is therefore consistent with the scheme objectives. Importantly, this approach ensures that the regulatory compact enshrined in the determination, which is a central plank of effective incentive based regulation, is upheld.

Finally, the use of a June Quarter CPI series for indexation in the EBSS is clearly inconsistent with the use of September Quarter CPI in critical components of the revenue determination, such as the indexation of the RAB, net capex and depreciation. It is also inconsistent with the Preliminary Decision's opex forecast, which converted base year opex to 2015 dollars using December Quarter CPI on an unlagged basis (i.e. using forecast 2015 inflation), as discussed in Chapter 4: Operating and Maintenance Expenditure.

In contrast, AusNet Services' approach is internally consistent with these critical elements of the building blocks, as well as with the method used in the price control mechanism.

This Revised Proposal therefore maintains the use of a one-year lagged inflation series using September Quarter CPI for EBSS calculations.

Excluded costs

AusNet Services accepts the EBSS exclusions set out in the Preliminary Decision, with the exception of debt raising costs, which it is proposing to forecast on a revealed cost basis as part of base year operating expenditure (discussed in Chapter 4: Operating and Maintenance Expenditure).

5.3.3 Revised Proposal

For the reasons set out above, AusNet Services is proposing an EBSS carryover amount of $28.4 million. The $14.4 million increase on the Preliminary Decision reflects:

- The correction of the AER's movements in provisions adjustment to ensure it includes all movements in provisions; and
- The calculation of inflation on a consistent basis with the AER's determination for the 2011-15 regulatory control period.

The table below shows AusNet Services' revised EBSS carryover amount by year.

Table 5.1: EBSS carryover amounts ($m, real 2015)

	2016	2017	2018	2019	2020	Total
EBSS carryover amounts	25.2	-4.5	-5.4	13.2	0.0	**28.4**

Source: AusNet Services

AusNet Services' proposed exclusions are:

- GSL payments;
- DMIA operating expenditure; and
- Losses on scrapping of assets.

Should the AER set debt raising costs using its benchmark methodology, AusNet Services proposes that these costs are excluded from the EBSS calculation.

5.4 Capital Expenditure Sharing Scheme

5.4.1 Preliminary Decision

The AER's Preliminary Decision is to apply the CESS consistent with the AER's capital expenditure incentive guidelines to AusNet Services in the 2016-20 regulatory control period.

5.4.2 Response to Preliminary Decision

AusNet Services accepts the AER's decision with respect to the CESS.

5.5 F-Factor Scheme

5.5.1 Preliminary Decision

The Preliminary Decision accepted AusNet Services' proposed approach of setting an F-factor target based on an historical five-year average and approved a target of 185.8, based on the average annual number of fire starts from 2010 to 2014. The AER accepted AusNet Services' proposed incentive rate of $25,000 per fire start.

5.5.2 Response to Preliminary Decision

AusNet Services accepts the AER's Preliminary Decision, subject to any changes to the F-factor scheme resulting from the Victorian Government's current review of the scheme. Should the Government's review result in changes to the scheme, AusNet Services considers that the AER should consult with the distributors on these changes before setting targets and incentive rates to apply for the current regulatory control period.

5.6 Demand Management Incentive Scheme

AusNet Services rejects the Preliminary Decision's DMIA of $3 million for the 2016-20 regulatory period on the basis that it does not provide sufficient incentives for innovation to allow the efficient deferral of capital expenditure. In line with stakeholders' support for an increased DMIA in the current period to address the lack of incentives in the existing framework to invest in non-network solutions, AusNet Services proposes an allowance of $10 million for the 2016-20 regulatory period.

5.6.1 Preliminary Decision

The AER rejected AusNet Services proposed DMIA of $10 million for the regulatory period, instead maintaining the 2011-15 period's allowance of $3 million.

The Preliminary Decision states that it would be inappropriate to increase the DMIA in parallel with the development of the new DMIS, which the AER must finalise by 1 December 2016. The AER has stated its intent to make changes to the scheme at a whole-of-industry level as part of the development of the new DMIS, rather than for individual distributors. The AER's Preliminary Decision also contends that the move to a revenue cap has removed any disincentive to reduce energy sold by implementing demand management initiatives.[24]

5.6.2 Response to Preliminary Decision

The new DMIS will introduce an actual incentive (reward) for businesses to undertake demand management and distributed generation, as opposed to cost recovery under the DMIA. However, the AEMC's Final Rule Determination, in agreement with the AER's submission to the Rule Change,

[24] AER, *AusNet Services Preliminary Decision 2016-20, Attachment 12 – Demand Management Incentive Scheme*, October 2015, p. 9.

removed the ability for DNSPs to opt into the new incentive scheme during a regulatory control period.[25] As such, AusNet Services is locked out of a more progressive DMIS until 2021.

In light of this, an expanded DMIA is necessary to continue to drive innovation in non-network solutions in Victoria. Accordingly, AusNet Services proposed an expansion of the DMIA to $10 million for the 2016-20 regulatory period, to enable planned non-networks projects to be undertaken.

Expanding the DMIA is consistent with the Revenue and Pricing Principles as set out in the *National Electricity Act 1996*. Specifically, expanding the DMIA gives distributors the necessary incentives to promote economic efficiency in the provision of direct control network services particularly in relation to undertaking efficient network investment and the efficient provision of services.[26] The Revenue and Pricing Principles also require regard to be had to the economic costs and risks of over or under investment.[27] By expanding the DMIA, a distributor is given the opportunity to trial new technologies and approaches that will promote efficient network investment in the future, including by providing greater flexibility and choice in non-network solutions that would defer capex.

An increased allowance in the 2016-20 period also promotes the achievement of the NEO by improving reliability at cost that is (likely to be) lower than a capital expenditure project to achieve the same result.[28] There are also non-economic benefits associated with developing new, innovative non-network solutions which are in the long-term interests of end users (for example, improving customer awareness of, and participation in the market, and increased consumer choice of demand management solutions).

The AER's rejection of the expansion in the Preliminary Decision means that there will be insufficient incentives for innovation and R&D during the 2016-20 regulatory period.

The AEMC in a recent rule change determination to strengthen the existing DMIS recognised the inherent issues with the current scheme, including that:[29]

> *"…distribution businesses have no financial incentive to factor in the broader market benefits from non-network options and they may have limited incentives to trial new non-network option".*

The AEMC also stated that the innovation allowances under the DMIS to date have been modest and potentially too limited in scope to genuinely encourage experimentation and innovation with new demand management methods.[30]

The COAG Energy Council also recognised the need to:[31]

> *"…strengthen the incentives for distribution businesses to undertake demand management projects that deliver a net benefit to consumers".*

The AER's Preliminary Decision does not provide sufficient incentives for innovation and R&D projects which are aimed at proving technologies that may facilitate the efficient deferral of capital expenditure over the long term.

The NER requires the AER to have regard to the willingness of customers and end users to pay for increases in costs resulting from the implementation of the scheme.[32] AusNet Services notes that many stakeholders showed strong support for an increased DMIA in the 2016-20 regulatory period to address the lack of incentives in the existing framework to invest in non-network solutions. The Victorian Greenhouse Alliance submitted that the AER should consider the efficient costs for

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25 AEMC 2015, *Demand Management Incentive Scheme, Rule Determination*, August 2015, Sydney.

26 *National Electricity (South Australia) Act 1996*, Section 7A(3).

27 *National Electricity (South Australia) Act 1996*, Section 7A(6).

28 *National Electricity (South Australia) Act 1996,* Section 7.

29 AEMC 2015, *Demand Management Incentive Scheme, Rule Determination*, August 2015, Sydney, p. i.

30 Ibid, p. 4.

31 Ibid, p. 1.

32 Clause 6.6.3(b)(5).

consumers through the application of an appropriate DMIS allowance and provide support for other forms of demand management expenditure where there is a compelling business case.[33] The Victorian Greenhouse Alliance also supported AusNet Services' $10 million allowance proposed for the 2016–20 regulatory control period:[34]

> *"AusNet Services' DMIS allowance proposal is reasonable given the types of activities proposed by the business".*

Stakeholders have highlighted to the AER the importance of ensuring the DMIA supports R&D in demand management during the 2016-20 regulatory control period. The Victorian Government has publicly supported early stage R&D on demand management initiatives, subject to any funding being consistent with the objectives of the DMIA.[35] AusNet Services believes the $10 million allowance proposed is consistent with the objectives of the DMIA.

AusNet Services, in its Initial Proposal, provided details of six demand management initiatives it would undertake during the 2016-20 regulatory control period following the modest increase in the DMIA[36], including:

1. **Residential peak demand incentives** – investigating the use of financial and non-financial incentives to alter the voluntary behaviour of residential customers such that their consumption of electricity at times of critical peak demand is reduced.
2. **Residential air-conditioning load control** – trial involving the voluntary remote control of residential air-conditioners, via the smart meter communications network, to occasionally reduce power consumption at times of network peak demand.
3. **Management and Automation Platform for C&I Demand Response** – project aimed at driving efficiencies in AusNet Services' Commercial & Industrial (C&I) customer demand management program and to increase the level of reliability in customer response.
4. **Commercial-scale aggregation of residential battery storage** – trial of a large-scale deployment of residential battery storage systems on a single 22kV distribution feeder.
5. **Mini grid or RAPS deployment for remote community** – trial project including funding the installation of mini grid components to allow observation of the behaviour of such a system together with significant community collaboration and input to test the acceptability of such an approach.
6. **Thermal storage to manage C&I cooling loads** – trial of a thermal storage system as an alternative to battery storage to shift the cooling loads of a large commercial or industrial customer from peak to off-peak times.

While a revenue cap protects AusNet Services from the impact of reduced energy sales driven by demand management initiatives, it does not remove the barriers that exist to investment in R&D and novel technologies. These barriers exist because, in a regulated environment, the benefit of the R&D is truncated as expenditure incentives operate over a five year period.

Many R&D investments involve longer payback periods (e.g. residential battery storage trial), and higher levels of uncertainty around project benefits than more traditional cost saving initiatives (e.g. process improvements). These factors mean an innovation allowance is necessary to foster innovation in regulated sectors and provide new opportunities for distributors to make efficient investment decisions.

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33 Victorian Greenhouse Alliances, Submis*sion to the AER – Local Government Response to the Victorian Electricity Distribution Price Review (2016-20)*, July 2015, p. 26.

34 Victorian Greenhouse Alliances, Submis*sion to the AER – Local Government Response to the Victorian Electricity Distribution Price Review (2016-20)*, July 2015, p. 27.

35 Department of Economic Development, Jobs, Transport & Resources, *Submission to Victorian electricity distribution pricing review (2016-20)*, July 2015, p. 13.

36 AusNet Services, *Electricity Distribution Price Review - Regulatory Proposal*, April 2015, p. 233.

Finally, the results of these trials, which are customer funded, are made available to the industry and stakeholders, ensuring the societal benefit is shared rather than retained by the business.

5.6.3 Revised Proposal

Given the support shown by stakeholders for increased DMIA funding, the barriers to R&D investment inherent in the existing regulatory regime, the "use it or lose it" nature of the allowance and the length of time until the new DMIS applies in Victoria, the AER's position of maintaining an extremely modest DMIA risks curbing the development of innovative demand management techniques which have the potential to create long-term benefits for consumers.

In line with stakeholder support for an increased DMIA to address the lack of incentives in the existing framework to invest in non-network solutions, AusNet Services proposes an allowance of $10 million for the 2016-20 regulatory control period.

The Revised Proposal for the DMIA is shown in the table below.

Table 5.2: Proposed DMIA ($m, real 2015)

	2016	2017	2018	2019	2020	Total
DMIA	1.5	2.0	2.5	2.5	1.5	**10.0**

Source: AusNet Services

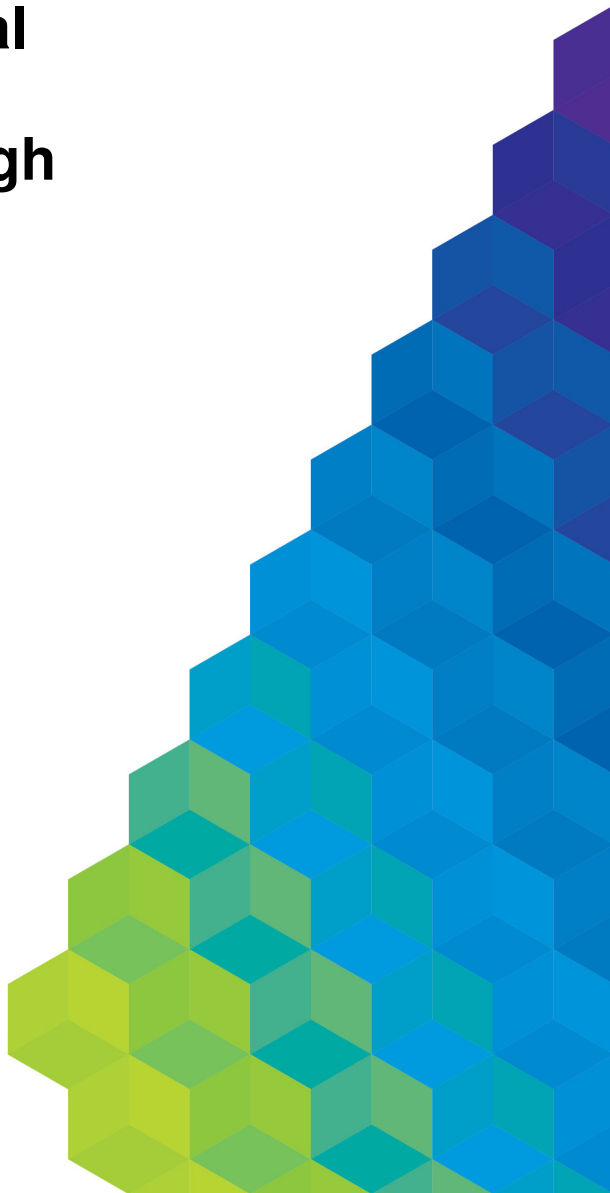
AusNet Electricity Services Pty Ltd

Electricity Distribution Price Review 2016-20

Revised Regulatory Proposal

Chapter 6: Cost Pass Through

Submitted: 6 January 2016



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Chapter 6: Cost Pass Through

This chapter sets out AusNet Services' response to the Australian Energy Regulator's (AER's) Preliminary Decision with respect to cost pass through events, as set out in Attachment 15 of the Preliminary Decision. AusNet Services' initial positions were set out in Chapter 11 of the Regulatory Proposal.

In the event of inconsistency between information contained in this chapter and AusNet Services' Initial Proposal, the information contained in this chapter prevails.

6.1 Introduction

The AER approved the following nominated cost pass through events proposed by AusNet Services:

- Insurance cap event;
- Natural disaster event; and
- Terrorism event.

The AER rejected the Power of Choice nominated cost pass through event proposed by AusNet Services.

In summary, AusNet Services:

- Accepts the AER's decision with respect to the following nominated cost pass through events:
  - Insurance cap event;
  - Natural disaster event; and
  - Terrorism event.
- Proposes the following nominated cost pass through events:
  - Retailer insolvency event; and
  - Insurer credit risk event.

While AusNet Services is not proposing a nominated Power of Choice cost pass through event in this Revised Proposal, further discussion is provided in this chapter with respect to the recovery of Power of Choice costs during the current regulatory control period.[1]

The remainder of this chapter is structured as follows:

- Sections 6.2 to 6.4 deal with the insurance cap, natural disaster and terrorism events;
- Section 6.5 discusses the Power of Choice event; and
- Section 6.6 and 6.7 set out AusNet Services' proposed nominated cost pass through events.

The information set out in this chapter accords with all the applicable requirements of the National Electricity Rules (NER).

[1] The current regulatory control period refers to the period that commenced 1 January 2016.

6.2 Insurance Cap Event

6.2.1 Preliminary Decision

The AER corrected an incorrect reference to the regulatory control period in AusNet Services' proposed insurance cap event, but otherwise accepted the event as proposed by AusNet Services.

6.2.2 Response to Preliminary Decision

AusNet Services accepts the Preliminary Decision with respect to an insurance cap event.

6.3 Natural Disaster Event

6.3.1 Preliminary Decision

The Preliminary Decision accepted the natural disaster event as proposed by AusNet Services.

6.3.2 Response to Preliminary Decision

AusNet Services accepts the Preliminary Decision with respect to a natural disaster event.

6.4 Terrorism Event

6.4.1 Preliminary Decision

The Preliminary Decision accepted the terrorism event as proposed by AusNet Services.

6.4.2 Response to Preliminary Decision

AusNet Services accepts the Preliminary Decision with respect to a terrorism event.

6.5 Power of Choice Event

6.5.1 Preliminary Decision

The Preliminary Decision rejected the Power of Choice event proposed by AusNet Services.

The AER considered that the prescribed regulatory change and/or service standard events set out in the NER would cover the cost impacts of the Power of Choice rule changes and provided appropriate protection against the risks presented by these rule changes. The AER stated that:[2]

> *"The risk a number of rule changes will be made over a regulatory control period, some of which may not result in a material change in costs, is not unique to the Power of Choice review. Nor is the prospect that a rule change made in one year will be related to a change or changes in another."*

Therefore, the AER did not consider that a nominated pass through event was warranted simply because the materiality threshold applying to the prescribed events may preclude the recovery of costs below that threshold.[3]

2 AER (2015) *AusNet Services Preliminary Decision 2016-20, Attachment 15 – Pass through events*, October 2015, p. 14.

3 Ibid., p. 14.

The AER also rejected United Energy's proposed capital expenditure for Power of Choice, stating that:[4]

> *"Given the uncertainty that exists around the nature of the applicable regulatory obligations, the possible system changes required, and the quantum of costs which may be incurred, we are not satisfied that United Energy's forecasts reasonably reflect the efficient costs of a prudent operator or a realistic expectation of the cost inputs required to achieve the capex objectives. Further, where a rule change process has commenced, or is expected to commence, but has not yet concluded, we do not consider that possible capex associated with a future rule change is required to meet an applicable regulatory obligation or requirement."*

By not approving a nominated pass through event or including costs in expenditure forecasts, the Preliminary Decision left the prescribed pass through events as the only avenue available for DNSPs to recover these costs, despite acknowledging that Power of Choice rule changes may result in costs that do not meet the materiality threshold.

6.5.2 Response to Preliminary Decision

While AusNet Services accepts the AER's decision to not approve a nominated cost pass through event for Power of Choice, the Preliminary Decision creates a significant risk that solely relying on the specified pass through events will deny AusNet Services a reasonable opportunity to recover its efficient costs during the current period. To address this risk, AusNet Services is proposing ex ante expenditure to recover its forecast Power of Choice costs (discussed further in Chapter 3: Capital Expenditure and Chapter 4: Operating and Maintenance expenditure).

This section provides AusNet Services' views on the Preliminary Decision's approach to Power of Choice cost recovery.

One reform package, separate rule changes

As part of the implementation of the Power of Choice review, a number of energy market reform work streams are underway. The reforms, which are largely aimed at increasing the choices and information available to customers with respect to their energy use, are having, and will continue to have, far-reaching ramifications for the electricity distribution sector and its customers.

To implement the Power of Choice reforms, a series of changes will be required to the NER. These changes have been divided into smaller work programs, resulting in the COAG Energy Council submitting multiple rule change requests to the AEMC. The AEMC is required, in consultation with industry and its stakeholders, to determine whether to proceed with the proposed rule change, and the scope and content the final rule will take. Final determinations have been made for some rule change proposals while others are underway or are yet to commence.

Importantly, the structure and timetabling of the Power of Choice program is such that the amendments to the NER are being made over a number of years, thereby necessitating separate, staged rule change requests. This is in contrast to other major industry reforms where the amendments to the NER were made in a single amending rule, or a suite of rules made simultaneously.[5] Furthermore, the scope of the changes contemplated by the various rule change proposals, and hence costs to distributors of implementation and compliance, vary widely. For instance, the costs of complying with the AEMC's new demand management and embedded generation connection incentive scheme are not significant, whereas the costs of implementing a contestable framework for metering services are expected to be substantial.

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4 AER (2015) *United Energy Preliminary Decision 2016-20, Attachment 6 – Capital expenditure*, October 2015, p. 109.

5 See, for example, the Economic Regulation of Network Service Providers Rule Change (2012) and the Economic Regulation of Transmission Services (2006). Although the initial Rules were made by the South Australian Minister, the suite of rules to implement the National Energy Customer Framework was also made as a single package.

The nature and structure of the Power of Choice work program creates challenges for distributors regarding the management and recovery of costs. The only avenues available to recover efficient capex and opex are the pass through mechanism, ex ante expenditure forecasts or a combination of both.

Appropriate cost recovery mechanisms

In its Initial Proposal, AusNet Services elected to use the pass through framework to recover its efficient costs arising from the Power of Choice reform program. It proposed a nominated pass through event and, as such, did not include any expenditure relating to the Power of Choice reforms in its capex or opex forecasts. In light of the uncertainty that existed at the time the proposal was submitted about the scope of the reforms and the costs necessary to implement and comply with new obligations, AusNet Services considered it was in the long term interests of consumers for it to seek recovery of prudent and efficient expenditure using the cost pass through mechanism.

AusNet Services acknowledged in its Initial Proposal that although rule changes made as part of Power of Choice may constitute regulatory change events, having to satisfy the materiality threshold for each rule change was likely to prevent AusNet Services from recouping the totality of the efficient costs it was entitled to recover. In AusNet Services' view, this a consequence of dividing the Power of Choice into separate, but interconnected, work streams each with their own rule change proposal. While the reforms collectively increase costs in excess of the materiality threshold,[6] the individual rule changes may not. AusNet Services' estimate of the cost impact (capex and opex) of Power of Choice during the current period is in excess of $50 million.

By rejecting AusNet Services' nominated cost pass through event and United Energy's ex ante capex, the Preliminary Decisions clearly signal to the Victorian DNSPs that the only avenue available to recover their efficient cost increases arising from the Power of Choice rule changes is through the prescribed pass through events.

Because the Power of Choice rule changes are being progressed consecutively, there are likely to be rule changes where AusNet Services' change in costs does not satisfy the materiality threshold regardless of the fact that the new regulatory obligations arise from a single, wider reform agenda. Requiring each rule change to be the subject of an individual pass through application (and therefore satisfy the materiality threshold each time) means there is a material risk that AusNet Services will incur efficient expenditure not allowed for in its approved expenditure but which it cannot otherwise recover. Forcing AusNet Services to rely solely on the prescribed pass through events will cause it to incur approximately $18 and $5 million in unfunded capex and opex, respectively, during the current period, based on the quantum and composition of the expenditure forecasts presented in Chapters 3 and 4.

The manner in which the Power of Choice reforms are given effect should not preclude AusNet Services from recovering the costs it incurs arising from those rule changes. The Preliminary Decision is inconsistent with the principle that AusNet Services should be provided with a reasonable opportunity to recover at least the efficient costs it incurs in providing direct control network services and complying with a regulatory obligation or requirement.[7]

Although the Preliminary Decision acknowledges that the Power of Choice rule changes are inter-related but that some may not result in a material change in costs and thus be unrecoverable, the AER dismisses these matters on the basis that they are not unique to the Power of Choice. However, AusNet Services is unaware of other industry changes of similar materiality and complexity with respect to timing, scope and cost that have been implemented in a similar, staged manner. It is noted that the Preliminary Decision also fails to cite any such examples.

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6 AusNet Services estimates its materiality threshold for the current regulatory control period is approximately $6 million.

7 Section 7A(2)(a), NEL.

Addressing cost recovery risk

AusNet Services is not proposing a nominated cost pass through event in this Revised Proposal. To address the risks created by the Preliminary Decision's rejection of the Power of Choice nominated pass through event, AusNet Services:

- Is proposing ex ante expenditure to fund Power of Choice rule changes where the available information is sufficiently certain to ensure a cost estimate that reasonably reflects the capex and opex criteria (discussed further in Chapter 3: Capital Expenditure and Chapter 4: Operating and Maintenance Expenditure); and
- Will rely on the prescribed cost pass through events to recover costs arising from the remaining rule changes.

AusNet Services is confident that this approach best contributes to the achievement of the NEO by striking an appropriate balance between the need to have a reasonable opportunity to recover the efficient costs it incurs arising from the Power of Choice reforms and the long-term interests of AusNet Services' customers.

6.6 Retailer Insolvency Event

6.6.1 Preliminary Decision

While AusNet Services did not propose a retailer insolvency event in its Initial Proposal, this event was proposed by the other Victorian DNSPs (albeit with varying definitions). In its Preliminary Decision for those DNSPs, the AER rejected the proposed definitions and approved the following alternative definition:[8]

> *"Prior to the commencement of the National Energy Customer Framework in Victoria, retailer insolvency event has the meaning set out in the NER as in force from time to time.*
>
> *Note: This retailer insolvency event will cease to apply as a nominated pass through event on commencement of the National Energy Customer Framework in Victoria."*

To ensure AusNet Services has access to the same protection in the event of a retailer failure as those distributors in jurisdictions where the National Energy Retail Law applies, the AER invited AusNet Services to propose a pass through event for retailer insolvency.

6.6.2 Response to Preliminary Decision

As directed by the AER, AusNet Services has had regard to the nominated retailer insolvency event approved by the AER for the other Victorian distributors, as set out above. AusNet Services has considered the AER's drafting and proposes some amendments to the retailer insolvency event definition.

The proposed definition is as follows:

> *"Until such time as the National Energy Retail Law set out in the Schedule to the National Energy Retail Law (South Australia) Act 2011 of South Australia is applied as a law of Victoria, retailer insolvency event has the meaning set out in the NER as in force from time to time, except that:*
>
> *(a) where used in the definition of 'retailer insolvency event' in the NER, the term 'retailer' means the holder of a licence to sell electricity under the Electricity Industry Act 2000 (Vic) or an exemption from the requirement to hold a licence to sell electricity under that Act; and*
>
> *(b) other terms used in the definition of retailer insolvency event in the Rules as a consequence of amendments made to that definition from time to time, which would otherwise take their meaning by reference to provisions of the NER or National Energy Retail Law not in force in*

[8] See, for example, AER, *Powercor Preliminary Decision 2016-20, Attachment 15 – Pass through events*, October 2015, p. 22.

Victoria, take their ordinary meaning and natural meaning, or their technical meaning (as the case may be).

For the purposes of this definition, the terms 'eligible pass through amount' and 'positive change event' where they appear in the NER are modified in respect of this retailer insolvency event in the same manner as those terms are modified in respect of the retailer insolvency event prescribed in the NER from time to time.

Note: This retailer insolvency event will cease to apply as a nominated pass through event on commencement of the National Energy Customer Framework in Victoria."

AusNet Services considers the proposed amendments maintain the policy objectives of a retailer insolvency pass through event but better reflect the legislative process for adopting the National Energy Customer Framework in Victoria. The proposed definition makes it clear that the retailer insolvency event will cease when the NECF is adopted, thereby removing any uncertainty about the legal effect of a note to the definition.

The proposed definition also ensures that, should the materiality threshold applying to the prescribed retailer insolvency event be removed by the AEMC in its final determination for rule change ERC0172, the nominated event applying to AusNet Services' during the current period will not be subject to a materiality threshold.

6.7 Insurer Credit Risk Event

6.7.1 Preliminary Decision

While AusNet Services did not propose an insurance credit risk nominated pass through event in its Initial Proposal, this event was proposed by the other Victorian DNSPs (albeit with varying definitions). In its Preliminary Decision for those DNSPs, the AER rejected the proposed definitions and approved an alternative definition.

6.7.2 Response to Preliminary Decision

AusNet Services considers the insurer credit risk event approved in the AER's Preliminary Decisions for the other Victorian DNSPs to be reasonable. Accordingly, the following insurer credit risk event nominated pass through event is proposed:

"An insurer credit risk event occurs if:

A nominated insurer of AusNet Services becomes insolvent, and as a result, in respect of an existing or potential insurance claim for a risk that was insured by the insolvent insurer, AusNet Services:

- *is subject to a higher or lower claim limit or a higher or lower deductible than would have otherwise applied under the insolvent insurer's policy; or*
- *incurs additional costs associated with funding an insurance claim, which would otherwise have been covered by the insolvent insurer.*

Note: In assessing an insurer's credit risk event pass through application, the AER will have regard to, amongst other things,

- *AusNet Services' attempts to mitigate and prevent the event from occurring by reviewing and considering the insurer's track record, size, credit rating and reputation.*
- *In the event that a claim would have been made after the insurance provider became insolvent, whether AusNet Services' had reasonable opportunity to insure the risk with a different provider."*

6.8 Application of Pass Through Provisions to Alternative Control Services

6.8.1 Preliminary Decision

The AER approved AusNet Services' proposal that nominated pass through events refer to 'direct control services' and that it may be therefore apply to pass through an increase (or decrease) in costs incurred in providing both standard and alternative control services.

6.8.2 Response to Preliminary Decision

AusNet Services accepts the Preliminary Decision with respect to the application of pass through provisions to both standard and alternative control services.

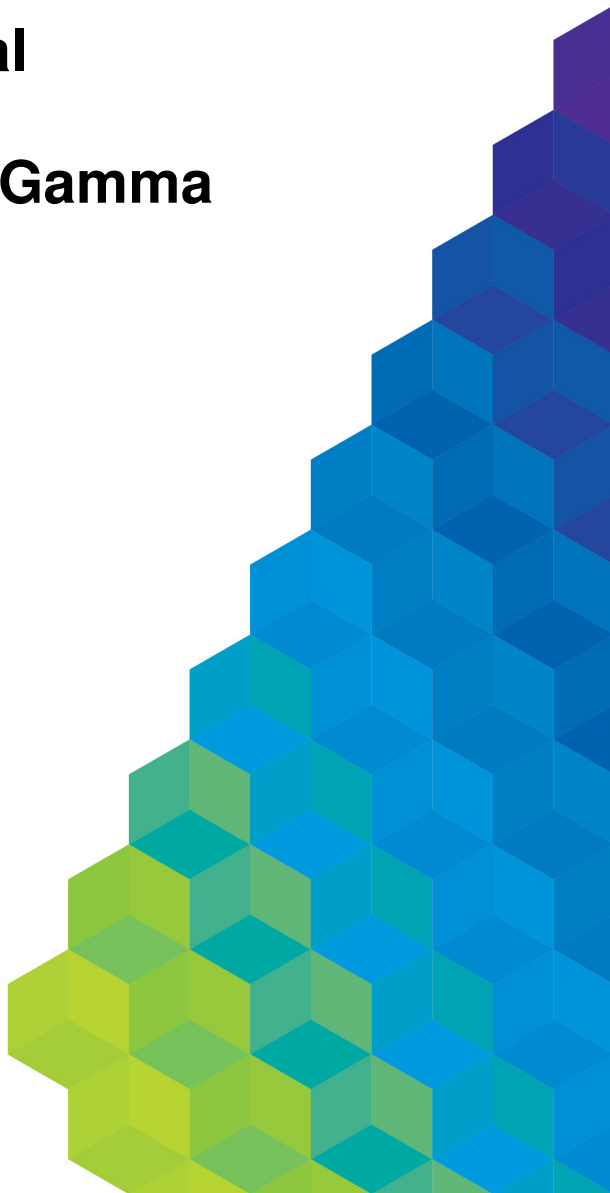
AusNet Electricity Services Pty Ltd

Electricity Distribution Price Review 2016-20

Revised Regulatory Proposal

Chapter 7: Rate of Return & Gamma

Submitted: 6 January 2016



Chapter 7: Rate of Return and the Value of Imputation Credits

This chapter sets out AusNet Services' response to the Australian Energy Regulator's (AER's) Preliminary Decision with respect to the Rate of Return, the Value of Imputation Credits, and Forecast Inflation as set out in Attachment 3.

AusNet Services' initial positions were principally set out in Chapter 12 – Return on Capital and Chapter 13 – The Value of Imputation Credits of the Initial Regulatory Proposal (Initial Proposal).

In the event of inconsistency between information contained in this chapter and AusNet Services' Initial Proposal, the information contained in this chapter prevails

7.1 Overview

This chapter of AusNet Services' submission on the Preliminary Decision addresses the allowed rate of return, the value of imputation credits (gamma) and the method for forecasting inflation. These topics are addressed together in this chapter because they each impact on the overall return to investors. Specifically:

- Under the National Electricity Rules (NER), the allowed rate of return is the post-tax return allowed to investors, calculated as a weighted average of the return on equity and return on debt;[1]
- Gamma represents the value of imputation credits to investors associated with the payment of company tax. This value effectively forms part of the overall return to equity investors; and
- Forecast inflation is used to adjust the cash flows to maintain a real rate of return framework. It thus has an important interrelationship with the rate of return, and impacts on the overall return to investors — it is akin to capital gains earned on an investment. If inflation is not properly forecast, the adjustment to cashflows may be too large (or too small) and thus investors may receive an overall return that is too low (or too high).

In order to promote the National Electricity Objective (NEO), the overall return to investors must be sufficient to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers. Critical to the promotion of efficient investment is that businesses be provided with a reasonable opportunity to recover efficient costs (i.e. the costs that would be incurred by an efficient business in a workably competitive market). This means that:

- The return on debt allowance must be such as to provide a reasonable opportunity to recover at least the efficient debt financing costs of a benchmark efficient entity (**BEE**) with a similar degree of risk as that which applies to AusNet Services in respect of the provision of standard control services;
- The return on equity allowance must reflect returns required by equity investors to invest in businesses facing a similar degree of risk;
- Gamma must reflect the value that equity-holders place on imputation credits (not simply their face value or utilisation rate). If the value of imputation credits is over-estimated, the overall return to equity-holders will be less than what is required to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers; and
- The inflation forecast must reflect market expectations of inflation over the regulatory period.

[1] NER, cl 6.5.2(d).

The Preliminary Decision does not provide for an overall return that is consistent with the NEO. For reasons set out in this chapter:

- The allowed rate of return is not commensurate with the efficient financing costs of a BEE with a similar degree of risk as that which applies to AusNet Services in respect of the provision of standard control services;
- The value of imputation credits is over-estimated, meaning that the reduction to the overall return to account for imputation credits is too large; and
- The AER's forecast of inflation is also over-estimated, meaning that the reduction to the overall return to account for expected indexation of the regulatory asset base is too large and otherwise does not reflect current market expectations.

7.1.1 Achieving the Rate of Return Objective

The allowed rate of return objective (ARORO) is the touchstone for estimating the allowed rate of return. The NER requires that:

- The return on equity for a regulatory period be estimated such that it contributes to the achievement of the ARORO;[2] and
- The return on debt for a regulatory year be estimated such that it contributes to the achievement of the ARORO.[3]

The ARORO is that the rate of return for a distribution network service provider (DNSP) is to be commensurate with the efficient financing costs of a BEE with a similar degree of risk as that which applies to the DNSP in respect of the provision of standard control services.[4]

As can be seen, the ARORO has two key elements:

- First, the ARORO requires identification of the level of risk that applies to the DNSP in respect of the provision of standard control services; and
- Secondly, the ARORO requires estimation of efficient financing costs for a BEE facing a similar degree of risk.

AusNet Services considers that the relevant level of risk is that faced by entities operating in a workably competitive market providing services similar to electricity distribution services within Australia. Therefore, in constructing comparator datasets for the purposes of estimating a rate of return that is commensurate with efficient financing costs of a BEE, these datasets should include entities that face a similar degree of risk to that faced in the provision of electricity distribution services. That is, they should not be restricted to regulated entities.

If AusNet Services is incorrect that the relevant level of risk is that faced by entities operating in a workably competitive market providing services similar to electricity distribution services within Australia, but rather, the relevant level of risk is that of a regulated energy network business, AusNet Services submits that the reference to 'efficient financing costs' in the ARORO is to costs incurred (and therefore financing practices adopted) in a workably competitive market to finance an investment with that risk profile.

That is, regardless of what the relevant degree of risk is, once this risk benchmark is established, the assessment of efficient financing costs requires consideration of what financing practices would be engaged in by businesses operating in a workably competitive market, facing the relevant degree of risk. Such an interpretation of the term 'efficient financing costs' in the ARORO is consistent with the object of regulation itself, which is to simulate competitive market outcomes. This is because it is

2 NER, cl 6.5.2(f).

3 NER, cl 6.5.2(h).

4 NER, cl 6.5.2(c).

ultimately competition that drives efficient behaviour and is the benchmark that the NEL seeks to replicate. The 'workably competitive market' concept is described in more detail in section 7.2.3.

Many of the issues dealt with in this chapter are the subject of applications for merits review of the AER's distribution determinations for the NSW electricity distributors (Ausgrid, Endeavour Energy, Essential Energy), the ACT electricity distributor (ActewAGL), and the NSW gas distributor (JGN) (NSW and ACT merits reviews). These issues include the approach taken by the AER to estimating the return on equity and the methodology to estimate the return on debt. The applications were heard in September and October 2015. The Tribunal has indicated that it will make a decision in early 2016. Once the decision of the Tribunal has been published, AusNet Services will review the decision and consider the implications, if any, of that decision for the determination the AER is required to make for AusNet Services. To the extent AusNet Services considers that the decision does have implications for its determination, AusNet Services will make any submissions to the AER on those implications as soon as practicable after the Tribunal's decision has been published and considered by AusNet Services.

7.1.2 Return on Debt

As became clear from the detailed consideration of the return on debt issue in the NSW and ACT merits review processes, the method that the AER proposes to adopt in its preliminary decision for estimating the return on debt will not deliver a return on debt estimate which contributes to the achievement of the ARORO and the NEO. The ARORO is concerned with the financing costs and practices that are efficient in the economic sense, that is, the financing costs incurred, and practices adopted, in a workably competitive market.

As set out below, AusNet Services submits that the debt management practice that would be expected absent regulation is the holding of a staggered portfolio of fixed rate debt, the cost of which can be estimated by the trailing average approach. Given the intent of regulation is to replicate, insofar as possible, the outcomes that would be expected in workably competitive markets, the efficient financing costs to be estimated pursuant to clause 6.5.2 of the NER are required to be estimated using the trailing average approach and this approach should be adopted without any transition (AER Option 4).

The AER's approach to transitioning to the trailing average estimation method will lead to a return on debt allowance for the 2016 regulatory period that is below the efficient financing costs of a BEE for that period. This is because:

- The AER's approach proceeds on the incorrect premise that the efficient financing costs of a BEE are those that would be incurred under the financing practices that would have emerged under the previous regulatory approach to estimating the return on debt. The correct approach is to identify the efficient financing costs of a BEE, which are the costs that would be incurred in a workably competitive market (or, put another way, the costs that would be incurred absent regulation).
- The AER considered that the trailing average approach may be more reflective of the actual debt management approaches of non-regulated businesses and therefore, more likely to represent efficient financing practice.[5] The AER found that the efficient financing practice under the trailing average approach is to hold a staggered portfolio of fixed rate debt.[6] The efficient financing costs of a BEE are thus the costs associated with a staggered portfolio of fixed rate debt.
- Expert advice from CEG confirms that a 10 year trailing average approach would largely mimic the debt management strategy employed by unregulated infrastructure businesses.[7]

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5 AER, *Rate of Return Guideline: Explanatory Statement*, December 2013, pp. 108–111.

6 AER, *Rate of Return Guideline: Explanatory Statement*, December 2013, pp. 108–110.

7 CEG, *Efficiency of Staggered Debt Issuance*, February 2013, [92], [97], [101] and [102].

- Given that the costs associated with a staggered portfolio of fixed rate debt are best approximated by a trailing average methodology, the immediate implementation of the trailing average approach to estimating the return on debt will provide an allowance that reflects efficient financing costs. Conversely, application of a transition that results in the return on debt being different from efficient financing costs will, by definition, lead to an allowance that is not commensurate with the efficient debt financing costs of a BEE.

For these reasons, AusNet Services considers that the trailing average approach should be implemented immediately, with no transition.

Alternatively, even if the AER's approach of estimating efficient financing costs by reference to the financing practices that would emerge under regulation were correct, the appropriate approach would be to adopt a hybrid form of transition where only the hedged base rate component of the return on debt is subject to a transition (AER Option 3). This is because the AER has concluded that under the previous on-the-day approach to estimating the return on debt, an efficient financing practice would have been to engage in hedging of the base rate. By contrast, the AER has conceded that the debt risk premium (DRP) component of the return on debt cannot be (and could not have been) hedged, with the result that there is no reason for a transition to be applied to it.

If the hybrid transition is to be adopted, it would then be necessary to consider to what degree hedging would have been efficient. While the AER's reasoning assumes that the efficient level of hedging was 100%, this is incorrect as a matter of fact and the evidence demonstrates that the benchmark level of hedging of the base rate under an on the day approach to estimating the return on debt is significantly less than 100%.

On any view of what are efficient financing costs, the AER's transition cannot be justified. Even on the AER's view of the correct approach to estimating efficient financing costs, and assuming that the BEE hedged the base rate 100%, application of the AER's transition would lead to a mismatch between efficient financing costs and the regulatory allowance on the DRP component as the DRP could not have been hedged by a BEE.

In respect of implementation issues, AusNet Services submits that the AER should:

- Adopt a benchmark credit rating of BBB to BBB+;
- Continue to adopt a benchmark term of 10 years;
- For the first regulatory year, a 10 year historical average of the cost of debt estimated by the RBA, and (since its publication in May 2015) Reuters, should apply; and
- For subsequent regulatory years, 10% of the cost of debt should be annually updated to include prevailing rates, as estimated by the RBA and Reuters.

For the reasons set out in this submission AusNet Services submits that the evidence supports a credit rating of BBB to BBB+. For this reason, the AER's preliminary decision to set the return on debt by reference to data for a BBB broadband credit rating when the AER considers that the benchmark is BBB+ cannot be viewed as an "outcome towards the end of the range of options that may be favourable to the businesses".[8] Rather, in light of the evidence that an appropriate credit rating assumption is in the range of BBB to BBB+, use of a broad BBB band data series is entirely appropriate.

AusNet Services notes that its proposed method for estimating the return on debt does not make any allowance for a new issue premium. AusNet Services considers that in light of the evidence of a positive and significant new issue premium, making no allowance for this premium (as AusNet Services does) is highly conservative, in the sense that it is likely to lead to under-estimation of the efficient financing costs of a BEE.

8 Preliminary Decision (Overview), p. 50.

7.1.3 Return on Equity

The method adopted by the AER in its Preliminary Decision does not result in a return on equity that is consistent with the ARORO.

The evidence before the AER is that its estimate is too low. In particular:

- The AER's estimate fails a number of its own cross-checks; and
- It is below all available and relevant evidence as to the return on equity required by investors.

This outcome is the result of:

- The AER relying solely on the output of a model that is known to produce biased estimates, without the AER correcting for this bias;
- The AER applying this model in a way that does not reflect market practice and which results in the return on equity simply tracking movements in the risk-free rate; and
- Errors in interpretation and use of key evidence, including empirical evidence relating to the estimation of the market risk premium (MRP) and equity beta.

AusNet Services continues to believe that the ARORO is best achieved through an approach that properly has regard to estimates from all relevant return on equity models. In its Initial Proposal, AusNet Services proposed that each of the Sharpe Lintner Capital Asset Pricing Model (SL CAPM), the Black CAPM, the Fama French Three Factor Model (FFM) and Dividend Growth Model (DGM) be estimated, and that these estimates each be given appropriate weight in deriving a return on equity estimate. AusNet Services maintains its view that this approach would best achieve the ARORO.

However, if the AER proposes to continue relying solely on the SL CAPM to estimate the return on equity, it becomes even more important that the estimates of the MRP and equity beta are calculated in a manner that has proper regard to relevant material in order to ensure that its estimate of the return on equity is consistent with the ARORO and reflects prevailing market conditions. Of particular importance are the DGM estimates for the MRP and evidence from wider datasets for the equity beta.

This submission outlines an alternative approach that involves properly adjusting SL CAPM parameters to deliver a return on equity that contributes to the achievement of the ARORO and reflects prevailing market conditions. This involves:

- Determining a robust 'starting point' equity beta estimate, based on a sufficiently large sample of comparable businesses;
- Making a transparent and empirically based adjustment to the equity beta estimate to account for the known shortcomings of the SL CAPM, particularly low beta bias and book-to-market bias; and
- Deriving the MRP in a way that gives appropriate weight to measures of the prevailing market conditions (i.e. the prevailing MRP).

This alternative approach leads to an estimate of the prevailing return on equity of 9.89 per cent. This is rounded to 9.90 per cent as per the AER's Rate of Return Guideline.

7.1.4 Gearing

AusNet Services maintains its proposed gearing ratio of 60 per cent, accepted by the AER in the Preliminary Decision, for the reasons set out in AusNet Services' regulatory proposal, and the Preliminary Decision. AusNet Services notes that this gearing assumption is broadly consistent with evidence of gearing ratios for businesses operating in a workably competitive market providing services similar to standard control services.

7.1.5 Gamma

The AER's estimate of gamma does not reflect the value of imputation credits to investors. The AER has over-estimated gamma, meaning that the reduction to the overall return to account for imputation credits is too large.

The AER's approach to estimating gamma is premised on an incorrect interpretation of the NER. The AER seeks to estimate gamma on a "*pre-personal-costs*" basis, which is equivalent to estimating gamma as the *rate of utilisation* (or assumed utilisation) of imputation credits, rather than their *value* to investors.

As a result, the AER has erred in its use of evidence in relation to gamma:

- The AER uses equity ownership rates as direct evidence of the value of distributed credits (theta), when in fact equity ownership rates are no more than an upper bound (or maximum) for this value;
- The AER also uses redemption rates as direct evidence of the value of distributed credits (theta), when in fact redemption rates are no more than an upper bound (or maximum) for this value; and
- The AER has erred in concluding that market value studies can reflect factors, such as differential personal taxes and risk, which are not relevant to the task of measuring theta. Market value studies are direct evidence of the value of imputation credits to investors.

Further, the AER has made errors in its interpretation and use of key evidence, including by proceeding on the incorrect footing that estimates of theta based on data for listed companies can only be combined with estimates of the "listed equity" distribution rate.

On a proper interpretation of the empirical evidence:

- Both tax statistics and equity ownership data indicate that theta can be no higher than 0.45, and that therefore the upper bound for gamma is 0.3;
- The best evidence as to the value of imputation credits – from SFG's updated dividend drop-off study – indicates that theta is approximately 0.35 and that gamma is 0.25.

Even on the AER's interpretation of the NER, its gamma estimate cannot be supported. The evidence demonstrates that if gamma is estimated on a "*pre-personal-costs*" basis, the best estimate is approximately 0.3.

7.1.6 Forecast Inflation

Recent market evidence demonstrates that the AER's forecasting method is currently over-estimating inflation.

The consequence of this is that:

- The inflation forecast used to make adjustments to cash flows is inconsistent with the forecast of inflation implied in the nominal rate of return; and
- The downward adjustment to depreciation cash flows will be too large, thus artificially depressing the overall return to investors.

AusNet Services proposes that an alternative forecasting method, based on market data, be adopted. This alternative method will ensure consistency between the inflation forecast used to make adjustments to cash flows and the forecast of inflation implied in the nominal rate of return.

7.1.7 Interrelationships

There is a well-recognised interrelationship between the return on equity and the value of imputation credits – since the MRP needs to be grossed up for the value of imputation credits, a higher theta estimate implies a higher required return on equity.

- This interrelationship is accounted for in this submission and the supporting expert advice.
- If the AER were to reduce its estimate of theta to 0.35, while maintaining its current approach to estimating the MRP, no adjustment to the AER's MRP estimate would be necessary. This is because the top of the AER's range of estimates of the historical average MRP (used by the AER as its MRP point estimate) would remain at 6.5%.[9]

There is also an interrelationship between the method for forecasting inflation and the amount that is deducted from the annual revenue requirement for indexation of the regulatory asset base, and between the allowed rate of return and the method for forecasting inflation. Due to these interrelationships, the forecast of inflation needs to be accurate (i.e. as close as possible to actual inflation, which is used to roll forward the RAB at the end of the regulatory period) and consistent with the implied forecast of inflation in the nominal rate of return. The best way to do this is to rely on the same dataset (i.e. market prices of securities) to estimate both.

AusNet Services does not accept that there is an interrelationship between the method for transitioning to the trailing average approach to estimating the return on debt and the equity beta. As noted by Chairmont, the required return on equity is not affected by the DRP mismatch risk as it is a diversifiable specific risk rather than a component of market systematic risk.[10] Therefore any change in the AER's approach to estimation of the return on debt (including any change to the transition method) will not affect the equity beta.

Finally, AusNet Services considers that the return on equity and return on debt need to be estimated on the basis of a consistent approach to the ARORO. As explained below, our proposed approaches to estimating the return on equity, return on debt, and the overall rate of return, as described in this Chapter, are consistent with the approach to the ARORO described in section 7.1.1 above.

7.2 Background

7.2.1 Recent changes to the rate of return rules

As has been noted by AusNet Services, the rules relating to the allowed rate of return and gamma were amended in November 2012 (the **2012 Rule Amendment**). A key aspect of the November 2012 rule changes was the removal of the requirement to estimate the return on equity using the SL CAPM. This was replaced with a requirement to estimate the return on equity such that it contributes to the achievement of the ARORO, having regard to relevant estimation methods, financial models, market data and other evidence.

In making the rule amendments, the Australian Energy Market Commission (**AEMC**) stated that the amendments provided the regulator with the flexibility to adopt the approach it considers appropriate to estimate the rate of return, "provided it considers relevant estimation methods, financial models, market data and other information". The AEMC noted that:[11]

> *"This is so the best estimate of the rate of return can be obtained that reflects efficient financing costs of the service provider at the time of the regulatory determination.*
>
> *In this way, the regulator can better respond to changing financial market conditions, particularly where volatile market conditions impact on a service provider's ability to attract sufficient capital to finance the expenditure necessary to provide a reliable energy supply to consumers."*

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9 For reasons set out in section 7.4, AusNet Services does not agree with the AER's approach to estimating the MRP. However we note that if the AER were to maintain the same approach to estimating the MRP while lowering its estimate of theta, its estimate of the MRP would not need to change.

10 Chairmont, *Financing Practices Under Regulation: Past and Transitional*, 13 October 2015, p. 40.

11 AEMC, *Rule Determination: National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012; National Gas Amendment (Price and Revenue Regulation of Gas Services) Rule 2012*, November 2012, p. iii.

In relation to the return on equity, one of the key drivers of the rule changes was a concern that estimation of the return on equity had become overly formulaic, and unduly bound to a single model (the SL CAPM). Such a concern was expressed by the Expert Panel on Limited Merits Review:[12]

> *"Put bluntly, at the moment the AER is required to proceed, as a matter of law, on the basis of a model that is known to abstract from a factor considered (in the Panel's view, rightly) to be a matter of such significance (i.e. regulatory risk or uncertainty) that it is afforded special mention in the revenue and pricing principles section of the NEL.*
>
> *That this is more than a theoretical point is indicated by the fact that the Financial Investors Group told us that they had been concerned about the narrow, CAPM focus of the regulatory approach to date, and had urged the AER to pay more attention to conditions in capital markets themselves (in contrast to models of those markets). Whilst the Panel believes that the AER has rather more discretion than the AER itself appears to believe it has, it does appear to be the case that there is an inconsistency in the current combination of laws and rules that is impeding a more realistic, market-focused approach to the determination of returns on capital.*
>
> *The practical relevance of the problem has also been illustrated by the ACT's recent ATCO decision, the detail of which the Panel has not yet had time to fully absorb. In the name of regulatory certainty, the decision appears to elevate the standing of the CAPM in the NGR to something akin to its standing in the NER. The Panel is concerned that binding regulatory decisions hand and foot to a financial model* ***with known defects*** *does not immediately commend itself as an approach that will advance the NEO and NGO."*

The AEMC echoed this concern in its rule determinations, and accordingly sought to devise a new framework for estimating the rate of return that would require consideration of a wider range of models and estimation techniques. In its draft rule determination, the AEMC stated:[13]

> *"The rate of return estimation should not be formulaic and be driven by a single financial model or estimation method. The estimation approach to equity and debt components should include consideration of available estimation methods, financial models, market data and other evidence to produce a robust estimate that meets the overall rate of return objective. This means giving the regulator discretion on how it should estimate these components, rather than limiting the estimation process to a particular financial model or a particular data source.* ***In the context of estimating the return on equity, the estimation should not be limited to the standard CAPM, but should consider other relevant evidence****." [Emphasis added.]*

The AEMC, like the Expert Panel on Limited Merits Review, clearly considered that an estimation approach that was limited to a single model would not best meet the NEO and the revenue and pricing principles. Rather the AEMC considered that that estimates are likely to be more robust and reliable if they are based on a range of estimation methods. The AEMC explained (emphasis added):[14]

> *"There are a number of other financial models that have varying degrees of weaknesses. Some of the financial models that have gained some prominence include the Fama-French three-factor model, the Black CAPM, and the dividend growth model. Weaknesses in a model do not necessarily invalidate the usefulness of the model.* ***Ultimately, it is important to keep in mind that all these financial models are based on certain theoretical assumptions and no one model can be said to provide the right answer.***
>
> *Given that there are other financial models and methods for estimating the cost of equity capital that vary in their acceptance academically and consequent usage by market practitioners, restricting consideration to the CAPM alone would preclude consideration of other relevant estimation methods.*

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12 Professor George Yarrow, The Hon Michael Egan, Dr John Tamblyn, *Review of the Limited Merits Review Regime: Stage One Report*, 29 June 2012, pp. 41-42.

13 AEMC, *Draft Rule Determinations: Draft National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012; Draft National Gas Amendment (Price and Revenue Regulation of Gas Services) Rule 2012*, August 2012, p. 47.

14 AEMC, *Draft Rule Determinations: Draft National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012; Draft National Gas Amendment (Price and Revenue Regulation of Gas Services) Rule 2012*, August 2012, p. 48.

> *The Commission is of the view that estimates are more robust and reliable if they are based on a range of estimation methods, financial models, market data and other evidence. A framework that eliminates any relevant evidence from consideration is unlikely to produce robust and reliable estimates, and consequently is unlikely to best meet the NEO, the NGO and the RPP."*

The changes to the return on debt rules were at least partly driven by a concern that the "on-the-day" approach to estimating the return on debt previously required by the NER did not reflect efficient financing practices engaged in by businesses operating in competitive markets. The AEMC considered that the NEO would be advanced by an approach that better aligned with efficient financing and risk management practices that might be expected in the absence of regulation.

In the final determination in relation to the 2012 Rule Amendment, the AEMC indicates that one of its fundamental policy objectives in amending the allowed rate of return framework was to provide flexibility to take account of changing market conditions by making necessary adjustments to the method for estimating the return on debt.[15]

The AEMC emphasised the intention of the amended rule to align the return on debt estimate with the return required by investors of debt capital issued by a benchmark efficient service provider:[16]

> *"The return on debt estimate represents the return that investors of debt capital would require from a benchmark efficient service provider. Aligning the return on debt estimate with the efficient expected cost of debt of a service provider is therefore an important element in determining the rate of return."*

The 2012 Rule Amendment amended clause 6.5.2 of the NER to explicitly permit the return on debt methodology to be designed to reflect an average return that would have been required by debt investors in a benchmark efficient entity if it raised debt over an historical period. The AEMC considered that the amendment would permit the adoption of the trailing average approach to estimate the return on debt, which would better align efficient debt costs with the regulatory allowance.[17]

> *"The Commission's rate of return framework draft rule proposal provides the flexibility for the regulator to consider alternative approaches to estimating the return on debt, including historical trailing average approaches that may better align the debt servicing costs of an efficiently run service provider with the regulatory estimate of the return on debt."*

While the amended rules did not specify the methodology to be used to estimate the return on debt, the AEMC was clear in the guidance set out in its final rule determination that whatever methodology was used, it should result in a regulatory allowance for the return on debt that reflects financing practices (and ultimately costs) that, insofar as possible, would be expected absent regulation.[18]

> *"In its draft rule determination, the Commission considered that the long-term interests of consumers would be best served by ensuring that the methodology used to estimate the return on debt reflects, to the extent possible, the efficient financing and risk management practices that might be expected in the absence of regulation."*

The AEMC went on to consider whether it should depart from this approach in the draft determination, and concluded that (relevantly) there should be no change. Further, the AEMC observed that the NEO and the revenue and pricing principles are more likely to be met by a methodology that allows the AER to more accurately match debt conditions in the market for funds.[19]

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15 AEMC, *Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services, Final Position Paper*, 29 November 2012, pp. 44, 45-46, 49 and 55-56.

16 AEMC, *Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services, Final Position Paper*, 29 November 2012, p. 73.

17 AEMC, *Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services, Draft Rule Determinations*, 23 August 2012, p. 78.

18 AEMC, *Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services, Final Position Paper*, 29 November 2012, p. 76.

19 AEMC, *Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services, Final Position Paper*, 29 November 2012, p. 86.

7.2.2 The ARORO

Under the rules as amended by the AEMC, the ARORO is the touchstone for estimating both the return on equity and the return on debt. The NER require that:

- The return on equity for a regulatory period be estimated such that it contributes to the achievement of the ARORO;[20] and
- The return on debt for a regulatory year be estimated such that it contributes to the achievement of the ARORO.[21]

The ARORO is that the rate of return for a DNSP is to be commensurate with the efficient financing costs of a BEE with a similar degree of risk as that which applies to the DNSP in respect of the provision of standard control services.[22]

As can be seen, the ARORO has two key elements:

- First, the ARORO requires identification of the level of risk that applies to the DNSP in respect of the provision of standard control services; and
- Secondly, the ARORO requires estimation of efficient financing costs for a BEE facing a similar degree of risk as that DNSP.

AusNet Services considers that the relevant level of risk is that faced by entities operating in a workably competitive market providing services similar to electricity distribution services within Australia. Therefore, in constructing comparator datasets for the purposes of estimating a rate of return that is commensurate with efficient financing costs of a BEE, these datasets should include entities that face a similar degree of risk to that faced in the provision of electricity distribution services. That is, they should not be restricted to regulated entities. For example, as will be discussed below:

- In estimating the equity beta for a BEE facing a similar degree of risk as that which applies to the DNSP in respect of the provision of standard control services, businesses in other sectors and other countries facing a similar degree of risk should be included in the dataset; and
- In estimating the return on debt, yields are measured using benchmark indices for the relevant credit rating band, with those indices reflecting bond yields across a wide range of businesses within that credit rating band (i.e. a range of different businesses facing a similar degree of risk, including businesses operating in competitive markets).

If AusNet Services is incorrect that the relevant level of risk is that faced by entities operating in a workably competitive market providing services similar to electricity distribution services within Australia, but rather, the relevant level of risk is that of a regulated energy network business subject to economic regulation under the NEL, AusNet Services submits that the reference to 'efficient financing costs' in the ARORO is to costs incurred (and therefore financing practices adopted) in a workably competitive market to finance an investment with that risk profile.

Moreover, even if the relevant level of risk is that of a regulated energy network business subject to economic regulation under the NER / NGL, in many cases it will be necessary to look beyond just those businesses that supply regulated energy network services within Australia in order to produce sufficiently large datasets for the estimation of risk parameters. Specifically in the context of equity beta, given that the sample of Australian energy network businesses is too small, the dataset for estimating risk parameters needs to be enlarged by adding other businesses facing a *similar* degree of risk.

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20 NER, cl 6.5.2(f).

21 NER, cl 6.5.2(h).

22 NER, cl 6.5.2(c).

Once the relevant degree of risk is established, the task is then to estimate the efficient financing costs of a BEE facing a similar degree of risk. As noted above, regardless of what the relevant degree of risk is, once this risk benchmark is established, the assessment of efficient financing costs requires consideration of what financing practices would be engaged in by businesses operating in a workably competitive market, facing the relevant degree of risk. Such an interpretation of the term 'efficient financing costs' in the ARORO is consistent with the object of regulation itself—which is to simulate competitive market outcomes. This is because it is ultimately competition that drives efficient behaviour.

This approach is consistent with the intent of the AEMC, as stated in its final position paper accompanying the November 2012 rule changes. As noted above, the AEMC made clear that the NEO would be best served by the adoption of a return on debt estimation methodology that reflects the efficient financing and risk management practices that might be expected in the absence of regulation.[23]

The rationale of economic regulation of network assets is to, insofar as possible, mimic the operation of, and replicate the outcomes in, a workably competitive market. This is because, by reason of the adjustments to quantity and pricing that occur in response to changes in these markets, it is in such markets that economic efficiency is achieved. For example, the Expert Panel on Energy Access Pricing has noted:[24]

> *"The central objective of price control is to constrain the exercise of market power by firms that do not face effective competition for their services. Regulation and, specifically, the periodic determination of maximum prices or revenue is directed at achieving outcomes that could otherwise be expected from effective competition."*

The Expert Panel noted that regulatory regimes typically set prices by reference to costs because costs associated with supply are a central element of pricing outcomes in competitive markets.[25]

> *"Virtually all regulatory regimes set controlled prices by reference to an assessment of costs. The reason is that the cost of supply – in conjunction with the role of consumer preferences in determining the appropriate service and product mix – is a primary driver of price outcomes in effectively competitive markets."*

The AEMC has commented on the objective of regulation in similar terms to the Expert Panel.[26]

> *"The role of incentives in regulation can be traced to the fundamental objective of regulation. That is, to reproduce, to the extent possible, the production and pricing outcomes that would occur in a workably competitive market in circumstances where the development of a competitive market is not economically feasible."*

The AEMC has also noted that regulatory arrangements attempt to mimic competitive markets given that economic efficiency is achieved in those markets. In the context of electricity transmission, which is subject to a similar regulatory framework to electricity distribution, the AEMC stated:[27]

> *"TNSPs, like most businesses, operate in an uncertain environment. Uncontrollable, external events as diverse as changes in economic growth, climate and regulatory obligations can alter the quantity and nature of the services required to be provided by TNSPs. In a normal competitive market, production and pricing behaviour adjusts in response these changes. In these markets, efficient producers are able to recover their costs and should generally earn at least a normal*

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23 AEMC, *Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services, Final Position Paper*, 29 November 2012, p. 76.

24 Expert Panel on Energy Access Pricing, *Report to the Ministerial Council on Energy*, April 2006, p. 118.

25 Expert Panel on Energy Access Pricing, *Report to the Ministerial Council on Energy*, April 2006, p. 98.

26 AEMC, *Draft National Electricity Amendment (Economic Regulation of Transmission Services) Rule 2006*, Rule Determination, 16 November 2006, p 96.

27 See for example: AEMC, *National Electricity Amendment (Economic Regulation of Transmission Services) Rule 2006*, Rule Determination, 16 November 2006, p 54; and AEMC, *Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services, Final Position Paper*, 29 November 2012, p. 182.

return on their investments. As highlighted above, the regulatory arrangements need to mimic the operation of a competitive market as closely as possible."

The term "workably competitive market" refers to a market in which no firm has a substantial degree of market power and in which market forces increase efficiency beyond that which could be achieved in a non-competitive market, even if perfect competition is not attained. These concepts were explored by the Western Australian Supreme Court in the context of section 8.1 of the Gas Code that set out general principles applying to reference tariffs, which included that reference tariffs should be designed with a view to achieving the objective of replicating the outcome of a competitive market.[28]

"Workable competition is said originally to have been developed over half a century ago by anti-trust economists. In simple terms it indicates a market in which no firm has a substantial degree of market power…I am left with the clear impression that in the field of competition policy, especially market regulation, the prevailing view and usage among economists is that a reference to a competitive market is to a workably competitive market. In the particular context of the promotion of a competitive market for natural gas it would be surprising if what was contemplated was a theoretical concept of perfect competition, as the subject matter involves very real-life commercial situations. Workable competition seems far more obviously to be what is contemplated. This is clearly consistent with the approach of the Hilmer Report…"

The Court went on to set out its interpretation of the requirement to replicate the outcome of a competitive market in the context of a regulatory framework applying to monopoly infrastructure.[29]

"What is in contemplation in s 8.1(b) is a competitive market in the field of gas transportation. The objective is to replicate what would be the outcome if there was competition for the transportation of gas by the pipeline in question, even though it is the premise of the Act and the Code that the pipeline is in a monopoly situation and it would be uneconomic to construct another. The objective seems to necessitate the application of economic methods and theory, albeit to replicate the outcome of a workably competitive market, because the achievement of competition in fact is not possible."

The Court then discussed the relationship between efficiency and the outcomes of a workably competitive market, noting that the revenues earned from the provision of services in a workably competitive market would approximate efficient costs.[30]

"Section 8.1(b) provides that a reference tariff should be designed with a view to replicating the outcome of a competitive market, ie as indicated earlier, a workably competitive market. The discussion of the concept of a competitive market earlier in these reasons, especially the close interrelationship recognised by economists between the role of a competitive market and the achievement of economic efficiency, suggests that s 8.1(b) and s 8.1(a) are more complementary than antithetical, although they need not always be in harmony. As far as the expert evidence discloses, a competitive market in the sense of a workably competitive market appears to be viewed by the general body of economic opinion as likely, over time, to lead to economic efficiency or at least to greater economic efficiency. As the Hilmer Report puts it, the promotion of effective competition is generally consistent with maximising economic efficiency. This would suggest that, over time, the revenue earned by a service provider from a reference service, if that service was provided in a workably competitive market, would approximate the efficient costs of delivering the service. That also helps to confirm that the concept of efficient costs, like the outcome of a workably competitive market, is not capable of precise or certain calculation and at best, can only be approximated. Both are based on many assumptions. How best to determine the efficient level of costs or the outcome of a competitive market are matters of economic theory and practice which, on the evidence, are in the course of constant revision, development and refinement."

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28 *Re Dr Ken Michael AM; Ex parte Epic Energy (WA) Nominees Pty Ltd* [2002] WASCA 231, [124].

29 *Re Dr Ken Michael AM; Ex parte Epic Energy (WA) Nominees Pty Ltd* [2002] WASCA 231, [127].

30 *Re Dr Ken Michael AM; Ex parte Epic Energy (WA) Nominees Pty Ltd* [2002] WASCA 231, [143]. Section 8.1(a) of the Code referred to the objective of providing the service provider with the opportunity to earn a stream of revenue that recovers the efficient costs of delivering the reference service over the expected life of the assets used in delivering that service.

In the context of gas regulation by the NGL and NGR, the objective of which is similar to electricity regulation, the AER has also drawn the connection between the efficiency objective and the recovery of costs that would be incurred in a workably competitive market.[31]

> *"The AER submitted that rule 91 requires the AER to permit service providers a reasonable opportunity to recover what the AER considers "legitimate costs". Legitimacy, according to the AER is informed by the NGO [National Gas Objective] and, in particular, means costs that would be incurred in a "workably competitive market". The requirement for replication of a workably competitive market outcome is said to be derived from the intent of the regulatory framework."*

The Tribunal has confirmed that the NEL and the NER "seek to ensure that an NSP operates and invests efficiently in the manner of a firm in a competitive environment".[32] It is implicit in the Tribunal's observations that the Tribunal accepted the notion that "efficient costs" are those that would be incurred by the hypothetical business in a workably competitive market.

The term "efficient" in the ARORO is to be interpreted consistently with how that term is used elsewhere in the regulatory regime. Most relevantly the term "efficient" appears in the NEO and the revenue and pricing principles.

The second reading speech made on the introduction of the Bill which contained the NEL with the current NEO noted the following with respect to the NEO:[33]

> *"The national electricity market objective in the new National Electricity Law is to promote efficient investment in, and efficient use of, electricity services for the long term interests of consumers of electricity with respect to price, quality, reliability and security of supply of electricity, and the safety, reliability and security of the national electricity system.*
>
> *The market objective is an economic concept and should be interpreted as such. For example, investment in and use of electricity services will be efficient when services are supplied in the long run at least cost, resources including infrastructure are used to deliver the greatest possible benefit and there is innovation and investment in response to changes in consumer needs and productive opportunities.*
>
> *The long term interest of consumers of electricity requires the economic welfare of consumers, over the long term, to be maximised. If the National Electricity Market is efficient in an economic sense the long term economic interests of consumers in respect of price, quality, reliability, safety and security of electricity services will be maximised.*
>
> *…*
>
> *It is important to note that all participating jurisdictions remain committed to the goals expressed in the current market objectives set out in the old Code, even though they are not expressly referred to in the new single market objectives. Applying an objective of economic efficiency recognises that, in a general sense, the national electricity market should be competitive…"*

The AER has previously referred to this text of the second reading speech, noting that the NEO is fundamentally an efficiency objective and that the NEO seeks to emulate effectively competitive market outcomes.[34]

> *"In a competitive market, a firm has a continuous incentive to respond to consumer needs at the lowest cost (that is, operate efficiently) because competition may force it to exit the market if it does not. In addition, the firm has an incentive to improve its efficiency because it will enjoy greater market share if it can provide the best service at the lowest cost to the consumer. Essentially, the NEO imposes the pressures of competition on natural monopolies."*

In its report on energy access pricing the Expert Panel also referred to the second reading speech text extracted above and noted that "the elements of productive, allocative and dynamic efficiency, neatly encapsulated in the first paragraph of the extract, are at the core of the objective".[35]

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31 *Application by Envestra Ltd (No 2)* [2012] ACompT 3, [183].

32 *Application by EnergyAustralia and Others* [2009] ACompT 8, [106].

33 South Australia, *Parliamentary Debates*, House of Assembly, 9 February 2005, 1452 (John David Hill).

34 AER, *Expenditure Forecast Assessment Guideline: Explanatory Statement*, November 2013, p. 17.

The term "efficient" is also used in other provisions of the NER, including clauses 6.5.6 and 6.5.7 relating to forecast operating and capital expenditure. The AER has interpreted "efficient costs" in the context of the expenditure provisions of the NER as being "those expected costs based on outcomes in a workably competitive market".[36]

It is a principle of statutory interpretation that where a word is used consistently in legislation it should be given the same meaning.[37] Further, the NEL provides that words and expressions used in the NER have the same meaning as they have in the NEL.[38] Therefore, the term "efficient" in the ARORO is to be given the same meaning as "efficient" in the NEO. Further, in construing the term "efficient costs" where it appears in the NER, the interpretation that will best achieve the purpose of object of the NEL is to be preferred to any other interpretation.[39] As such, the term "efficient costs" is to be construed consistently with the economic concept of efficiency with which, as set out in detail above, it is well accepted the NEO is concerned.

An interpretation of the term "efficient costs" in the ARORO as being the costs that would be incurred in a workably competitive market is consistent with the intent of the AEMC, as stated in its final position paper accompanying the 2012 Rule Amendment. As noted above in the context of the return on debt, the AEMC made clear that the NEO would be best served by adoption of a return on debt estimation methodology that reflects the efficient financing and risk management practices that might be expected in the absence of regulation.[40]

In this connection it may also be observed that what is relevant to the estimation of the return on debt is the return required by debt investors. This return is largely (or wholly) unaffected by the methodology adopted by the regulator to estimate the return on debt allowance. As such, it should be clear that efficient financing costs are those that would be incurred absent regulation and cannot be defined by reference to how a regulated entity might respond to any particular methodology adopted by the regulator to estimate the return on debt.

It may also be observed from the AEMC material that the intention of the 2012 Rule Amendment is to align the regulatory estimate with the return that investors of debt capital would require from a benchmark efficient service provider.[41] The regulatory methodology does not determine those costs. Rather, it must be responsive to such costs – they have existence independent of the regulatory methodology and the regulatory methodology must be designed to capture them.

Consistent with the statements of the AEMC set out above, the long term interests of consumers are best served by ensuring that the methodology used to estimate the return on debt reflects, to the extent possible, the efficient financing and risk management practices that might be expected in the absence of regulation. Specifically with regard to the determination of the characteristics of the BEE, the AEMC stated that the most appropriate benchmark to use in the regulatory framework for all service providers is the efficient private sector service provider.[42]

35 Expert Panel on Energy Access Pricing, *Report to the Ministerial Council on Energy*, April 2006, p 37.

36 AER, *Expenditure Forecast Assessment Guideline: Explanatory Statement*, November 2013, p 47.

37 See discussion in: D Pearce and R Geddes, *Statutory Interpretation in Australia* (LexisNexis Butterworths, 2014), pp 150-151.

38 NEL sch 2, cl 13(1). See also NEL, s 3 and sch 2.

39 NEL sch 2, cl 7. See also NEL, s 3 and sch 2.

40 AEMC, *Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services, Final Position Paper*, 29 November 2012, p. 76.

41 AEMC, *Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services, Final Position Paper*, 29 November 2012, p. 73.

42 AEMC, *Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services, Final Position Paper*, 29 November 2012, p. 72.

The AER itself appears to recognise that in estimating the financing costs of a regulated business under the NER, these should be consistent with what would be expected in the context of unregulated efficient businesses.[43]

> *"The allowed rate of return objective requires us to set a rate of return commensurate with the efficient financing costs of the benchmark efficient entity. We do not consider this to be only a theoretical proposition. Rather, it should be consistent with observable good practice in efficient businesses. We consider that, in practice, businesses make financing and investment decisions using widely accepted economic and financial models of the efficient cost and allocation of capital. To the extent that we use models for estimating the rate of return that are consistent with those widely used in practice, we are more likely to achieve the allowed rate of return objective."*

Identifying efficient financing practices by reference to the incentives created by a particular regulatory approach avoids the very object of the regulatory regime — being to, insofar as possible, create an environment in which the costs incurred (and ultimately allowed to be recovered) are efficient costs. The correct enquiry starts with an identification of what are efficient costs, and then a methodology is designed that, insofar as possible, permits those efficient costs to be recovered.

A paper published by the ACCC and AER's Regulatory Development Branch summarises the point accurately:[44]

> *"…when determining a new regulatory cost of debt approach, debt practices which are a product of the regulatory environment should be ignored. This is because these practices will change if the regulatory environment changes. If in setting a new regulatory framework, a regulator considers debt practices that are a result of businesses reacting to the existing regulatory framework, it may create a self fulfilling method that may not necessarily be efficient…*
>
> *The use of swap contracts to lock in the cost of debt for the access arrangement is a consequence of the regulatory framework, and their use by regulated businesses would change if the regulatory framework were to change. Ideally the regulatory framework for the cost of debt should reflect the efficient debt practices that occur in a competitive market. This would align competitive incentives with regulatory incentives."*

In short, the ARORO requires the formulation of methodologies to be used to estimate the rate of return, including the return on debt, that, insofar as possible, provide a return that is commensurate with forward-looking efficient costs, being the costs that would be incurred in a workably competitive market. Any other approach would lead to the absurd and circular result that any cost incurred is efficient where the regulatory approach provides an incentive for it to be incurred, even though it would not be incurred in a workably competitive market. Such an approach is inconsistent with the objective of the regulatory regime.

7.2.3 Matters the AER must have regard to in estimating the rate of return

Regard must be had to several relevant matters in estimating the rate of return, including:[45]

- Relevant estimation methods, financial models, market data and other evidence;
- The desirability of using an approach that leads to the consistent application of any estimates of financial parameters that are relevant to the estimates of, and that are common to, the return on equity and the return on debt; and
- Any interrelationships between estimates of financial parameters that are relevant to the estimates of the return on equity and the return on debt.

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43 AER, *Rate of Return Guideline: Explanatory Statement*, December 2013, p. 28.

44 Regulatory Development Branch, Australian Competition and Consumer Commission (H Smyczynski and I Popovic), *Estimating the Cost of Debt: A Possible Way Forward*, April 2013, p. 11.

45 NER, cl 6.5.2(e).

This requirement reflects the view of the AEMC, referred to above, that no one model or method can be said to provide the 'right' answer, and that estimates are more robust and reliable if they are based on a range of estimation methods, financial models, market data and other evidence.

In estimating the return on equity, regard must also be had to the prevailing conditions in the market for equity funds.[46]

In estimating the return on debt, the NER also require that regard be had to the following four factors:[47]

- The desirability of minimising any difference between the allowed return on debt and the return on debt of a BEE referred to in the ARORO;
- Any interrelationships between estimates of financial parameters that are relevant to the estimates of the return on equity and the return on debt;
- The incentives that the return on debt may provide in relation to capital expenditure over the regulatory period, including the timing of any capital expenditure, and
- Any impacts (including in relation to the costs of servicing debt across regulatory periods) on a BEE referred to in the ARORO that could arise as a result of changing the method that is used to estimate the return on debt from one regulatory period to the next.

7.2.4 Gamma – the value of imputation credits

In relation to gamma, the NER now require an estimate of "*the value of imputation credits*".

Importantly, the NER were amended in November 2012 to change the definition of gamma from "*the assumed utilisation of imputation credits*" to "*the value of imputation credits*". The change to the NER was entirely appropriate, given that the estimate of gamma determines an amount to deduct from allowed revenue to reflect the value that investors obtain from imputation credits.[48]

It is important that gamma be accurately estimated, since if the value of imputation credits is over-estimated this deduction will be too large and the overall return will be too low.

7.2.5 The importance of an accurate inflation forecast

Forecast inflation impacts on the overall return through its inclusion in the annual revenue requirement building blocks of a negative building block for RAB indexation in the second and subsequent regulatory years (which is applied in practice as a deduction to the depreciation building block).[49] This deduction is made in order to maintain a real rate of return framework (i.e. because under the NER a nominal rate of return[50] is applied to an inflation-adjusted asset base[51]). In order to ensure an appropriate overall return, the inflation forecast used to make this adjustment to cash flows needs to be as accurate as possible, and consistent with the forecast of inflation implied in the nominal rate of return.

46 NER, cl 6.5.2(g).

47 NER, cl 6.5.2(k).

48 NER, cl 6.5.3.

49 NER, cl 6.4.3(a)(1) & (b)(1).

50 NER, cl 6.5.2(d)(2).

51 NER, cl S6.2.3(c)(3).

7.2.6 Achieving the NEO

Providing for an overall return that is consistent with the ARORO is necessary to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers, consistent with the NEO.

If the level of return is set too low, AusNet Services may not be able to attract sufficient funds to make the required investments in the network and reliability and service standards may decline.

7.3 Return on Debt

7.3.1 Introduction

The AER's Preliminary Decision in relation to the return on debt is to maintain the position in the Rate of Return Guideline.[52] For AusNet Services' regulatory period, the AER's Preliminary Decision on the return on debt is to:

- Estimate the return on debt using an on-the-day rate in the first regulatory year (2016) of the 2016 to 2020 regulatory period; and
- Transition this rate into a trailing average approach over 10 years by updating 10% of the return on debt each year to reflect prevailing interest rates.[53]

The AER's preliminary decision on implementing the return on debt approach involves using:

- A benchmark credit rating of BBB+;
- A benchmark term of debt of 10 years;
- A simple average of the broad BBB rated debt data series published by the Reserve Bank of Australia (RBA) and Bloomberg, adjusted to reflect a 10 year estimate and other adjustments; and
- An averaging period for each regulatory year of between 10 business days and 12 months (nominated by the service provider) prior to 25 days before submission of the annual pricing proposal or reference tariff variation proposal.[54]

AusNet Services submits that in making a new distribution determination in substitution for the revoked Preliminary Decision, the return on debt should be estimated using the trailing average approach. AusNet Services agrees that the trailing average approach should be adopted to estimate the return on debt because infrastructure businesses operating in workably competitive markets would be expected to hold a staggered portfolio of fixed rate debt and the costs of holding such a portfolio are best approximated by the trailing average approach to estimating the return on debt.

However, AusNet Services does not agree that the AER's proposed 10-year transition to the trailing average approach should be adopted. Rather, AusNet Services submits that there should be no transition to the trailing average approach. The reference to "efficient financing costs" in NER 6.5.2(c) can only be understood to be the costs that would be incurred in a workably competitive market—this is what efficient financing costs are. As the debt financing practice that would be expected absent regulation is to hold a staggered portfolio of fixed-rate debt, and the trailing average approach provides an estimate of the return on debt that is commensurate with this practice, the NER require the immediate adoption of the trailing average approach.

If AusNet Services' primary position that the efficient financing costs of a BEE are to be estimated by reference to the costs that would be incurred in a workably competitive market, is rejected, and if the AER persists with estimating the return on debt by reference to efficient financing costs incurred by a

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52 Preliminary Decision, Pp. 3-143.

53 Preliminary Decision, pp. 3-144.

54 Preliminary Decision, pp. 3-148 – 3-149.

BEE subject to economic regulation under the NER, AusNet Services submits that the AER should adopt a "hybrid" transitional approach. The hybrid approach involves:

- For the base rate component of the return on debt, adopting:
  - A 10 year transition to a trailing average for the proportion of the debt portfolio assumed to have been hedged by the BEE using interest rate swaps, and
  - No transition for the proportion of the debt portfolio assumed not to have been hedged by the BEE (that is, moving immediately to the trailing average approach), and
- For the debt margin (or DRP) component, applying no transition by moving immediately to the trailing average approach from the first year of the 2016 regulatory period.

In respect of the implementation issues, AusNet Services submits that in making a new distribution determination in substitution for the revoked preliminary decision, the AER should:

- Adopt a benchmark credit rating of BBB to BBB+;
- Continue to adopt a benchmark term of 10 years;
- For the first regulatory year, a 10 year historical average of the cost of debt estimated by the RBA and, since its publication in 2015, Reuters, should apply; and
- For subsequent regulatory years, 10% of the cost of debt should be annually updated to include prevailing rates, as estimated by the RBA and Reuters.

For the reasons set out in this chapter AusNet Services submits that the evidence supports a credit rating of BBB to BBB+. For this reason, the AER's Preliminary Decision to set the return on debt by reference to data for a BBB broadband credit rating when the AER considers that the benchmark is BBB+ cannot be viewed as an "outcome towards the end of the range of options that may be favourable to the businesses".[55]

AusNet Services notes that its proposed method for estimating the return on debt does not make any allowance for a new issue premium. AusNet Services considers that in light of the evidence of a positive and significant new issue premium, making no allowance for this premium (as AusNet Services does) is highly conservative, in the sense that it is likely to lead to under-estimation of the efficient financing costs of a BEE.

AusNet Services' position on each of the above issues is addressed in detail below.

7.3.2 Trailing average approach

In the Rate of Return Guideline, the AER proposed to estimate the allowed return on debt using:

- A trailing average approach with the length of the trailing average being 10 years;
- Equal weights to be applied to all the elements of the trailing average; and
- The trailing average to be automatically updated every regulatory year within the regulatory control period.[56]

AusNet Services agrees with the proposed approach in the Rate of Return Guideline to estimate the return on debt using a trailing average approach. AusNet Services agrees with the AER that the trailing average approach is likely to contribute to the achievement of the ARORO and recognises the desirability of minimising any difference between the return on debt and the return on debt of a benchmark efficient entity referred to in the ARORO.[57] This includes because, as noted by the AER, the trailing average approach allows a service provider to manage both interest rate risk and

55 Preliminary Decision (Overview), p. 50.

56 AER, *Rate of Return Guideline*, December 2013, p. 19.

57 AER, *Rate of Return Guideline*, December 2013, p. 19.

refinancing risk, without the use of interest rate swaps, which are a product of the on-the-day approach.[58] As discussed below, the trailing average approach will provide an estimate of the return on debt that is commensurate with the financing costs that would be incurred by a firm operating in the manner of a firm in a competitive environment.

However, and as discussed in detail below, AusNet Services does not agree with the proposed approach in the Rate of Return Guideline, and as adopted in the Preliminary Decision, to implement the trailing average approach after a period of transition.[59] That is, AusNet Services submits that the AER should immediately apply the trailing average approach without a transition.

7.3.3 The AER's decision to impose a 10 year transition to the trailing average approach

(a) The AER's view of efficient financing costs

In the Preliminary Decision the AER adopts the conceptual definition of the BEE as set out in the Rate of Return Guideline, namely: "*a pure play, regulated energy network business operating within Australia*".[60] In relation to the "regulated" aspect of this definition, the AER states: "*A regulated entity for the purposes of our benchmark is one which is subject to economic regulation (that is, price cap regulation) under the National Electricity Rules and/or the National Gas Rules*".[61]

The AER describes the efficient debt financing costs of a BEE in the following way:[62]

> *"…those which are expected to minimise its debt financing costs over the life of its assets, while managing refinancing risk and interest rate risk:*
>
> - *Refinancing risk—the risk that a benchmark efficient entity would not be able to refinance its debt when it matures.*
> - *Interest rate risk—the risk associated with a mismatch between the allowed return on debt and a benchmark efficient entity's actual return on debt."*

Having defined the BEE and the efficient debt financing costs of a BEE, the AER concludes that the efficient debt financing practices of the BEE under the previous on-the-day approach to estimating the return on debt would have involved the following:[63]

- Borrowing long term (10 year) debt and staggering the borrowing so only a small proportion (around 10 per cent) of the debt matured each year;
- Borrowing using floating rate debt, or borrowing fixed rate debt and converting it to floating rate debt using fixed-to-floating interest rate swaps at the time of the debt issue, which extended for the term of the debt (10 years); and
- Entering floating-to-fixed interest rate swaps at, or around, the time of the service provider's averaging period, which extended for the term of the regulatory period (typically five years).

The AER concludes that, under the financing practice described above, the base rate component of the AER's BEE's actual return on debt would have broadly matched the on-the-day rate, while the debt risk premium component each year would have reflected the average of the previous 10 years.[64]

Critical to the AER's findings as to efficient financing practices (and, in turn, efficient financing costs), is that such practices involve the BEE hedging the base rate component. It is uncontroversial that the financing practice as described above would only be engaged in under the on-the-day approach.

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58 AER, *Rate of Return Guideline: Explanatory Statement*, December 2013, p. 108.

59 AER, *Rate of Return Guideline*, December 2013, p. 19.

60 Preliminary Decision, pp. 3-24.

61 Preliminary Decision, pp. 3-25.

62 Preliminary Decision, pp. 3-166.

63 Preliminary Decision, pp. 3-186.

64 Preliminary Decision, pp. 3-186.

However, efficient financing costs (achieved through the adoption of efficient financing practices) under the NER should not be identified by reference to what a regulated entity might do in response to a particular methodology adopted by a regulator to calculate the return on debt allowance. Rather, as elaborated below, efficient financing costs are properly identified by reference to financing practices that would be adopted in workably competitive markets.

(b) Efficient financing costs referred to in the ARORO

As noted in section 7.2.2 above, the term "efficient financing costs" in the ARORO is properly understood as referring to the costs that would be expected to be incurred in a workably competitive market.

This is confirmed by the AER's consultant, Chairmont, who states:[65]

> *"The decision to adopt a strategy of gradual staggered issuance of fixed rate debt is consistent with behaviour where the regulatory cost of debt framework does not apply."*

Similarly, CEG has found that unregulated businesses typically raise debt in a staggered manner.[66]

> *"In reality, almost all businesses, including regulated infrastructure businesses, raise debt in a staggered fashion over time. Moreover, for infrastructure businesses with very long lived assets, the average maturity of this debt at the time of issue tends to be long term (10 years or more). It is very likely that this is a response to a desire to minimise transaction costs, in particular insolvency/bankruptcy costs, that are heightened if too much debt must be refinanced in a short period of time. Consequently, a business's cost of debt at any given time will reflect the costs incurred when issuing debt over the last decade (i.e., not just over the last 20 days).*
>
> *…*
>
> *A 10 year trailing average approach would largely mimic the debt management strategy employed by infrastructure businesses (regulated and unregulated) around the world."*

The debt financing costs of a staggered fixed rate debt portfolio match the debt cost calculated under the AER's trailing average approach. Put another way, the efficient financing costs of a BEE (being an unregulated entity operating in a workably competitive market) are the costs produced by application of the trailing average approach. Therefore, on a correct construction of the term 'efficient financing costs' in the ARORO, there is no basis for the imposition of a transition.

Having identified in the Rate of Return Guideline that the trailing average approach promotes the productive, allocative and dynamic efficiency of debt financing practices, and specifically provides incentives for service providers to seek the lowest debt financing costs,[67] and therefore, is consistent with the outcomes of a workably competitive market, the AER should have adopted the trailing average approach as the methodology to estimate the return on debt, without any transition.

Adoption of the AER's proposed transition would be inconsistent with the NEO and the revenue and pricing principles in providing an allowance for costs associated with financing practices adopted in response to a prior regulatory regime and would not impose an appropriate pricing signal for investment. That is, rather than sending a pricing signal that mimics the pricing signal that would be sent as a result of competition in a workably competitive market, the pricing signal sent under the AER's approach would be that arising from the idiosyncratic application of a prior regulatory methodology to estimating the return on debt.

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65 Chairmont, *Cost of Debt: Transitional Analysis*, April 2015, p 38. At page 38, Chairmont references UBS' statement that: 'The 'trailing average' approach used by Networks NSW was consistent with debt management strategies adopted by non-regulated entities in the infrastructure sector – ports, airports, road and railways': UBS, *UBS Response to the TransGrid Request for Interest Rate Risk Analysis following the AER Draft Decision of November 2014*, undated, p 5. See also: Frontier Economics, *Cost of Debt Transition for NSW Distribution Networks*, January 2015, pp. 8-9.

66 CEG, *Efficiency of Staggered Debt Issuance*, February 2013, [92] and [97].

67 AER, *Draft Rate of Return Guideline: Explanatory Statement*, August 2013, pp. 83-84.

In the Preliminary Decision, the AER states that it is not satisfied that immediate application of the trailing average approach is reasonable or would contribute to the achievement of the ARORO.[68] The reasons given by the AER are that:

- It has the potential to create a bias in regulatory decision making that can arise from the selection of historical data after the results of that data are already known;
- It would exaggerate a mismatch between the allowed rate of return and the efficient financing costs of a BEE over the life of its assets, with the consequence that over the life of the assets, a BEE is likely to materially either over- or under-recover its efficient financing costs, and
- It does not approximately match the allowed return on debt with the efficient financing costs of a BEE over the 2016 period as it transitions its financing practices to the trailing average approach.[69]

If AusNet Services is correct that the term "efficient costs" is to be interpreted as the costs that would be incurred in a workably competitive market, immediate adoption of the trailing average approach will approximately match the allowed return on debt with the efficient financing costs of a BEE. Therefore, the last point in the list above is not a reason to delay the immediate application of the trailing average approach.

It is also important in relation to the first two points in the list above, being the introduction of bias into regulatory decision making and violations of the NPV=0 principle, that these policy issues are not relevant under the NEL and the NER decision-making framework which tasks the AER with establishing a contemporary or prevailing cost of debt. Even if they were relevant, they do not support the AER's transition. These points are discussed below in the context of the hybrid approach.

If AusNet Services' primary position is not accepted and the AER is insistent on asserting that efficient financing practices (and, in turn, efficient financing costs under the ARORO) are to be determined by reference to what a benchmark entity would be expected to do in response to the regulatory framework, there is no sound basis upon which a transition should be applied to the DRP component of the return on debt. This issue is discussed below.

(c) Even if the AER's view of efficient financing costs is correct, it has adopted the wrong transition

As the AER acknowledges, the DRP component of the return on debt cannot be—and thus in and prior to the 2011 regulatory period could not have been—hedged.[70]

> *"For the debt risk premium component, we consider the allowed and actual return of a benchmark efficient entity would have usually differed in each access arrangement period. This is because the DRP component could not have been efficiently hedged to the allowed debt risk premium. So, in some access arrangement periods, the allowed debt risk premium would have exceeded the actual debt risk premium of a benchmark efficient entity. In other access arrangement periods, the allowed debt risk premium would have been less than the actual debt risk premium."*

Therefore, even if hedging strategies under the previous regulatory approach were relevant, it logically follows from the fact that the DRP component could not have been hedged that no transition should be applied to the DRP component and a trailing average approach should be immediately adopted. This is the advice given by Chairmont to the AER in Chairmont's April 2015 report.

> *"The DRP does not need to be transitioned because the NSP already has a staggered floating rate debt portfolio.*[71]

68 Preliminary Decision, p. 3-165.

69 Preliminary Decision, p. 3-165.

70 Preliminary Decision, p. 3-175.

71 Chairmont, *Cost of Debt: Transitional Analysis*, April 2015, pp. 8-9.

…

A [benchmark efficient entity] will already have a staggered DRP in its portfolio, but not evenly distributed, i.e. not smooth. Therefore, to match this situation the AER should not transition the DRP, but instead move immediately to a 'trailing average' for this element. As there is no standard methodology to account for the non-smooth portfolio, AER should adopt a smooth 'trailing average' for the DRP. It is acknowledged that the measurement of historical DRP is difficult, because it is accurate only at the time of debt issuance; however it is likely that a reasonable estimate could be determined…[72]

The October 2015 Chairmont report reiterated that, if the AER's identified efficient financing practice was to be adopted, consistency required that a trailing average DRP be applied. The report stated that as a consequence of the efficient financing practice adopted by the AER, "the allowed return on debt should be calculated in line with the Basic Approach, i.e. a trailing average DRP".[73]

Chairmont concludes that the AER's "Basic Approach" to efficient financing practices, which involves entities hedging the base rate component of the return on debt and having a trailing average DRP, minimises differences between the regulated return on debt and the actual cost of debt faced by a BEE in the transition phase.[74]

"The Basic Approach to EFP [efficient financing practices], i.e. the trailing average DRP plus the average 1-10 year swap rates, minimises any discrepancy between the allowed and actual cost of debt in the transition phase for a BEE [benchmark efficient entity], whereas the Guideline Allowance does not."

In the Preliminary Decision, the AER agreed with Chairmont that the hybrid approach would provide a good match over the 10 year transition period to the costs of the AER's BEE.[75] However, the AER determined that it would not adopt the hybrid approach in calculating the return on debt.[76]

"We agree with Chairmont that the hybrid approach will provide a good match over the 10 year transition period to the costs of a benchmark efficient entity entering the transition from the 'on-the-day' regime. However, having regard to wider policy issues, we have maintained the Guideline approach. In particular we consider that proposal and adoption of the hybrid approach on the basis of changes in prevailing rates would introduce bias into regulatory decision making and violate the NPV=0 principle."

There is no scope in the NEL and the NER for regard to be had to these "wider policy" issues as they have been formulated by the AER. Even if these matters as formulated by the AER were properly to be considered in making a decision on the return on debt, neither the purported introduction of "bias" into regulatory decision making, nor alleged "violations" of the NPV=0 principle, provide a logical or reasoned basis to apply a transition to the DRP component of the return on debt.

(i) Bias

In the Preliminary Decision, the AER states that the use of data from earlier periods—which is necessary under the trailing average approach—results in biased estimates and that use of unbiased estimates promotes the ARORO.[77]

"We consider the use of an unbiased estimate is of significant importance in achieving the allowed rate of return objective. This provides for the rate of return to be commensurate with the efficient financing costs of a benchmark efficient entity.

We do not consider the practice of selecting averaging periods after they have occurred is an effective mechanism for achieving the allowed rate of return objective. This is because choosing

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72 Chairmont, *Cost of Debt: Transitional Analysis*, April 2015, p. 47.

73 Chairmont, *Financing Practices Under Regulation: Past and Transitional*, 13 October 2015, p. 14.

74 Chairmont, *Financing Practices Under Regulation: Past and Transitional*, 13 October 2015, p. 13.

75 Preliminary Decision, pp. 3-164.

76 Preliminary Decision, pp. 3-164.

77 Preliminary Decision, pp. 3-190 – 3-191.

> *the averaging period in advance is important for obtaining an unbiased estimate. By bias, here we mean that at the time the averaging period is selected, it is not known with certainty whether it will result in a higher or lower estimate than the estimate from a different potential averaging period.*
>
> *If an averaging period is chosen after the nominated period has occurred, the knowledge of the return on debt at any past point of time may influence the choice. It would not matter if the period were chosen by the AER, the service provider, a user or consumer, the Australian Competition Tribunal or another stakeholder. We made this clear in the Guideline when we specified the importance of determining an averaging period in advance. In particular, we specified that if a service provider could select an averaging period by looking at historical yields, it could introduce an upwards bias."*

In the above extract from the preliminary decision, the AER misunderstands the relevance of the concept of bias in connection with the decision that it is required to make under the NEL and the NER. An estimate of the return on debt will be "unbiased" in a relevant sense when it has a value that is commensurate with expected efficient debt financing costs over the relevant regulatory period.

To the extent the AER's identification of the efficient financing costs of a BEE is correct, it is common ground that the outcome of the efficient financing practice adopted by that entity is that it will face a trailing average DRP over the regulatory period. In the prevailing market conditions, the adoption of a methodology to estimate the return on debt that does not calculate the DRP component using a trailing average approach results in a return on debt below that which is commensurate with expected efficient financing costs. This much is accepted by the AER as it notes in respect of its transition:[78]

> *"Whether the allowed DRP matches, or is higher or lower than, a benchmark efficient entity's financing cashflows with respect to the DRP component depends on whether the prevailing and historical average DRP is higher, lower, or around the same level as each other."*

In the case of the distribution determination to be made for AusNet Services, the preliminary decision notes that prevailing interest rates are currently lower than the historical average of interest rates over the past 10 years,[79] and therefore the AER's transition results in a DRP that is lower than the AER's BEE's financing cashflows. The AER goes on to state in its preliminary determination that the fact that prevailing interest rates are lower than the historical average of interest rates over the past 10 years is simply a consequence of the particular timing of the decision,[80] suggesting that the issue of under-compensation relative to efficient financing costs is an irrelevant matter. However, not only is the AER able to deal with that issue under the NER and the NEL, it is in fact required to deal with it in making its decision; the NER provide that compensation of the provider for efficient financing costs is determinative in selecting the methodology for estimation of the return on debt.

The AER's decision must be in accordance with the NEL, and more specifically, with the NEO and the revenue and pricing principles.[81] The revenue and pricing principles are consistent with and designed to promote the NEO.[82] In discussing the revenue and pricing principles, the Tribunal has previously noted the importance of providing for the recovery of at least efficient costs in the context of efficiency objectives.[83]

> *"It is well accepted in the literature of regulatory economics and in regulatory practice that all these efficiency objectives [efficient investment, efficient provision of services, efficient use of system] are in principle met by setting prices for services that allow the recovery of efficient costs, including the cost of capital commensurate with the riskiness of the investment in the assets (infrastructure or 'system', as the term is used in the NEL) used to provide services.*

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78 Preliminary Decision, pp. 3-189.

79 Preliminary Decision, pp. 3-147.

80 Preliminary Decision, pp. 3-147.

81 NEL s.16.

82 *Application by EnergyAustralia and Others* [2009] ACompT 8, [75].

83 *Application by EnergyAustralia and Others* [2009] ACompT 8, [76]–[78].

> *It might be asked why the NEL principles require that the regulated NSP be provided with the opportunity to recover at least its efficient costs. Why 'at least'? The issue of opportunity is critical to the answer. The regulatory framework does not guarantee recovery of costs, efficient or otherwise. Many events and circumstances, all characterised by various uncertainties, intervene between the ex ante regulatory setting of prices and the ex post assessment of whether costs were recovered. But if, as it were, the dice are loaded against the NSP at the outset by the regulator not providing the opportunity for it to recover its efficient costs (eg, by making insufficient provision for its operating costs or its cost of capital), then the NSP will not have the incentives to achieve the efficiency objectives, the achievement of which is the purpose of the regulatory regime.*
>
> *Thus, given that the regulatory setting of prices is determined prior to ascertaining the actual operating environment that will prevail during the regulatory control period, the regulatory framework may be said to err on the side of allowing at least the recovery of efficient costs. This is in the context of no adjustment generally being made after the event for changed circumstances."*

Given the benchmark efficient financing practices the AER considers its BEE would have adopted, which would result in the BEE facing a trailing average DRP over the 2016 regulatory period, the only basis upon which the AER could permissibly calculate the DRP component of the return on debt otherwise than using a trailing average approach is if the use of that approach would generate a return on debt that is inappropriate, in the sense of being too high or too low having regard to the period in which it is to be applied (being the 2016 regulatory period).

As noted in the extract from the Preliminary Decision above, the AER uses the concept of avoiding 'bias' as meaning that at the time the averaging period is selected, it is not known with certainty whether it will result in a higher or lower estimate than the estimate from a different potential averaging period.[84] However, the relevant task under the NER is to estimate the return on debt that contributes to the ARORO. Use of the trailing average approach to estimate the DRP component will not introduce bias because the use of that approach is required by the NER, as opposed to any foreknowledge of the outcome of selecting that approach on the part of the AER or the service provider. Further, the cost of debt under existing facilities – i.e. facilities on foot for some time – is a known quantity. The fact that it is known does not give rise to 'bias' in any relevant sense.

In any case, to the extent there is foreknowledge of the outcome of selecting the trailing average approach to estimate the DRP component, there is equal foreknowledge of the outcome of selecting the AER's approach. That is, the comparative result of selecting between different approaches to estimating the DRP component was known to (or at least to be expected by) the service provider and the AER at the time the first debt averaging period for the 2016 regulatory period was selected, despite the fact that that averaging period was yet to occur because prevailing interest rates are currently lower than the historical average of interest rates over the past 10 years, as is acknowledged by the AER in the Preliminary Decision.[85] The only thing that is unknown is the precise amount by which the AER approach to estimating the DRP component will deliver a lower return on debt than the trailing average approach to estimating the DRP. As such, the foreknowledge of relevance to the AER's concern about bias in choosing an approach to estimation of the DRP component being as to the outcome of selecting between different methods for use in estimating the DRP component, cannot be remedied by applying the AER's transition to the DRP component.

However, it is in fact the application of the AER's transition approach that results in a biased (in the relevant sense) estimate of the return on debt. Given the AER's assumptions as to a BEE's efficient financing practices in and prior to the 2011 regulatory period, the BEE will face a cost of debt reflecting a 10-year trailing average DRP component. The AER's approach therefore produces a biased estimate of the return on debt insofar as it undercompensates the benchmark efficient operator. It is in this context that the concept of "bias" has any relevance, not in the sense that the AER has used that concept. To use the words of the Tribunal above, the approach of the AER in the

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84 Preliminary Decision, pp. 3-190, 3-191.

85 Preliminary Decision, pp. 3-147.

Preliminary Decision is to "load the dice" against AusNet Services at the outset by not providing the opportunity for AusNet Services to recover its efficient costs by making insufficient provision for the return on debt.

The hybrid transition avoids the bias associated with the AER's transition. As noted in the Preliminary Decision, the hybrid transition:[86]

> *"…provides a good match between the allowed return on debt and a benchmark efficient entity's financing costs over the period it takes a benchmark efficient entity to transition its financing practices to the trailing average approach."*

Once it is accepted that a trailing average approach to the DRP should be taken, there also can be no concerns as to bias or opportunistic behaviour as to selection of averaging periods in light of AusNet Services' submission that the trailing average DRP is calculated by reference to full calendar year averaging periods.

Relevant to the issue of bias, is the AER's criticism that the hybrid transition (AER Option 3) and immediate adoption of the trailing average approach (AER Option 4) are "backwards" looking.[87] However, contrary to the suggestion of the AER that starting with the on the day approach and transitioning to the trailing average approach (AER Option 2) is forward-looking in that each addition to the average occurs at the prevailing rate in an averaging period nominated in advance,[88] a trailing average cost of debt is forward-looking because it is the cost of debt that an entity, which had historically adopted a fixed-rate staggered approach to its debt portfolio, would face now and in the future. An entity in a competitive market would have facilities currently on foot at different interest rates (reflecting the different years in which they were entered into). For example, a DNSP might have a facility at 7%, a facility at 8%, a facility at 9%, a facility at 6.5%, and so on. The interest payable on these facilities constitute current interest costs and they will continue to be applicable in subsequent years in the regulatory period (until those facilities expire). These interest costs are in no sense "backwards looking". The trailing average approach calculates the cost of debt now, and as it will change over the five year regulatory period, it is not possible to know at present precisely what the future costs of debt will be—they will be determined in future regulatory years. This is a forward-looking approach.

In regulatory terms, a "backwards-looking" approach is one that involves the regulator looking back over previous regulatory years to see whether the regulatory allowance matched the actual costs of the regulated entity. This is what the AER does in the Preliminary Decision in appearing to rely on Dr Lally's conclusion that there are some "accumulated differences" between the return on debt estimate and the actual return on debt of a BEE arising from prior periods (this issue is discussed further below).[89] Therefore, it is the AER that uses a backwards-looking analysis by seeking to determine if there was some "windfall gain" arising from the previous regulatory period and then using that to reduce the forward-looking return on debt calculated over the current period.

The ARORO in clause 6.5.2(c) of the NER is that the rate of return for a DNSP is to be 'commensurate with the efficient financing costs of a BEE'. A methodology that estimates the return on debt using a trailing average approach will provide for a return that is commensurate with the financing costs that a BEE will face over the 2016 regulatory period. It is forward-looking in precisely the manner that is relevant under clause 6.5.2(c).

The AER's debt transition is not forward-looking in the relevant sense required by clause 6.5.2(c). Even in respect of the AER's own BEE, being one that would have entered into swaps to hedge the base rate component of its cost of debt, the AER's transition does not provide for a return on debt that is commensurate with the costs that entity will face over a regulatory period. This is because this entity would face a trailing average of the DRP component of its cost of debt. The AER's transition is

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86 Preliminary Decision, pp. 3-164.

87 Preliminary Decision, pp. 3-191.

88 Preliminary Decision, pp. 3-191.

89 Preliminary Decision, pp. 3-180.

designed to provide a lower allowance in respect of the notional DRP component of the cost of debt over the 2016 regulatory period (and beyond). There are two fundamental difficulties with the AER's approach, which are discussed below under the "NPV= 0" topic. These are:

- First, the AER considers that its approach is authorised by the NPV=0 approach to account for assumed positive "accumulated differences" arising from previous regulatory periods. However, the regulatory regime does not permit "true-ups" of this kind based on an ex post review of the regulatory allowance provided for a particular component of a building block and the costs that were actually incurred by the service provider in respect of that component; and
- Secondly, there is no reasoned basis upon which a view can be formed as to whether there has been over-recovery and if so, the quantum of this over-recovery.[90]

(ii) NPV = 0

The second drawback that the AER concluded arises under a hybrid transition is that it can create a mismatch between the allowed return on debt and the efficient financing costs of a BEE over the life of its assets. The AER stated:[91]

> *"Transitioning from the on-the-day approach using the hybrid transition can create a mismatch between the allowed return on debt and the efficient financing costs of a benchmark efficient entity over the life of its assets. The change in the regulatory regime can therefore create windfall gains or losses to service providers or consumers. Windfall gains or losses do not result from a service provider's efficient or inefficient decisions. In effect, they are a side effect of changing the methodology for estimating the return on debt at a particular point in time. They should be avoided, so that economic regulatory decisions deliver outcomes based on efficiency considerations, rather than timing or chance."*

Dr Lally's observation is a very powerful reason not to adopt the AER's transition which would involve one final 'on the day' averaging period that would initially account for 100% of the debt allowance and not work its way out of the allowance until well into the next decade when the trailing average was finally implemented in full. In other words, the AER proposes one final very significant 'windfall gain' or 'windfall loss' depending on when this final 'on the day' averaging period falls compared with the actual costs of a staggered debt portfolio.

In the Preliminary Decision the AER notes that the NEL requires the AER to take into account that a regulated service provider should be provided with a reasonable opportunity to recover at least its efficient costs.[92] Based on advice from Dr Lally, the AER considers that the principle that a service provider be provided with a reasonable opportunity to recover at least its efficient costs is equivalent to the NPV principle.[93] The AER explains that the NPV principle is that the expected present value of a BEE's regulated revenue should reflect the expected present value of its expenditure, plus or minus any efficiency incentive rewards or penalties.[94]

In his advice to the AER, Dr Lally stated that the requirement in the NER that the return on debt be commensurate with the efficient financing costs of a BEE is "not sufficiently precise to be readily implemented and therefore requires formalizing".[95] However, it is unclear why Dr Lally considers the requirement as stated in the NER to be imprecise. The requirement is simply stated and does not

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90 See Preliminary Decision, p 3-183, where the AER states: "due to the unavailability of reliable older data, we are unable to draw reliable conclusions about accumulated windfall gains or losses in preceding regulatory periods". Also: Chairmont, *Financing Practices Under Regulation: Past and Transitional*, 13 October 2015, p 38, where Chairmont says: "it is concluded that there is insufficient history of relevant BBB bond data to measure over and under compensation for an adequate time period to come to any definitive conclusion about the net result over the life of energy assets".

91 Preliminary Decision, pp. 3-165.

92 Preliminary Decision, pp. 3-173.

93 Preliminary Decision, pp. 3-173.

94 Preliminary Decision, pp. 3-173.

95 M Lally, *Review of Submissions on the Cost of Debt*, April 2015, p. 19.

require any overlay or 'formalisation' in order for it to be implemented. What is required is to ascertain efficient financing costs (which as stated above are the costs that would be expected in a workably competitive market or, if that position is rejected, the costs that would be incurred having regard to the AER's assumptions about the financing practices of a BEE under the on-the-day approach to estimating the return on debt) and to design a methodology for estimating the return on debt which, insofar as possible, matches those costs.

Further, the NPV principle cannot be used to override the requirements in the NEL and the NER, and in particular:

- The requirement in the revenue and pricing principles that a service provider be provided with a reasonable opportunity to recover at least the efficient costs it incurs in providing direct control services; and
- The requirement in clause 6.5.2 that the rate of return for a DNSP is to be commensurate with efficient financing costs.

The AER speaks very generally about NPV "over the life of the assets", but does not actually identify what life and what assets, and how any particular debt instrument relates to the life of any particular asset. The relevant asset here is the regulatory asset base of the regulated entity. The asset base is made up of thousands of assets, with lives ranging from five or fewer years to 60 years. The regulatory regime, as applied by the AER, assumes that for a benchmark entity 60 per cent of the regulatory asset base is funded by debt. Debt is not raised in respect of particular assets. Debt instruments do not attach to specific assets. Rather, in respect of the BEE it is assumed that there is simply a portion of the asset base that is funded by debt, and, in accordance with the debt / equity ratio assumed under the regulatory regime, the BEE takes out debt instruments to fund the relevant proportion of its asset base. In this way it is nonsensical to talk about NPV over the life of the assets. To the extent there is a relevant "asset" in a NPV = 0 context, it is the asset base, the life of which, for all practical purposes, is indeterminate and indefinite.

The NPV principle cannot be used to override the requirements in the NEL and the NER, in particular:

- The revenue and pricing principles—which require that a service provider should be provided with a reasonable opportunity to recover at least the efficient costs it incurs in providing direct control services; and
- The ARORO (clause 6.5.2(c))—which requires that the rate of return for a DNSP is to be commensurate with efficient financing costs.

These requirements apply to the decision that the AER is required to make for the 2016 regulatory period. That is, the service provider is to be provided with a reasonable opportunity to recover at least the efficient costs it incurs in providing direct control services in the 2016 regulatory period and the rate of return is to be commensurate with efficient financing costs the service provider will incur in the 2016 regulatory period. As set out below, this follows as a matter of statutory construction.

Section 16(1) of the NEL requires the AER to make a distribution determination in a manner that will or is likely to contribute to the achievement of the NEO. Section 16(2) requires the AER to take into account the revenue and pricing principles when exercising a discretion in making those parts of a distribution determination relating to direct control network services. The AER is bound to do these things in respect of each individual distribution determination it makes. That is, section 16 of the NEL does not require the AER to make determinations for a service provider over some indefinite period of time that collectively or overall contribute to the achievement of the NEO, and take into account the revenue and pricing principles. Such an interpretation would be absurd, including because it would purport to authorise the AER to provide a service provider with less than efficient costs in some periods, and more than efficient costs in other periods, which is clearly inconsistent with the regulatory framework established by the NEL and the NER. Yet this is how the AER seeks to apply the NPV=0 principle in applying its transition to the DRP component of the return on debt.

Various provisions in the NER also make clear that the distribution determination is in respect of a regulatory control period and that the forecasts and estimates used to determine allowed revenues

are based on the best estimate of forecast costs over the regulatory period. For example, the provisions relating to the making of a building block determination refer to determining the annual revenue required for each year of the regulatory control period.[96] Specifically in connection with the rate of return, clause 6.5.2(a) refers to the return on capital for each regulatory year being calculated by applying a rate of return for that regulatory year which is determined in accordance with clause 6.5.2. This last provision indicates that the task is to determine a rate of return for each regulatory year of the regulatory period that satisfies the requirements of the NER (including the ARORO), not determining a rate of return that satisfies those requirements over some other, unspecified, period.

In the Preliminary Decision, the AER concludes that its transition provides a BEE with a reasonable opportunity to recover efficient financing costs over the life of its assets, whereas the hybrid transition does not. It is unclear from the Preliminary Decision precisely what finding underpins this conclusion.[97] In particular:

- The AER explicitly concludes that it has "not relied on the historical balance of over or under recoveries" in making its decision[98]—which suggests that this conclusion does not rest upon a finding as to the existence of any accumulated windfall gains or losses; and
- Yet, at the same time, under the heading 'fairness of returns in expectation' the AER also appears to rely on analysis conducted by Dr Lally which Dr Lally claimed demonstrated that the AER's transition "allows the regulatory regime to account for accumulated differences between the return on debt estimate and the actual return on debt of a benchmark efficient entity".[99]

AusNet Services submits that it is impermissible for the AER to take into account differences between the allowed return on debt and the actual return on debt faced by a benchmark service provider in previous regulatory periods in calculating the return on debt for the 2016 regulatory period (for the reasons discussed below). However, even assuming it was permissible for the AER to do so, in order for the AER to find that the application of its transition to the DRP component of the return on debt provides a BEE with a reasonable opportunity to recover efficient financing costs over the life of its assets, the AER must find that the benchmark service provider enters into the 2016 regulatory period with a positive accumulated difference between the allowed return on debt and the actual return on debt faced by the benchmark service provider in previous regulatory periods. The AER has not done this.

The AER states that it can conclude with a "reasonably high degree of confidence" that the benchmark operator would have been overcompensated over the previous regulatory period.[100] However, the material referred to by the AER does not support such a conclusion for AusNet Services.

The AER ultimately concedes that it is "unable to draw reliable conclusions about accumulated windfall gains or losses in preceding regulatory periods".[101] This finding is supported by Chairmont's October 2015 report.[102] Therefore, in circumstances where it is common ground that the application of the AER's transition to the DRP component of the return on debt will result in the AER's benchmark efficient entity being under-compensated in the 2016 regulatory period, it cannot be concluded that the AER's transition provides a BEE with a reasonable opportunity to recover efficient financing costs over the life of its assets. Assuming any such "look back" was permissible, such a conclusion could only be drawn if the benchmark service provider has "accumulated" gains (i.e. has

96 NER, cl 6.4.3(a).

97 This conclusion is set out in Table 3.23 on pp. 3-184 of the Preliminary Decision.

98 Preliminary Decision, pp. 3-183.

99 Preliminary Decision, pp. 3-180.

100 Preliminary Decision, pp. 3-182.

101 Preliminary Decision, pp. 3-183.

102 Chairmont, *Financing Practices Under Regulation: Past and Transitional*, October 2015, pp. 38–39.

been "overcompensated" for the return on debt in previous regulatory periods) at the commencement of the 2016 regulatory period and that the gains over prior periods are precisely offset by the anticipated shortfall in the return on debt during the 2016 regulatory period.

In any case, as a matter of construction, the statutory regime does not permit the AER to seek to 'clawback' differences between the allowed return on debt and the actual return on debt faced by a benchmark service provider in a prior regulatory period. A fundamental principle of the regulatory regime is that it embodies incentive regulation. Under incentive regulation, regulated revenues are set ex-ante and firms have an incentive to reduce costs to outperform regulated revenues such that over time regulated revenues are expected to converge to the efficient level. Once the regulatory allowance has been set, ex post adjustments are not made to that regulatory allowance based on differences between forecasts and actual costs, other than for the impact of inflation.[103]

Consistent with the incentive regulation basis of the regime established by the NER, the task of setting a regulatory allowance for a regulatory period prescribed by the NER is a forward-looking one. Pursuant to the building blocks approach set out in clause 6.4.3(a) of the NER, there are only a few specified matters that may have occurred in a prior regulatory period that have any relevance to the calculation of the regulatory allowance in the subsequent regulatory period. There are two discrete matters:

- The value of the regulatory asset base; and
- Revenue increments and decrements arising from the application of any relevant incentive scheme, or from the application of a control mechanism in the previous regulatory period.[104]

With the exception of these two matters, the regulatory framework does not operate in a manner that looks back at what has happened in a previous regulatory period in order to calculate the annual revenue requirement for a service provider for each regulatory year of a period in an attempt to capture some prior difference between allowable revenues and costs. Rather, the regulatory framework is designed and operated in such a way that once regulated allowances are set, they are taken to be the efficient allowance for the BEE and there can be no retrospective adjustments for departures from this allowance.

As regulated entities could not match the DRP component of their debt costs to the regulatory allowance for the return on debt under the on-the-day approach, it was inevitable that there would be a mismatch between any debt costs incurred by a benchmark regulated entity and the return on debt allowance for that entity. However, that was simply a consequence of the regulatory approach—the allowance was the allowance and regulated entities were required to manage their operations in accordance with that allowance. This much is accepted by the AER:[105]

> "*Incentive based regulation uses the combination of financial rewards and penalties to promote efficient behaviour. In particular, it means that where a service provider:*
>
> - *matches the efficient regulatory benchmark—it recovers its efficient costs. We consider this would be the outcome for the benchmark efficient entity. As it operates efficiently, it would recover its efficient costs.*
> - *does not match the regulatory benchmark—it keeps the financial benefits or financial detriments that flow from its actions. An example of this would be where a service provider is able to source debt at rates cheaper than the allowed return on debt it is able to keep the difference.*

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103 Even where the NER permit ex post review of actual expenditure, they do not permit any ex post adjustment to be made to the regulatory allowance that was set in the distribution determination. See NER, cl S6.2.2A which permits reductions to the amount of capital expenditure that would otherwise be added to the regulatory asset base where the AER has found that the expenditure does not reasonably reflect the capital expenditure criteria. The threshold to be passed before any such reduction can be made is that the sum of all capital expenditure incurred during the relevant review period exceeds the sum of the forecast capital expenditure accepted or substituted by the AER for the review period, and any reduction cannot be greater than this amount (cl S6.2.2A(g)).

104 NER, clauses 6.5.1(e) and 6.4.3(a)(5) and (6).

105 Preliminary Decision, p. 3-170.

- *adopts a risk position which is either higher or lower risk than that embedded in the regulatory process—it keeps the financial benefits or wears the financial detriments that flow from its actions."*

The NER require that the rate of return for a regulatory period is commensurate with the efficient financing costs of a BEE. As noted by Professor Gray:[106]

> *"The new Rules state that for each determination the allowed rate of return must be commensurate with the efficient financing costs of a benchmark efficient entity. The Rules do not provide for an exception in cases where the regulator considers that it should set the allowed return to be different from the efficient financing costs of a benchmark efficient entity in order to square up the regulator's assessment of any windfall gains or losses from prior regulatory periods."*

Professor Gray notes the following further problems with the AER's decision to seek to erode the perceived windfall gain:

- The amount of any gain to be eroded or 'clawed back' will depend on how many prior regulatory periods are included in the regulator's mental accounting. It is possible that any perceived windfall gain that may have been accrued in the prior regulatory period has already been squared up by shortfalls in prior regulatory periods preceding the prior regulatory period.[107]
- The perceived windfall gains may have been balanced out by other features of the prior regulatory determination. In periods where investors are requiring higher risk premiums on debt investments in the benchmark firm, for example, they will also be requiring higher equity risk premiums in the same benchmark firm. However, the AER's approach has been to use an essentially fixed MRP in its allowed return on equity.[108]

The imposition of the AER's transition is also at odds with the 2012 Rule Amendment, which is directed at better matching the regulated return on debt (and the overall rate of return) with costs that would be incurred pursuant to efficient financing practices. As noted by the AER's consultants, with respect to the DRP component of the return on debt, there is no mismatch between the cost incurred by the benchmark efficient firm and that allowed by a trailing average approach after the regime change. As such, no transitional method appears to be warranted and, if one was used, Lally notes, it would introduce a mismatch that would not otherwise arise.[109]

In summary, the AER's NPV=0 justification:

- Is inconsistent with the ARORO which, as noted above, requires that the allowed rate of return for each regulatory year reflects the efficient financing costs of a BEE for that year;
- Is inconsistent with the NEO and the revenue and principles which demand that a service provider be provided with a reasonable opportunity to recover at least the efficient costs incurred in providing regulated services; and
- Introduces regulatory risk and is inconsistent with incentive-based regulation in that it introduces an ex post adjustment mechanism after a regulated firm has benefited from operating in a way that the regulator itself considers to be efficient.

In any event, there is no evidence that adopting a hybrid transition would violate the NPV=0 principle, as claimed by the AER. This is because, as acknowledged by the AER and as advised by

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106 SFG, *Return on Debt Transition Arrangements under the NGR and NER: Report for Jemena Gas Networks, Jemena Electricity Networks, Citipower, Powercor and United Energy*, 27 February 2015, p. 4.

107 SFG, *Return on Debt Transition Arrangements under the NGR and NER: Report for Jemena Gas Networks, Jemena Electricity Networks, Citipower, Powercor and United Energy*, 27 February 2015, p. 26.

108 SFG, *Return on Debt Transition Arrangements under the NGR and NER: Report for Jemena Gas Networks, Jemena Electricity Networks, Citipower, Powercor and United Energy*, 27 February 2015, pp. 25–26.

109 Lally, *Transitional Arrangements for the Cost of Debt*, 24 November 2014, p. 7.

Chairmont, it cannot be ascertained with any certainty the extent to which there are accumulated windfall gains or losses from prior periods.

In short, imposing a transition for the DRP component of the return on debt where that component cannot be hedged under the on-the-day approach is inconsistent with the NEO, the revenue and pricing principles, and the requirements of the NER. In particular, it will not provide a BEE with a return on debt that is commensurate with efficient financing costs or provide a reasonable opportunity to recover at least the efficient costs the BEE incurs in providing direct control services.

(d) Other matters relied on by the AER in support of its transition

The AER finds that its transition has two further positive attributes, in addition to providing a service provider with a reasonable opportunity to recover its efficient financing costs over the life of its assets and being unbiased. These are that:

- The transition maintains the outcomes of the service provider's past financing decisions, consistent with the principles of incentive regulation; and
- Avoids practical problems with the use of historical data "as estimating the return on debt during the GFC is a difficult and contentious exercise".[110]

Dealing with the second point first, the AER itself notes that it is satisfied that "this is a relatively minor issue".[111] The only issue with respect to historical data needed to estimate the trailing average approach relates to the DRP component of the return on debt, and only relates to the selection of which data source to use, as opposed to the data not being available at all.[112] The AER's consultant Chairmont does not note any particular difficulty with the use of historical data to estimate a return on debt using the trailing average approach and states that it is likely that a reasonable estimate could be determined.[113]

The AER's finding that maintaining the on-the-day approach is consistent with incentive regulation is illogical. The AER states that effective ex ante incentive regulation relies on service providers understanding and accepting the financial consequences of their decisions at the time they make their decision.[114] However, the AER acknowledges that service providers have limited control over the DRP component of the cost of debt. As such, as a general matter, there is no relevant incentive with respect to this component that service providers could be said to have 'understood and accepted the financial consequences of their decisions'. Therefore, to the extent maintenance of outcomes of past financing decisions consistent with principles of incentive regulation is relevant, it does not support either the continuation of the on-the-day approach or the AER's transition. It does however support the hybrid transition because, as noted by the AER, application of the hybrid transition would maintain the incentive that service providers should reduce risks that are within their control.[115]

(e) Conclusion

For the above reasons, AusNet Services considers that the trailing average approach should be implemented immediately, with no transition.

Alternatively, if the AER's approach of estimating efficient financing costs by reference to the financing practices that would emerge under regulation were correct, the appropriate approach would be to adopt a hybrid form of transition where only the hedged base rate component of the return on debt is subject to a transition. This is because the AER has concluded that under the on-the-day

110 Preliminary Decision, pp. 3-163.

111 Preliminary Decision, pp. 3-163.

112 Lally, *Transitional Arrangements for the Cost of Debt*, 24 November 2014, p. 15.

113 Chairmont, *Cost of Debt: Transitional Analysis*, April 2015, p. 47.

114 Preliminary Decision, pp. 3-171.

115 Preliminary Decision, Pp. 3-172.

approach, an efficient financing practice would have been to engage in hedging of the base rate. By contrast, the AER has conceded that the DRP component cannot be—and could not have been in the past—hedged, with the result that there is no reason for a transition to be applied to it.

If a transition is applied to the base rate, then it is necessary to consider to what degree hedging would be efficient. A transition can only apply to the base rate component to the extent that the BEE used hedging to match the previous on-the-day approach to setting the allowed return on debt, and one cannot simply assume that 100% of that component was hedged under that approach without evidence to support it.

The evidence demonstrates that the efficient level of hedging under the previous on-the-day approach was significantly less than 100%. Empirical analysis by CEG demonstrates a hedging ratio of approximately one third would have minimised interest rate risk.[116] In a further expert report accompanying this submission, CEG considers and responds to criticisms made by Chairmont and Professor Lally of this analysis. Following this review of the Chairmont and Lally reports, CEG's view as to the optimal hedging ratio under the previous on-the-day approach is unchanged.[117]

Therefore, if a hybrid transition is to be adopted (i.e. if the AER's view of efficient financing costs were correct), the transition should only apply to one third of the base rate, reflecting the extent to which a BEE would have been expected to hedge the base rate component.

7.3.4 Benchmark credit rating and term

(a) Credit rating

AusNet Services considers that adopting a BBB+ credit rating assumption is highly conservative, in the sense that it is likely to understate the degree of risk faced by AusNet Services in the supply of standard control services.

The empirical evidence referred to by AER in support of a BBB+ rating, when correctly applied and interpreted, supports a BBB to BBB+ rating. As noted by the AER, the median credit rating over the past ten years (2006-2015) across all businesses in the AER's sample is BBB to BBB+.[118] A credit rating of BBB to BBB+ is also consistent with the advice from Professor Lally to the AER.[119]

Therefore, adoption of a BBB+ credit rating assumption is likely to lead to under-estimation of the efficient financing costs of a BEE facing a similar degree of risk as that which applies in to AusNet Services in respect of the supply of standard control services. In short, AusNet Services may be inadequately compensated for efficient financing costs, creating a risk that AusNet Services cannot attract the capital required to undertake efficient investment.

AusNet Services notes that if a broad BBB band data series is available and is used to estimate the return on debt, then whether a BBB or BBB+ credit rating assumption is adopted is of little practical consequence. However if the AER were to start using a BBB+-specific data series (should one become available), it is likely that this would lead to under-estimation of the efficient financing costs of a BEE facing a similar degree of risk as that which applies to AusNet Services in respect of the supply of standard control services. This is because a BBB+-specific data series is likely to over-estimate the cost of debt for businesses with a risk profile in the BBB to BBB+ band.

For the same reasons, continuing to use a broad BBB band data series to estimate the return on debt is not materially 'favourable' to AusNet Services, as suggested by the AER.[120] Rather, given

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116 CEG, *Efficient Use of Interest Rate Swaps to Manage Interest Rate Risk*, June 2015; CEG, *Critique of the AER's approach to transition*, January 2016, section 4 (Appendix 7A).

117 CEG, *Critique of the AER's approach to transition*, January 2016

118 Preliminary Decision, pp. 3-591 (Table 3-70).

119 Lally, *Implementation issues for the cost of debt*, November 2014, p. 4.

120 Preliminary Decision, p. 50.

that the evidence supports a credit rating of BBB to BBB+, use of a broad BBB band data series is entirely appropriate.

(b) Term

Empirical evidence continues to support a benchmark term of debt of 10 years. This includes evidence for Australian energy network businesses, and for businesses operating in other sectors and jurisdictions facing a similar degree of risk.[121]

AusNet Services does not agree with the statement in the Preliminary Decision that a 10 year term assumption is more likely to overstate than understate the debt term (and therefore, the efficient financing costs) of a BEE.[122] A 10 year term assumption properly reflects the efficient financing practices of a BEE facing a similar degree of risk to that faced by AusNet Services in the provision of standard control services.

7.3.5 Source of data used to estimate the return on debt

AusNet Services submits that the 10 year, BBB-rated yield curves estimated by the RBA and Reuters should be applied with a 50:50 weighting to estimate the cost of debt in the 2016-20 regulatory period.

AusNet Services agrees with the AER regarding the following principles:

- The use of a third party data series (or multiple series) is appropriate as it:
  - Can be practically applied in the annual debt update process;
  - Is independent information developed by finance experts independently from the regulatory process; and
  - Reduces the scope for debate on debt instrument selection and curve fitting.
- Relying on a greater number of data sources is preferable where:
  - No one curve is clearly superior (although we do consider that where a curve is clearly inferior it should not be relied upon); and
  - A simple average of the two curves will reduce the likely price shock if either curve becomes unavailable or produces erroneous estimates during the period.

Consistent with these principles, in its Initial Regulatory Proposal AusNet Services proposed to adopt the AER's preferred application of a 50:50 weighting of the RBA and Bloomberg (BVAL) BBB-rated yield curves to estimate the historical and prevailing return on debt in the 2016-20 regulatory period. The AER accepted its approach in its Preliminary Determination.

However, since its Initial Regulatory Proposal was submitted in April 2015 two developments have led AusNet Services to revise its position:

- The publication of an additional independent third party data series by Reuters; and
- Heightened concern regarding the accuracy of Bloomberg's BVAL curve.

These are discussed further below.

(a) Publication of an additional independent third party data series by Reuters

In May 2015, Reuters commenced publication of a 10 year, BBB-rated, par yield curve. Reuters is a reputable and independent provider and, as such, it should be applied to set the cost of debt in the 2016-20 regulatory period.

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121 PwC, *Energy Networks Association: Benchmark term of debt assumption*, June 2013. Based on a sample including Australian, UK and US businesses operating in the energy and water sectors, PwC concluded that such businesses issued debt with a weighted average term in the range of 10 to 21 years.

122 Preliminary Decision, pp. 3-212.

An assessment of the Reuters data series against appropriate criteria for assessing third party data series has been carried out by CEG (Appendix 7B – CEG, Criteria for Assessing Fair Value Curves). CEG found that the performance of Reuters' against the relevant criteria is '*at least as good as Bloomberg's performance'*. In addition, the sample of bonds underpinning the Reuters' curve is wider than those used by Bloomberg. This is consistent with the above principle that relying on a greater number of data sources, where available, is preferable.

(b) Concerns regarding the accuracy of the Bloomberg data series

AusNet Services has previously expressed concern with the ability of the Bloomberg curve to reflect prevailing market conditions in a timely manner. There have been several instances in the past where AusNet Services has witnessed a lag between the cost of debt observed in the market place (e.g. through bond issuances) and the cost of debt estimated in the BVAL curve. On a number of occasions, AusNet Services has contacted Bloomberg about a discrepancy between its cost of debt estimates and the cost of debt observed in the market. On at least one occasion (following the Asciano issue in May 2015), Bloomberg has later made adjustments to the BVAL curve to narrow the discrepancy. This lag can be observed in Figure 18 of CEG's report (Appendix 7B).

The observed lag can be particularly problematic where short averaging periods are applied to estimate the prevailing cost of debt. A mismatch between the debt allowance and the actual cost of issuing debt during a specific averaging period will naturally result where there is a lag between prevailing market rates and published third party data. As NER 6.5.2(k)(1) requires the AER to have regard to the desirability of minimising the regulated return on debt and efficient cost of debt, this is a factor which should be taken into account in assessing the suitability of the third party data series to be applied.

The observed lag led to AusNet Services no longer proposing to rely on the Bloomberg curve in its Transmission Revenue Proposal submitted on 30 October 2015.

Given these concerns, the use of Bloomberg's BVAL curve in estimating the cost of debt is no longer supported by AusNet Services.

The Revised Regulatory Proposal accepts the AER's approach to extrapolating the third party data series with effective tenors less than the benchmark term of 10 years. It is noted that the materiality of the extrapolation methodology is far lower given that the Bloomberg data series (which previously had the greatest discrepancy between the published tenor and the benchmark) is no longer relied upon by AusNet Services, and, even if it were, Bloomberg has recently commenced publishing a 10 year curve.

7.3.6 Estimation of the prevailing return on debt for the placeholder

The Revised Regulatory Proposal applies the prevailing return on debt based on a 20 day averaging period (the 20 business days to 30 September 2015) using the RBA and Reuters data series. For the first year of the regulatory period, this prevailing observation is given a 10% weighting.

The RBA data series has been used to determine the 9 years of historical debt costs which are included in the proposed cost of debt to apply in the first year of the 2016-20 regulatory period. As the Reuters curve has only been published since May 2015, it was not possible to also use this curve to derive the historical cost of debt.

7.3.7 Annual updating of the return on debt

AusNet Services accepts the AER's Preliminary Determination in respect of annual updating. Under this approach, 10% of the cost of debt will be updated each year based on prevailing rates.

AusNet Services submits that the prevailing rates will be estimated in future years based on a 50:50 weighting of the RBA and Reuters 10 year curves. The RBA curve will be extrapolated using the AER's preferred methodology where its published effective tenor is less than 10 years.

In its Initial Regulatory Proposal AusNet Services nominated averaging periods to be used to estimate the prevailing cost of debt for each year of the regulatory period. The AER accepted AusNet Services' proposed averaging periods in its Preliminary Determination. AusNet Services accepts the AER's Preliminary Determination regarding the timing of its proposed debt averaging periods, as set out in confidential Appendix K – Rate of return averaging periods of the Preliminary Determination.

The financial arrangements made by AusNet Services for its first averaging period are consistent with the application of a trailing average approach to estimating the cost of debt. Were the on-the-day approach to continue, different financial arrangements would have been made. For this reason, if the AER was to return to an on-the-day approach there would be a detrimental financial impact.

The proposed immediate transition to the trailing average cost of debt incorporates historical rates. The path of the cost of debt, assuming prevailing rates remain flat over the regulatory period, has been input into the PTRM. As a large component of the proposed cost of debt over the next five years under the proposed transition approach is known, this provides a more accurate indication of expected revenue over the 2016-20 regulatory period, compared with applying the proposed cost of debt in year one to all five years of the period.

For each of the four years 2017-2020, the annual revenue requirement will be updated by adjusting the return on capital building block for that year as follows:

$$\Delta RocBlock_t = \Delta cod \times 60\% \times oRAB_t$$

Where:

- $\Delta RocBlock_t$ is the Adjustment to the return on capital building block in regulatory year t;
- Δcod is the change in the trailing average cost of debt in regulatory year t determined in accordance with the process set out in this section 4 of the proposal relative to the cost of debt for that year applied by the AER in making its distribution determination; and
- oRABt is the opening RAB in year t set out in the distribution determination.

Note: The 60% represents the gearing ratio assumed for the benchmark firm.

For clarity, in addition to the formula required under NER 6.5.2(l), we have also included other formulae to describe other aspects of our proposal. Above we have provided the formula for extrapolation of the services. The formula to then be used for each year of the regulatory period is in the box below.

The return on debt for each Regulatory Year of the Revenue Period is to be calculated as follows:

For Regulatory Year 2016: $kd_{2016} = T_{2016}$;

For Regulatory Year 2017: $kd_{2017} = (0.9 \times T_{2017}) + (0.1 \times R_{2017})$;

For Regulatory Year 2018: $kd_{2018} = (0.8 \times T_{2018}) + (0.1 \times R_{2017}) + (0.1 \times R_{2018})$;

For Regulatory Year 2019: $kd_{2019} = (0.7 \times T_{2019}) + (0.1 \times R_{2017}) + (0.1 \times R_{2018}) + (0.1 \times R_{2019})$;

For Regulatory Year 2020: $kd_{2020} = (0.6 \times T_{2020}) + (0.1 \times R_{2017}) + (0.1 \times R_{2018}) + (0.1 \times R_{2019}) + (0.1 \times R_{2020}) + swap$,

where:

- k_{dt} is the return on debt for year t of the Regulatory Period;
- T_{20XX} is the cost of debt that feeds into the calculation of kd_{2016} *and* is not yet matured in 20XX; and
- R_t is the annual return on debt observation for each year t of the regulatory period (other than 2016) calculated according to the methodology set out above. The data must also be annualized consistent with section 6.3.3 of the Guideline.

The formula above differs from that proposed in the Initial Regulatory Proposal in that it does not include swap transaction costs. This is because the approach to the cost of debt transition has changed and no longer provides for the use of swaps so the allowance for swap transaction costs is no longer proposed.

7.3.8 New issue premium

As noted in AusNet Services' Initial Regulatory Proposal, the third party data series that are used to estimate the return on debt are based on observations in the secondary debt market. These data sources therefore do not reflect any premium required for new debt issues.

AusNet Services' Initial Regulatory Proposal and the supporting expert report from CEG set out the economic rationale and empirical evidence for a new issue premium. CEG's analysis indicates that the best estimate of the new issue premium that is relevant to a benchmark debt management strategy of issuing 10 year BBB rated debt is 27 basis points.[123]

In the Preliminary Decision, the AER states that "the empirical evidence on the new issue premium is inconclusive" and that "there does not appear to be a consensus among experts on how the new issue premium should be measured".[124] The AER also states that it has some specific concerns with CEG's methodology.

AusNet Services does not agree with the concerns expressed by the AER in relation to CEG's methodology.

AusNet Services considers that CEG's analysis provides clear evidence of a positive and significant new issue premium. At a minimum, this evidence demonstrates that making no allowance for a new issues premium (as AusNet Services does) is highly conservative, in the sense that it is likely to lead to under-estimation of the efficient financing costs of a BEE.

7.4 Return on Equity

7.4.1 Introduction

The AER's Preliminary Decision in relation to the return on equity is based on the following reasoning:

1 The AER considers that the SLCAPM should be used as the foundation model to estimate the return on equity. AusNet Services understands that the AER's reasons for adopting this approach are as follows:

   (a) the SLCAPM model is the current standard asset pricing model of modern finance both in theory and in practice;[125]

   (b) the SLCAPM is superior to all other models considered by the AER, in terms of estimating the return on equity of the BEE;[126]

   (c) use of the SLCAPM as the foundation model, at least as applied by the AER, will not result in a downward biased estimate of the cost of equity capital;[127] and

   (d) use of alternative models will not lead to an outcome which better achieves the ARORO.[128] The AER expresses a number of concerns in relation to these alternative models.

123 CEG, *New Issue Premium*, October 2014, p. 54.

124 Preliminary Decision, pp. 3-206.

125 Preliminary Decision, pp. 3-32.

126 Preliminary Decision, pp. 3-32.

127 Preliminary Decision, pp. 3-62.

2 An equity beta of 0.7, when applied in the SLCAPM, will deliver a return on equity that contributes to achievement of the ARORO. The AER considers that:[129]

(a) a reasonable range for the equity beta based on evidence from samples of domestic energy network businesses is 0.4 to 0.7; and

(b) additional information taken into account by the AER – specifically empirical estimates for international energy networks and the theoretical principles underpinning the Black CAPM – indicate that an equity beta at the top of this range is appropriate.

3 An MRP of 6.5% reflects prevailing market conditions and contributes to achievement of the ARORO.[130]

The AER determines a "baseline" estimate of the MRP of 6.0 per cent based on historical data, and then uses DGM analysis and other evidence to determine whether its estimate should be above or below that baseline. The AER considered that DGM evidence could justify a point estimate above the 6.0 per cent baseline, but did not support a point estimate above the top of the range implied by historical excess returns (6.5 per cent).

The AER adopts a different interpretation of some of the empirical evidence to AusNet Services, including:

(a) the AER adopts a different interpretation of the historical excess returns data;

(b) the AER does not agree that the Wright approach should be used to estimate the MRP. This is because the AER considers that the Wright approach is an alternative implementation of the CAPM, designed to produce information at the return on equity level;

(c) the AER does not agree that independent valuation reports should inform MRP estimation (only the overall return on equity); and

(d) the AER does not agree with SFG's construction of the DGM.

4 The return on equity estimate from the SLCAPM is broadly supported by:[131]

(a) estimates using the Wright approach;

(b) estimates from other market participants, including practitioners and regulators, particularly estimates used in Grant Samuel's recent report for Envestra;

(c) the fact that it is above the prevailing return on debt; and

(d) the fact that the regulatory regime to date has been supportive of investment.

This reasoning is based on a number of errors of fact and logic, which are described in detail below. As a consequence of these errors, the return on equity determined by the AER will not contribute to the achievement of the ARORO and does not reflect prevailing conditions in the market for equity funds. For reasons discussed below, the return on equity derived from the AER's approach will be below what is required to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers.

AusNet Services continues to believe that the ARORO is best achieved through an approach that properly has regard to estimates from all relevant return on equity models. In its initial proposal, AusNet Services proposed that each of the SL CAPM, the Black CAPM, the FFM and DGM be estimated, and that these estimates each be given equal weight in deriving a return on equity

128 Preliminary Decision, pp. 3-32 – 3-33.

129 Preliminary Decision, pp. 3-36 – 3-37.

130 Preliminary Decision, pp. 3-34 – 3-35.

131 Preliminary Decision, pp. 3-39 – 3-40.

estimate. AusNet Services maintains its view that this approach would best achieve the ARORO. This approach leads to an estimate of the prevailing return on equity of 9.8 per cent.

However, if the AER proposes to continue relying solely on the SL CAPM to estimate the return on equity, the AER must change the way it implements this model. The way in which the SL CAPM is applied in the Preliminary Decision leads to a return on equity that is not consistent with the ARORO and does not reflect prevailing market conditions. The AER does not properly recognise the weaknesses of the SL CAPM, nor does it account for these weaknesses in its application of the model. Further, the AER's practice of applying an effectively fixed risk premium to a variable risk-free rate is not appropriate in current market conditions, since it leads to the return on equity moving in lock-step with changes in the risk-free rate.

This submission outlines an alternative approach that involves properly adjusting SL CAPM parameters to deliver a return on equity that contributes to the achievement of the ARORO and reflects prevailing market conditions. This involves:

- Making a transparent and empirically based adjustment to the equity beta estimate to account for the known shortcomings of the SL CAPM, particularly low beta bias and book-to market bias; and
- Deriving the MRP in a way that gives appropriate weight to measures of the prevailing (current) MRP.

This leads to an estimate of the prevailing return on equity of 9.9 per cent.

7.4.2 The AER's return on equity estimate is below what is required by the market

The Preliminary Decision does not point to any genuine consideration of whether the AER's estimate of the return on equity of 7.3% contributes to the ARORO and is commensurate with prevailing market conditions. The AER has rigidly applied its foundation model without proper consideration of whether the output of this model is consistent with the requirements of the NER.

This is despite evidence, including from the AER's own "cross-checks", that its return on equity estimate is below the efficient equity financing costs of the BEE and not commensurate with prevailing market conditions.

In particular, the evidence presented in the Preliminary Decision indicates that:

- The AER's estimate of the return on equity is below any comparable recent estimate from market practitioners. Specifically:
    - the AER's estimate is below the lower end of the range of imputation-adjusted estimates of the return on equity from independent expert reports surveyed by the AER (a range of 8.98 – 14.67 per cent);[132] and
    - the AER's estimate is at the bottom of the range of imputation-adjusted estimates of the return on equity from recent broker reports (a range of 7.3 – 9.3 per cent);[133]
- The AER's estimate of the return on equity is below the range indicated by the 'Wright approach'. If properly applied (i.e. with an equity beta that reflects the AER's estimate of this parameter), the Wright approach indicates a range for the return on equity of 7.8 to 9.7 per cent;[134]
- The AER's estimate of the return on equity is below that indicated by current market prices for traded equities and the AER's DGM market-wide analysis. The AER's DGM-based

132 Preliminary Decision, pp. 3-518.

133 Preliminary Decision, pp. 3-521.

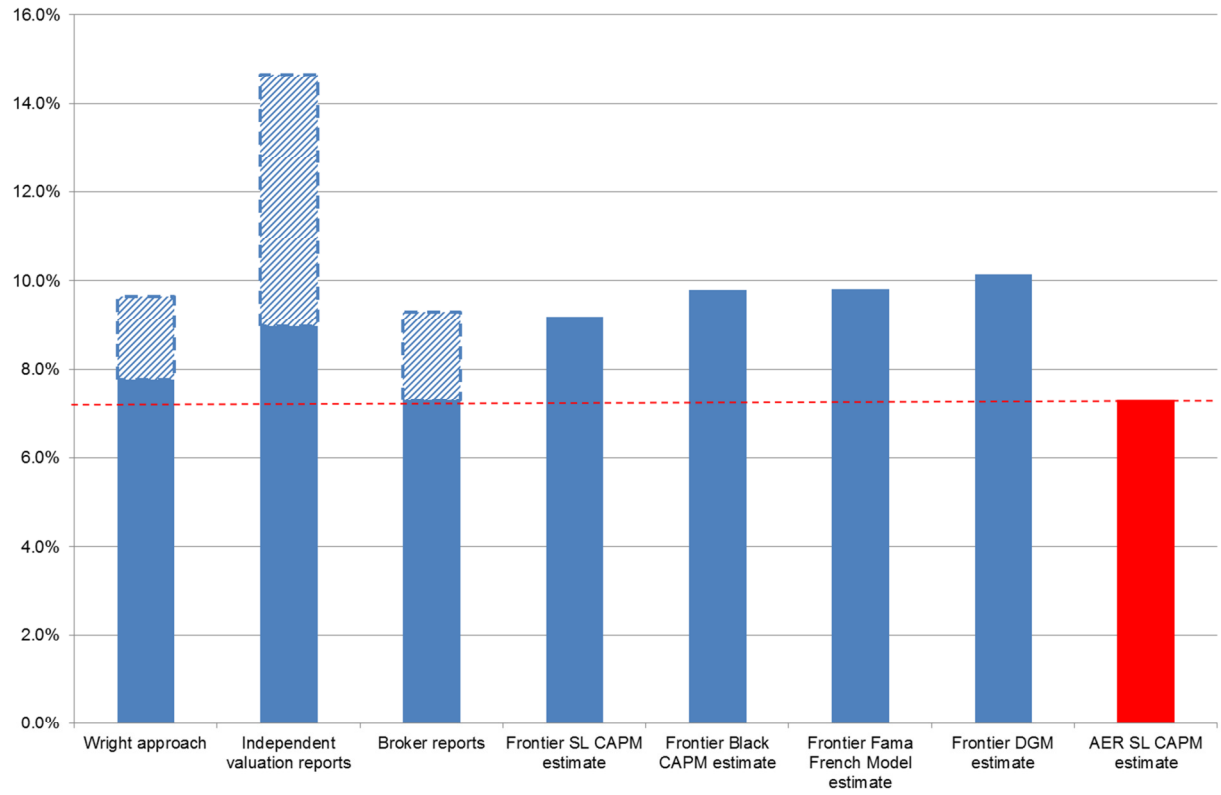
134 Preliminary Decision, pp. 3-513.

estimates of the MRP implied a range for the market return of 10.26 to 11.36 per cent,[135] which is significantly higher than the AER's implied estimate of the market return of 9.26 per cent;[136] and

- The AER estimate based on its implementation of the SL CAPM is below estimates from all other relevant return on equity models. Frontier estimates a return on equity of 9.8 per cent using the Black CAPM, 9.8 per cent using the FFM and 10.2 per cent using the DGM, and 9.2 per cent based on its own parameters for the SL CAPM.[137]

The above evidence is summarised in Figure 7.1 below.

Figure 7.1: Comparison of AER return on equity estimate with other available estimates



Note: Shaded bars indicate ranges of estimates from broker reports, independent expert reports and the Wright approach.

The outcome observed above is due to the AER mechanistically applying the foundation model approach developed in the Rate of Return Guidelines, without any meaningful consideration of whether such an approach leads to an estimate of the return on equity that is consistent with the ARORO and commensurate with prevailing market conditions.

More specifically, this is the result of the AER:

- Relying solely on the output of a model that is known to produce biased estimates, without properly correcting for that bias;
- Applying this model in a way that does not reflect market practice and which results in the return on equity simply tracking movements in the risk-free rate; and
- Making errors in the interpretation of key evidence.

135 The AER's DGM estimates of the MRP range from 7.5 to 8.6 per cent (Preliminary Decision, p 3-362). These are added to the risk-free rate of 2.76 per cent to derive estimates of the market return from the AER's DGM.

136 This is calculated as the sum of the risk-free rate (2.76 per cent) and the AER's estimate of the MRP (6.5 per cent).

137 Frontier Economics, *The required return on equity under a foundation model approach*, January 2016, p 7.

Each of these errors in the AER's approach is addressed in the following sections.

7.4.3 The AER's reliance on the SL CAPM

The AER concluded that the output of its application of the SL CAPM should be used as its estimate of the cost of equity, including because:

- The SL CAPM is the superior model;
- The SL CAPM, at least as applied by the AER, does not produce biased estimates of the required return on equity; and
- Other proposed models are not fit for purpose, including because these other models are focussed on explaining historical market outcomes, rather estimating the required return on equity, consistent with the ARORO.

AusNet Services considers that each of these critical findings is not consistent with the evidence before the AER.

(a) The AER has erred in finding that the SL CAPM is the clearly superior model

The AER remains of the view that "the SL CAPM is the clearly superior model to use as the foundation model".[138] However no evidence is cited in support of this statement, and AusNet Services is not aware of any evidence that supports this view.

The evidence before the AER in fact shows that the SL CAPM has known weaknesses. In particular, as discussed below, the SL CAPM is known to produce downwardly biased estimates of the required return on equity for low-beta stocks.

AusNet Services notes that none of the expert reports commissioned by the AER state that the SL CAPM is superior to other models. AusNet Services is not aware of any expert report before the AER which expresses this view.

Indeed McKenzie & Partington observe:[139]

> *"…the [SLCAPM] has its weaknesses, but these are well documented and in many cases can either be diagnosed or perhaps compensated for in empirical practice."*

As discussed below, it is not clear whether the AER has sought to compensate for the known weaknesses of the SL CAPM, as suggested by McKenzie & Partington, or whether it has simply ignored them. To the extent that the AER has sought to compensate for these weaknesses, by taking the upper bound of its equity beta range, it cannot reasonably be satisfied it has adequately compensated for their effect, because it does not seek to analyse or quantify this effect.

McKenzie & Partington also state:[140]

> *"The final estimate of the expected return on equity may have regard to a broad range of relevant material including a range of multifactor models such as the Fama and French (1993) and the APT of Ross (1976), inter alia. Many of these competing models nest this foundation model and so potentially make more use of available information."*

Certainly McKenzie and Partington do not appear to view the SL CAPM as superior to all other models. Rather they acknowledge the weaknesses of the model and recommend that any estimate of the return on equity may take into account a wider range of models, including the FFM.

Associate Professor Handley also acknowledges the critical weakness of the SL CAPM, noting:[141]

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138 Preliminary Decision, pp. 3-533.

139 Michael McKenzie and Graham Partington, *Report to the AER – Part A: Return on Equity*, October 2014, p. 9.

140 Michael McKenzie and Graham Partington, *Report to the AER – Part A: Return on Equity*, October 2014, p. 9.

141 John C Handley, *Advice on the Return on Equity: Report prepared for the Australian Energy Regulator*, 16 October 2014, p. 5.

> *"An apparent weakness of the Sharpe-CAPM is the empirical finding, for example by Black, Jensen and Scholes (1972) and Fama and French (2004), that the relation between beta and average stock returns is too flat compared to what would otherwise be predicted by the Sharpe-CAPM – a result often referred to as the low beta bias."*

The weaknesses and limitations of the SL CAPM were identified in AusNet Services' original proposal and the supporting expert reports. In particular, SFG referred to the large body of empirical evidence which shows that the SL CAPM will tend to produce biased estimates of the required return on a low-beta or value stock, and may not fully capture all factors affecting stock returns.[142] SFG's reports also explained how other models such as the Black CAPM and FFM were developed specifically to overcome these known weaknesses in the SL CAPM design.

Some of the key empirical evidence demonstrating weakness in the SL CAPM is summarised in Table 7.1 below.

Table 7.1: Summary of key empirical evidence in relation to SL CAPM performance

Study	Key conclusions
Black, Jensen and Scholes (1972)[143]	Black, Jensen and Scholes (1972) tested the SL CAPM theory against empirical data. Their results indicated that the empirical relationship between systematic risk exposure and returns was not consistent with SL CAPM theory. The relationship in the empirical data indicated a higher intercept and flatter slope than that indicated by the SL CAPM. The authors conclude that their results appeared to be strong evidence favouring rejection of the traditional form of the asset pricing model (i.e. the SL CAPM).
Friend and Blume (1970)[144]	The empirical analysis by Friend and Blume (1970) indicates that low-beta stocks generate higher returns than the SL CAPM would suggest and high-beta stocks tend to generate lower returns than the SL CAPM predicts.
Fama and Macbeth (1973)[145]	Fama and Macbeth (1973) empirically test the assumption of the SL CAPM that the return on a zero-beta asset will be equal to the risk-free rate. Consistent with the earlier findings of Black, Jensen and Scholes (1972), they conclude that this assumption is not supported by the empirical data.
Rosenberg, Reid and Landstein (1985)[146]	The study by Rosenberg, Reid and Landstein, as well as other studies identified a number of SL CAPM anomalies, where stock-specific characteristics seemed related to differences in returns. In particular, the book equity value divided by the market equity value (book-to-market

142 SFG, *The required return on equity for regulated gas and electricity network businesses*, June 2014, [46]–[60].

143 Black, F., M.C. Jensen, and M. Scholes, 1972, "The Capital Asset Pricing Model: Some empirical tests," in *Studies in the Theory of Capital Markets*, Michael C. Jensen, ed., New York: Praeger, 79–121, referred to in : SFG, *The required return on equity for regulated gas and electricity network businesses*, 6 June 2014, pp. 20-22.

144 Friend, I., M. Blume, 1970, "Measurement of Portfolio Performance under Uncertainty," *American Economic Review*, 60, 561–75, referred to in : SFG, *The required return on equity for regulated gas and electricity network businesses*, 6 June 2014, pp. 22-23.

145 Fama, E.F., J.D. MacBeth, 1973, "Risk, return, and equilibrium: Empirical tests," *Journal of Political Economy*, 81, 607–636, referred to in : SFG, *The required return on equity for regulated gas and electricity network businesses*, 6 June 2014, pp. 23-24.

146 Rosenberg, B., K. Reid, and R. Lanstein (1985), "Persuasive evidence of market inefficiency," *Journal of Portfolio Management* 11, 9-17, referred to in : SFG, *The Fama-French model: Report for Jemena Gas Networks, ActewAGL, Transend, TransGrid, and SA PowerNetworks*, 13 May 2014, p. 15.

Study	Key conclusions
	ratio) appeared to be related to variation in returns.
Fama and French (1992)[147]	Fama and French (1992) demonstrated relationships between returns and book-to-market and size factors which are not accounted for in the SL CAPM.
Brealey, Myers and Allen (2011)[148]	A recent study by Brealey, Myers and Allen confirms the findings of earlier studies, such as the study by Black, Jensen and Scholes (1972), that the pattern of empirical data is not consistent with what the SL CAPM would predict.
Brailsford, Gaunt and O'Brien (2012)[149]	Provides evidence, using Australian data, that value stocks tend to earn higher returns than the SL CAPM predicts should be the case and growth stocks tend to earn less than the SL CAPM predicts should be the case. The evidence that Brailsford, Gaunt and O'Brien (2012) provide indicates that the SL CAPM underestimates the returns required on value stocks and overestimates the returns to growth stocks.
NERA (2015)[150]	Based on Australian data, and using both in-sample and out-of-sample tests, NERA conclude that there is evidence of bias in the SL CAPM. NERA states that the evidence indicates that the SL CAPM significantly underestimates the returns generated by low-beta portfolios and overestimates the returns generated by high-beta portfolios. In other words, the model has a low-beta bias. The extent to which the SL CAPM underestimates the returns to low-beta portfolios is both statistically and economically significant.

The body of empirical literature relating to identified weaknesses in the SL CAPM, and the development of alternative models to overcome the well-recognised deficiencies in this model, is discussed at some length by the Nobel Prize Committee, in the explanatory material accompanying the award of the Nobel Prize for contributions to this field.[151] The Committee observes that by the end of the 1970s, the empirical support for the SL CAPM was increasingly being questioned in a number of studies, including those referred to above.

In light of the above evidence, the AER cannot rationally conclude that the SL CAPM is superior to all other models. The evidence clearly shows that the SL CAPM has weaknesses and that there are alternative models available, some of which have been designed to address such weaknesses.

(b) The AER has erred in finding that its implementation of the SL CAPM will produce unbiased estimates

147 Fama, E.F. and K.R. French (1992), "The cross-section of expected stock returns," *Journal of Finance* 47, 427-466, referred to in : SFG, *The Fama-French model: Report for Jemena Gas Networks, ActewAGL, Transend, TransGrid, and SA PowerNetworks*, 13 May 2014.

148 Brealey, R.A., S.C. Myers, and F. Allen, 2011, *Principles of Corporate Finance*, 10th ed., McGraw-Hill Irwin, New York, NY, USA, referred to in : SFG, *The required return on equity for regulated gas and electricity network businesses*, 6 June 2014, p. 24.

149 Brailsford, T., C. Gaunt and M. O'Brien, 'Size and book-to-market factors in Australia', *Australian Journal of Management*, 2012, pages 261-281, referred to in: NERA, *Review of the Literature in Support of the Sharpe-Lintner CAPM, the Black CAPM and the Fama-French Three-Factor Model,* March 2015.

150 NERA, *Empirical Performance of Relevant Models for Estimating the Return on Equity*, February 2015.

151 Economic Sciences Prize Committee of the Royal Swedish Academy of Sciences, *Understanding Asset Prices: Scientific Background on the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2013*, 14 October 2013, section 7.

The AER considers the issue of potential bias in the SL CAPM in the Preliminary Decision, but concludes:[152]

> *"We do not consider the use of the SLCAPM as the foundation model will result in a downward biased estimate of the cost of equity capital."*

Elsewhere in the Preliminary Decision the AER states that:[153]

> *"There is no compelling evidence that the return on equity estimate from the SLCAPM will be downward biased given our selection of input parameters."*

It is not entirely clear from these statements whether the AER has found that:

1. In general, the SL CAPM will produced unbiased estimates of the required return on equity (**Finding 1**); or
2. To the extent that the SL CAPM may produce biased estimates, the AER's selection of input parameters adequately corrects for any bias (**Finding 2**).

It must be that the AER has made Finding 1 or Finding 2, in order for it to be satisfied that its approach will deliver a return on equity which contributes to achievement of the ARORO.

(i) Empirical evidence does not support Finding 1

AusNet Services considers that Finding 1 would involve a critical error of fact. Empirical evidence clearly demonstrates that the SL CAPM will lead to downwardly biased estimates of the return on equity for low-beta stocks. This empirical evidence is referred to in a number of the expert reports supporting AusNet Services' original proposal, including:

- Expert reports from SFG, referring to the early empirical analysis of SL CAPM performance which laid the foundations for the development of alternative models such as the Black CAPM and FFM. This included the work of Black, Jensen and Scholes (1972), Friend and Blume (1970) and Fama and Macbeth (1973) referred to above;[154] and
- NERA's comprehensive review of the empirical literature on the performance of the SL CAPM and alternative models. NERA concludes from its review of the SL CAPM literature:[155]

> *"It has been known for well over 40 years that empirical versions of the SL CAPM tend to underestimate the returns to low-beta assets and overestimate the returns to high-beta assets…*
>
> *These early results have been confirmed in many, more recent studies. These studies have also shown that the SL CAPM tends to underestimate the returns to value stocks and low-cap stocks."*

Further evidence of bias in SL CAPM estimates of the return on equity is provided by the recent analysis of NERA, using Australian data.[156] NERA concludes that the evidence indicates that the SL CAPM significantly underestimates the returns generated by low-beta portfolios and overestimates the returns generated by high-beta portfolios. In other words, the model has a low-beta bias. The extent to which the SL CAPM underestimates the returns to low-beta portfolios is both statistically and economically significant.

The AER's only response to this in the Preliminary Decisions was to observe that the results of NERA's analysis 'appear counterintuitive'.[157] This is not a proper basis for simply dismissing this very important piece of analysis. The fact that NERA's results were contrary to the AER's prior intuition is

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152 Preliminary Decision, pp. 3-130.

153 Preliminary Decision, pp. 3-62.

154 SFG, *The required return on equity for regulated gas and electricity network businesses*, June 2014.

155 NERA, *Review of the Literature in Support of the Sharpe-Lintner CAPM, the Black CAPM and the Fama-French Three-Factor Model*, March 2015, p. iii.

156 NERA, *Empirical Performance of Relevant Models for Estimating the Return on Equity*, February 2015.

157 Preliminary Decision, pp. 3-285.

unsurprising, given that the AER may have expected the empirical relationship between beta and stock returns to reflect what is predicted by the SL CAPM. The fact that the empirical results were not consistent with the predictions of the SL CAPM is not a reason to dismiss the empirical analysis. Rather, this ought to have confirmed for the AER what the previous studies had indicated – that there is a significant weakness in the SL CAPM, in terms of its performance against the empirical data– or at least put the AER on notice that further genuine investigation is needed.

In dismissing the NERA analysis and earlier studies, the AER also refers to advice from Partington, which it considers supports a finding that the SL CAPM will not produce downwardly biased estimates. However the Partington advice referred to by the AER does not address the empirical evidence of *low-beta bias* in the SL CAPM (i.e. evidence that the SL CAPM underestimates the return on equity for stocks with a beta below one). Rather, in the passage referred to by the AER, Partington addresses an entirely separate issue of whether there may be a theoretical or statistical justification for adjusting equity beta estimates to account for *statistical* bias. The AER has misinterpreted the advice of its expert on this point.

(ii) There is no basis for Finding 2

The AER has not sought to advance any reasoned or principled basis for Finding 2 and, in any event there can be no reasonable basis for such a finding. The AER does not seek to quantify the effect of such bias, nor does it make any transparent adjustment to its SL CAPM parameter estimates to correct for bias.

The AER does make an adjustment to its equity beta estimate, from what it refers to as "the best empirical estimate" of this parameter. However it is not clear whether this adjustment is intended to correct for bias in the SL CAPM. In any event, given that the AER does not seek to quantify the effect of SL CAPM bias, it cannot reasonably be satisfied that this adjustment adequately corrects for such bias.

Indeed the AER appears to acknowledge that its equity beta estimate should be adjusted upwards to correct for bias in the SL CAPM, but says it cannot ascertain by how much it needs to adjust its estimate because it does not empirically estimate the Black CAPM. The AER does not calculate a specific uplift to its beta to correct for SL CAPM bias, but instead makes an arbitrary upward adjustment in the hope that this will adequately account for the issue that it has identified. The AER states:[158]

> *"We consider the theoretical principles underpinning the Black CAPM demonstrate that market imperfections could cause the true (unobservable) expected return on equity to vary from the SLCAPM estimate. For firms with an equity beta below 1.0, the Black CAPM may predict a higher expected return on equity than the SLCAPM. We use this theory to inform our equity beta point estimate, and consider it supports an equity beta above the best empirical estimate implied from Henry's 2014 report. However, while the direction of this effect may be known, the magnitude is much more difficult to ascertain. We do not consider this theory can be used to calculate a specific uplift to the equity beta estimate to be used in the SLCAPM. This would require an empirical implementation of the Black CAPM, and we do not give empirical evidence from the Black CAPM a role in determining the equity beta for a benchmark efficient entity."*

Ultimately, the AER adopts the top of its selected range for the SL CAPM equity beta – in effect, the AER makes an upward adjustment to the equity beta, from what it refers to as the "best empirical estimate" to the upper limit of its range. However given that the AER has not sought to quantify the effect of SL CAPM bias, it cannot reasonably be satisfied that choosing the top of its equity beta range will adequately correct for such bias.

AusNet Services considers that selecting the top of the AER's equity beta range will not adequately correct for the bias in the SL CAPM indicated by Black CAPM theory. If the AER's parameter estimates are used in the Black CAPM along with the best available estimate of the zero-beta premium, the return on equity estimated by the Black CAPM is above the return on equity estimated by the AER using the SL CAPM (and adopting the upper limit of its equity beta range).

158 Preliminary Decision, pp. 3-497.

Table 7.2 below shows that even if the AER's lower bound beta value is used in the Black CAPM, the resulting return on equity estimate is still above the AER's SL CAPM estimate using the upper bound beta value. If the AER's "best empirical estimate" of beta is used in the Black CAPM, the resulting return on equity estimate is significantly above the AER's SL CAPM. This indicates that if the AER were to properly adjust its SL CAPM beta estimate to account for the bias in the SL CAPM indicated by Black CAPM theory, the resulting beta would need to be higher than 0.7.

Table 7.2: Comparison of SL CAPM and Black CAPM return on equity estimates[159]

Model	Return on equity estimate
SL CAPM – equity beta 0.7; MRP 6.5%	7.3%
Black CAPM – equity beta 0.4 (AER lower bound); MRP 6.5%	7.4%
Black CAPM – equity beta 0.5 (AER "best estimate"); MRP 6.5%	7.7%
Black CAPM – equity beta 0.7 (AER upper bound); MRP 6.5%	8.3%

AusNet Services agrees that, if the SL CAPM is to be used alone to estimate the return on equity, some adjustment needs to be made to its input parameters to account for the known weaknesses of the model. If the SL CAPM is used without any adjustment, the empirical evidence shows that the return on equity for low-beta stocks will be significantly under-estimated.

Our concern is that the AER's adjustment to the equity beta is not sufficient to account for the known weaknesses of the SL CAPM. As shown above, even if the AER's view as to the "best empirical estimate" of equity beta were to be accepted (AusNet Services does not agree with this, for reasons set out in section (c) below), it is clear that adjusting the equity beta upwards to 0.7 does not account for the bias in the SL CAPM.

In this submission, AusNet Services puts forward an alternative method for estimating the return on equity using the SL CAPM alone, with an empirically based adjustment to account for the known weaknesses of this model. This alternative method is explained in section 7.4.6 below and the accompanying expert report from Frontier Economics (Appendix 7C – The Required Return on Equity under a Foundation Model Approach).

(c) The AER has erred in its findings in relation to other available models

The AER raises a number of concerns with the other available return on equity models. Given these concerns, the AER decides to give these alternative models either no role in its determination of the return on equity, or a very limited role.

The key concerns raised by the AER are:

- Alternative models are sensitive to input assumptions and choices around estimation periods and methodologies;
- Some alternative models are not empirically reliable;
- Some alternative models are not designed to estimate ex ante returns;
- Some alternative models (particularly the FFM) lack theoretical foundation;
- Some alternative models (particularly the Black CAPM) are not widely used by market practitioners, academics or regulators; and

159 All calculations are based on a risk-free rate of 2.76% (as used in the Preliminary Decision) and a Black CAPM zero-beta premium of 3.34% (as estimated by SFG).

- Some alternative models produce return on equity estimates that appear "very high".

For reasons discussed below, AusNet Services considers that each of these concerns is unfounded. In several cases, the AER's method and reasons for rejecting this other evidence (or relegating it to an indirect role) are illogical and unreasonable and/or apply equally to the SL CAPM.

(i) Complexity and sensitivity of models to assumptions

A key concern raised by the AER in relation to alternative return on equity models is that they are sensitive to inputs assumptions and methodological choices. For example the AER considers that the DGM is highly sensitive to assumptions around the growth rate of dividends.[160] In relation to the FFM, the AER identifies a range of different methodological choices which might lead to different results.[161]

Simply observing that a return on equity model is sensitive to input assumptions and methodological choices does not provide a basis for rejecting that model or giving a very limited role. All return on equity models—including the SL CAPM—are sensitive to input assumptions. This is why it is important to estimate all model parameters as accurately as possible.

The same concern could be expressed in relation to the SL CAPM. Clearly the results produced by the SL CAPM could vary widely depending on one's choice of input parameters and the methodologies used to estimate those parameters. Just based on the AER's ranges for the equity beta and MRP set out in the Preliminary Decision (and holding the risk-free rate constant), the return on equity produced by the SL CAPM could range from 4.8% to 11.4%.[162] This wide range of values arises due to different approaches that could be taken to estimating the MRP, and different methodological and data choices which could be made in estimating the MRP or beta.

Grant Samuel, in its submission in response to the NSW draft decisions, expresses concern at the AER's unbalanced treatment of the DGM and SL CAPM in this regard. Grant Samuel notes:[163]

> *"The DGM, in its simplest form, has only two components to estimate – current dividend yield and the long term growth rate for dividends. The current yield is a parameter that can be estimated with a reasonably high level of accuracy, particularly in industries such as infrastructure and utilities. We accept that the question of the long term dividend growth rate becomes the central issue and is subject to a much higher level of uncertainty (including potential bias from sources such as analysts) and we do not dispute the comments by Handley on page 3-61.*
>
> *However, there is no way in which the issues, uncertainties and sensitivity of outcome are any greater for the DGM than they are with the CAPM which involves two variables subject to significant measurement issues (beta and MRP)."*

Dr Robert Malko, a regulatory expert in the United States (where the DGM is frequently used) similarly notes:[164]

> *"Certainly the DGM is sensitive to its input assumptions and if it would be inappropriately implemented, it could deliver implausible results. In this regard, I see no difference between this and other models. If inappropriate inputs are used, any of the models can produce implausible results.*
>
> *It is common in United States regulatory determination processes for there to be debate between businesses, customers and the regulators concerning which inputs to use but these debates occur with a context in which expert testimony has regard to whether the inputs used deliver plausible results and decision making is guided by a body of court and regulatory precedent.*

160 Preliminary Decision, pp. 3-79.

161 Preliminary Decision, pp. 3-73.

162 That is, adopting a range for the MRP of 5.0% - 8.6% and a range for the equity beta of 0.4 – 0.7.

163 Grant Samuel, *Australian Energy Regulator – Draft Decision*, letter to the directors of TransGrid, 12 January 2015, p. 3.

164 Statement of Dr J Robert Malko, 16 June 2015, p. 5.

> *Over-all, the wide acceptance and use of the DGM in the United States demonstrates that this model is sufficiently robust for it to be useful in economic regulatory decision making."*

For the reasons expressed by Dr Malko, AusNet Services considers that the sensitivity of a model to input assumptions should not be a reason for dismissing it.

(ii) Reliability of empirical estimates

A particular concern raised by the AER in relation to the Black CAPM is that estimates of the return on equity will be unreliable, because there is no reliable method to obtain an estimate of the zero-beta premium.

The AER's concern appears to be that, because different estimation techniques have produced varying estimates of the zero-beta premium, it cannot rely on any empirical estimates of this parameter. The AER states:[165]

> *"We consider SFG's latest estimate of the zero beta premium appears more plausible. However, we remain of the view that the large range of zero beta estimates by consultants indicates that the model is unsuitable for estimating the return on equity for the benchmark efficient entity."*

Besides noting that it is 'plausible', the AER has not sought to test the robustness or reliability of SFG's proposed value for the zero-beta premium. Instead, the AER has dismissed SFG's estimate on the basis that there are other differing estimates, some of which are 'implausible'.

AusNet Services considers that this is an illogical and unreasonable approach to assessment of the proposed Black CAPM parameter values and return on equity estimate. The AER cannot reasonably conclude that *all* estimates of the zero-beta premium are unreliable, just because *some* estimates of this parameter appear implausible. The same logic could be used to dismiss just about any return on equity model, including the SLCAPM, to the extent that some estimates of the MRP or equity beta are considered unreliable.

This is particularly so given that detailed and compelling explanations have been provided as to why SFG's estimate differs from other estimates of the zero-beta premium. As explained by SFG, recent empirical studies have demonstrated the significance of the book-to-market factor in explaining variation in stock returns in Australia. It is for this reason that the SFG study, unlike earlier studies of the zero-beta premium, controls for this factor in the estimation estimates. SFG controls for this by forming portfolios that have approximately the same composition in terms of book-to-market ratio and other relevant firm characteristics.[166] As is clear from SFG's explanations, the difference between their estimates of the Black CAPM zero-beta premium and earlier estimates does not indicate that the model is empirically unreliable – rather, it reflects a development in the methodology for estimating this parameter.

AusNet Services has proposed to use SFG's estimates of the zero-beta premium and required return on equity from the Black CAPM in estimating the return on equity. If the AER is to reject this proposal, it must first consider SFG's estimates and assess whether adopting these estimates would (either alone or in combination with other models or methods) contribute to the achievement of the ARORO. The AER cannot simply reject AusNet Services' proposal on the basis that there are other estimates of Black CAPM parameters (which AusNet Services has not sought to rely on) which the AER considers to be implausible.

Instead of seeking a reliable estimate of the Black CAPM zero-beta premium, the AER has effectively assumed this to be zero (by relying solely on the SLCAPM to estimate the return on equity). AusNet Services considers that this is an unreasonable approach, in circumstances where the AER has identified the Black CAPM to be a relevant model. Given that the Black CAPM is clearly a relevant model, a proper examination should be undertaken of what the best estimate for the zero-

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165 Preliminary Decision, pp. 3-312.

166 SFG, *Beta and the Black Capital Asset Pricing Model*, February 2015, [65]; SFG, *Cost of equity in the Black Capital Asset Pricing Model,* 22 May 2014, section 4.

beta premium is and this value should be used unless it is so unreliable that assuming a value known to be incorrect (a zero value) is a preferable outcome.

(iii) Lack of theoretical foundation

The AER has again raised a concern in relation to the theoretical foundation for the FFM.

This concern has been addressed in AusNet Services' Initial Regulatory Proposal and the supporting expert reports of SFG and NERA.[167]

As explained by SFG, the basis for development of the FFM was in studies documenting the empirical failings of the SL CAPM.[168] These studies documented that when the stock market index is used as the only factor (as in the SL CAPM), the model does not fit the data, but when the additional FFM factors (size and book-to-market ratio) are included the model does fit the data better. These early findings have been confirmed by more recent analysis using Australian data. A recent study shows that while the size in not significant in the Australian data, the book-to-market factor is.[169]

The general theoretical foundation for the FFM is the same as for the SL CAPM, in that both models posit that there is a linear relationship between the expected return of a particular stock and the expected return of a mean-variance efficient portfolio.[170]

Where the theory of the FFM differs from SL CAPM theory is that in the FFM non-diversifiable risk is proxied by three factors, rather than one factor as implied by SL CAPM theory. The three factors posited by FFM theory are:[171]

- The excess return to the market portfolio;
- The difference between the return to a portfolio of high book-to-market stocks and the return to a portfolio of low book-to-market stocks (HML); and
- The difference between the return to a portfolio of small-cap stocks and the return to a portfolio of large-cap stocks (SMB).

The theoretical and empirical foundation for the FFM is discussed at some length by the Nobel Prize Committee, in the explanatory material accompanying the award of the Nobel Prize to Eugene Fama for contributions to this field.[172]

(iv) Models not designed to estimate ex ante returns

The AER expresses a concern in relation to the FFM that the model "*is not clearly estimating ex ante required returns*".[173]

It is curious that this criticism is only levelled at the FFM, given that theoretical foundation for the FFM is the same as for other asset pricing models, including the SL CAPM and Black CAPM. The key objective of all asset pricing models is to explain the cross section of stock returns, based on explanatory factors (such as market risk in the case of the SL CAPM) that have been observed to correlate with stock returns in the past. The basis for development of the FFM (and also the Black

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167 SFG, *The Fama-French model*, 13 May 2014, pp 27-30; SFG, *Using the Fama-French model to estimate the required return on equity,* February 2015.

168 SFG, *The Fama-French model*, 13 May 2014, pp 27-30; SFG, *Using the Fama-French model to estimate the required return on equity,* 13 February 2015.

169 Brailsford, T., C. Gaunt, and M. O'Brien (2012), 'Size and book-to-market factors in Australia', *Australian Journal of Management*, 37, pp. 261–281.

170 SFG, *The Fama-French model*, 13 May 2014, p. 27.

171 NERA, *Review of the Literature in Support of the Sharpe-Lintner CAPM, the Black CAPM and the Fama-French Three-Factor Model*, March 2015, p. 17.

172 Economic Sciences Prize Committee of the Royal Swedish Academy of Sciences, *Understanding Asset Prices: Scientific Background on the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2013*, 14 October 2013, section 7.

173 Preliminary Decision, pp. 3-70.

CAPM) was in studies documenting the failure of the SL CAPM to adequately explain variations in returns.

The reason for using any asset pricing model is that the historically observed relationships between returns, risk and other factors may be expected to continue in future. In this regard, the rationale for using the FFM is no different to the rationale for using the SL CAPM or Black CAPM.

As noted above, empirical analysis using Australian data shows that there is a statistically and economically significant relationship between returns and book-to-market ratios. Given the significance of this relationship in the historic data, and thus its explanatory power, there is no reason to expect that it would not continue in future. The AER's position on this topic is akin to saying that a prediction that the sun will rise tomorrow is not an 'ex ante analysis of expected behaviour' if it is based on observations that the sun has always risen in the past. Inductive reasoning is neither weak nor, of itself, lacking in predictive power.

(v) Models not widely used

The AER's concern that alternative models are not widely used was also addressed in AusNet Services' Initial Regulatory Proposal and supporting expert reports. AusNet Services observed that while some of these models are yet to gain acceptance among Australian regulators, it is clear that they are widely used by academics, market practitioners and overseas regulators and that they are market respected.

AusNet Services' position on this issue is further reinforced by recent evidence, including evidence of the use of models other than the SL CAPM in the United States.

Dr Robert Malko states, in relation to regulatory practice in the United States:

> *"I have observed that in the United States regulators and expert financial witnesses generally use multiple methods, at least two, when determining a reasonable range and reasonable point estimate for the cost of common equity for a regulated energy utility."*

Specifically in relation to the Black CAPM, Dr Malko states:[174]

> *"… although there is little explicit reference to the Black CAPM, in practice the use in the U.S. of the Empirical CAPM by financial analysts both within and outside energy regulatory processes is essentially to the same effect."*

Dr Malko explains that the 'Empirical CAPM', as referred to in US practice, involves a higher intercept and flatter relationship between returns and beta than under the SL CAPM.[175] Thus, the Empirical CAPM as used in US practice is consistent with the theory of the Black CAPM.

This is consistent with evidence from SFG that both the Black CAPM and DGM are commonly used in rate of return regulation cases in other jurisdictions.[176] SFG also notes that the FFM, while not as widely used in regulatory practice, is widely used by market practitioners and is well recognised in academic literature.[177]

(vi) "Very high" return on equity estimates

A further concern raised by the AER in relation to the DGM is that:[178]

> *"The very high return on equity estimates from SFG's DGM model, equating to an equity beta of 0.94 in the SLCAPM, appear inconsistent with the results in Professor Olan Henry's 2014 report."*

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174 Statement of Dr J Robert Malko, 16 June 2015, p. 8.

175 Statement of Dr J Robert Malko, 16 June 2015, p. 8.

176 SFG, *The required return on equity for regulated gas and electricity network businesses*, 6 June 2014, p. 40.

177 SFG, *The required return on equity for regulated gas and electricity network businesses*, 6 June 2014, p. 40.

178 Preliminary Decision, pp. 3-321.

The AER appears to be suggesting that, because the return on equity estimates produced by the DGM are higher than those produced by the SL CAPM (with the AER's preferred parameter values), the DGM estimates cannot be relied on.

This is an irrational and illogical approach to assessing the reliability of DGM estimates of the return on equity. This approach assumes that the SL CAPM estimates are accurate and reliable, and thus can be used as the benchmark to test the plausibility or reliability of estimates from other models. Adopting similar logic, one could conclude that the SL CAPM is unreliable because it produces estimates that are "very low" when compared to the DGM and any other models that produce higher estimates.

Alternatively, it may be that the AER considers that an implied equity beta of 0.94 would be "too high", because it is above its own estimate of that parameter. However there are two problems with such reasoning:

- First, this assumes that the AER's equity beta analysis is correct, and that any estimate which differs from its estimate of 0.7 (or falls outside its determined range 0.4 to 0.7) must be incorrect. The AER appears to consider that its estimate is more likely to be correct, because it accords with its assumption that energy businesses are in general "low risk".

  However simply asserting that energy businesses are generally "low risk" does not provide a basis for preferring one equity beta estimate over another, particularly where both of these estimates are less than one. If the AER believes that energy network businesses are "low risk", all this would indicate is that the equity beta is likely to be less than one.

- In any event, AusNet Services does not agree that low elasticity of demand for energy services indicates that network businesses are "low risk"—which is the AER's key reason for arguing that they are. It is well recognised that the relevant risks to a business include both operating and financial risks. Even if the AER considers the operating risk of energy networks to be relatively low (compared to the average firm), it must be recognised that financial risk is relatively high, due to high leverage when compared to the average firm in the market. Therefore the AER cannot reasonably conclude that overall, energy network businesses are "low risk".[179] One would need to test empirically the relative importance of operating and financial risks when assessing overall risk.

- More fundamentally, there is an implicit assumption that the SL CAPM will deliver unbiased estimates of the return on equity. If the SL CAPM is in fact delivering downwardly biased estimates (as indicated by the empirical evidence referred to above) then the implied equity beta needed to deliver a DGM-equivalent result must include an uplift to account for this bias. In other words, if there is a bias in the SL CAPM that is not accounted for in the AER's equity beta of 0.7, this will contribute to a higher equity beta being needed to deliver a DGM-equivalent result.

  The AER is required to have regard to all relevant estimation methods, financial models, market data and other evidence.[180] The AER cannot reject relevant financial models simply on the basis that the results they produce are inconsistent with the results of the AER's preferred model. Where two or more relevant models produce conflicting results, it is incumbent on the AER to assess each of the models on their merits and on that basis decide how their results are to be taken into account in determining the return on equity.

  When faced with two models which produce differing results there are three possible hypotheses:

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179 This issue is discussed further in the ENA's submission to the AER equity beta issues paper (ENA, *Response to the Equity Beta Issues Paper of the Australian Energy Regulator*, 28 October 2013, pp 14-20) and in a recent report from Frontier Economics (Frontier, *Review of the AER's conceptual analysis for equity beta*, June 2015).

180 NER, clause 6.5.2(e)(1).

1 The model producing the lower estimate is accurate and unbiased, while the other model is upwardly biased or has been incorrectly applied;

2 The model producing the higher estimate is accurate and unbiased, while the other model is downwardly biased or has been incorrectly applied; or

3 There is a degree of error or imperfection in both models, and the correct outcome lies somewhere between or outside the two.

The AER has clearly not tested these possible hypotheses. Rather, the AER appears to have assumed that the first hypothesis is correct – i.e. that the SL CAPM is reliable and the DGM is not – without any rational basis. This is despite other evidence that suggests that either the second or third hypothesis is more likely to be correct. As noted above, there is empirical evidence that the SL CAPM will produce downwardly biased estimates of the SL CAPM for low-beta stocks.

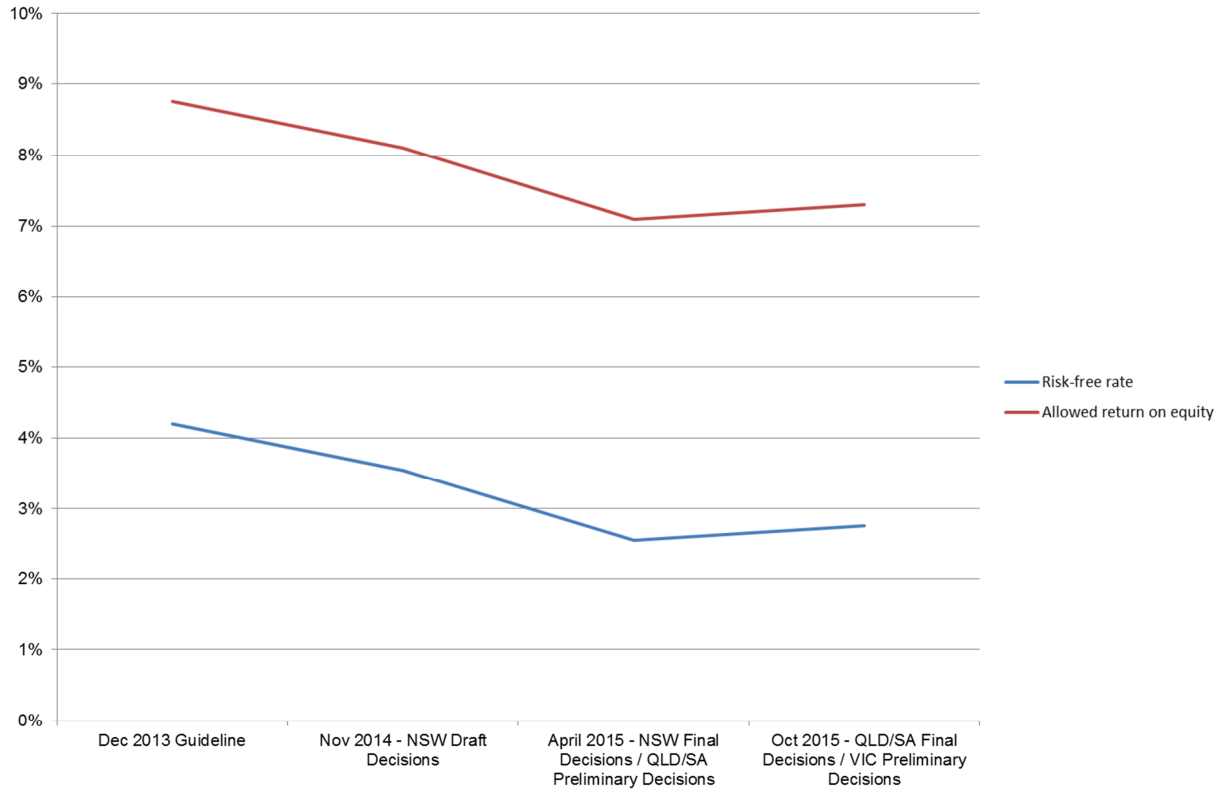
In any event, it is not clear that the DGM return on equity estimate is "very high", when compared to the results of other relevant models and the AER's cross-checks. When comparing the outputs of the four relevant models, it could rather be said that the SL CAPM estimate appears "very low" when compared to the results of the other three models (see Figure 7.1 above).

7.4.4 The AER's application of the SL CAPM

(a) The AER's mechanistic application of the SL CAPM

The AER continues to apply the SL CAPM in a largely mechanistic manner, by adding an effectively fixed equity risk premium (**ERP**) to a variable risk-free rate. The result is that over the past two years the AER's return on equity estimate has moved in lock-step with the risk-free rate.

Figure 7.2: Movement in the allowed return on equity under AER application of the SL CAPM



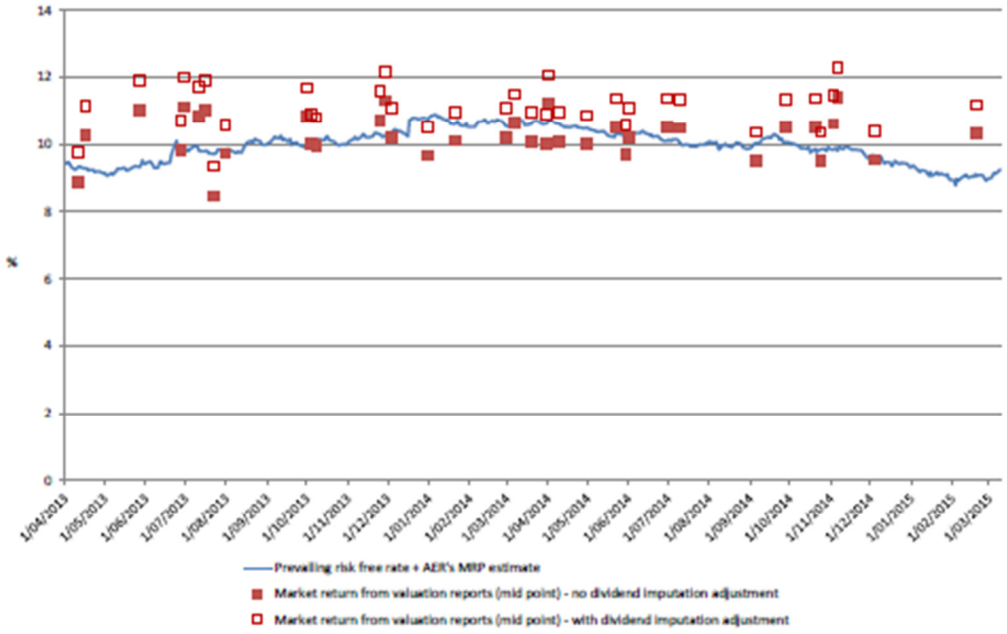
This approach is at odds with evidence that the MRP has increased as the risk-free rate has fallen, including the evidence from the AER's own DGM. This evidence is discussed further below.

It is also at odds with how the SL CAPM is applied by market practitioners.

In an expert report that was submitted with AusNet Services' Initial Regulatory Proposal, Incenta explained that as the risk-free rate has fallen over the past 18 months, the vast majority of independent expert reports have adjusted either the risk-free rate and/or MRP upwards.[181] The AER's approach of maintaining the same MRP estimate and combining this with a falling risk free rate is inconsistent with this observed market practice.

This market evidence is consistent with that presented by the AER in the Preliminary Decision.[182] The AER's analysis of independent expert reports (Figure 3-33 of the Preliminary Decision) indicates that as the risk-free rate has fallen over the past two years, estimates of the market return in independent expert reports have remained relatively steady. This can be contrasted with the AER's assumption (as illustrated by the blue line in Figure 3-33) that over this period the market return has fallen in lock-step with the risk-free rate.

Figure 3-33 Market return from valuation reports



Source: AER analysis of data sourced from the Thomson Reuters Connect 4 database.

The AER's analysis also indicates that independent experts have tended to increase their estimates of the ERP when the risk-free rate is low. Figure 3-32 in the Preliminary Decision indicates that, based on the AER's review of independent expert reports:[183]

- Independent experts estimated the ERP to be in the range of 4 – 6 per cent (not adjusted for imputation credits) when the risk-free rate is in excess of 5 per cent; and
- Independent experts estimated the ERP to be in the range of 9.5 – 11.5 per cent (not adjusted for imputation credits) when the risk-free rate is below 3 per cent.

The AER's analysis of independent expert reports is confirmed by more recent analysis from HoustonKemp. As noted above, HoustonKemp observes that in recent times a number of independent experts have used risk-free rates above the prevailing CGS yield, leading to more stability in their estimates of the prevailing market return (and implicitly higher MRP assumptions)

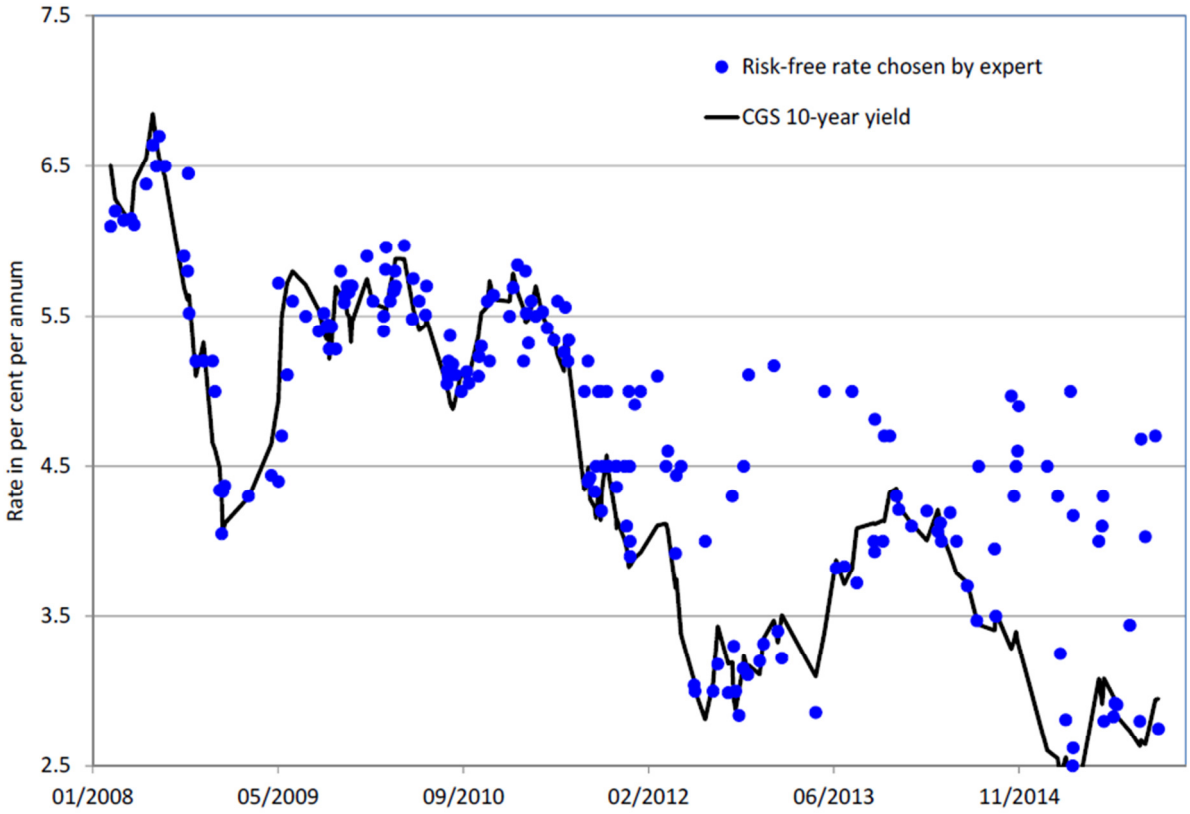
181 Incenta, *Further update on the required return on equity from independent expert reports*, February 2015.

182 Preliminary Decision, pp. 3-535.

183 Preliminary Decision, Figure 3-32, pp. 3-534.

than under the AER's approach.[184] This is shown in Figure 7.3 below. This evidence suggests that market practitioners do not believe that the return on equity has simply been moving in lock-step with the risk free rate in recent years.

Figure 7.3: Risk-Free Rates chosen by independent experts and 10-year CGS Yield over time



Note: Data are from the Connect-4 database, the ASX and the RBA. The 10-year CGS yields are interpolated from the RBA files f16.xls, f16hist.xls and f16hist2013.xls.

An assumption that the return on equity moves in lock step with CGS yields is inappropriate in current market conditions. Further evidence provided with this submission demonstrates that the recent decline in CGS yields has been driven by factors which would not be expected to affect the return on equity to the same extent.

CEG points to evidence from numerous Australian and international authorities that yields on AAA rated sovereign government debt (including CGS) have been forced down in recent years by global forces, including:[185]

- Shrinking supply of AAA rated Sovereign debt globally and shrinking supply of substitutes in the form of safe private sector debt;
- Heightened relative risk aversion and increased levels of perceived relative risk for equity vis-à-vis government debt; and
- Heightened demand for liquid assets post GFC - including due to changes to banking regulations.

184 HoustonKemp, *The Cost of Equity: Response to the AER's Draft Decisions for the Victorian Electricity Distributors, ActewAGL Distribution and Australian Gas Networks*, January 2016, p 43 and Figure 7.

185 CEG, *Measuring risk free rates and expected inflation*, April 2015, p. 1.

CEG explains that none of these factors that have lowering CGS yields would be expected to also lower the return on equity. CEG concludes:[186]

> *"None of these factors can be expected to lower the cost of equity for private corporations. Consequently, to the extent that these factors do explain, at least in part, unprecedented low government bond yields then it follows that the cost of equity will not have fallen in line with falling government bond yields. This is just another way of saying that the risk premium, measured relative to government bond yields, will have risen."*

Frontier Economics similarly notes that declines in CGS yields have been attributed to unprecedented monetary easing by central banks and a shortage of risk-free assets as demand for these assets has increased. Frontier notes that at least some of these factors appear to be unique to the government bond market and therefore would not be expected to affect the return on private equity – for example, tighter banking regulations have increased the demand for government bonds but not equity, and the demand from foreign investors has been much more pronounced in the government bond market than the equity market. Further, Frontier points to empirical evidence that the return on equity has not fallen in lockstep with the decline in government bond yields. (see Appendix 7D – Frontier Economics, The Relationship between Government Bond Yields and the Market Risk Premium).

(b) Determination of the MRP

(i) The AER's decision on the MRP

In the Preliminary Decision, the AER adopted a three-step approach to estimating the MRP:[187]

- In step one, the AER determined a 'baseline' estimate for the MRP, based on estimates of historical excess returns. The AER considered that the information on historical excess returns indicated a baseline estimate for the MRP of 6.0 per cent. This baseline estimate was taken from a range of estimates of historical excess returns of 5.0 per cent to 6.5 per cent.[188]
- In step two, the AER had regard to DGM evidence in order to determine whether it should select an MRP point estimate above or below the baseline estimate of 6.0 per cent. The AER's DGM estimates of the MRP ranged from 7.5 to 8.6 per cent and its preferred three-stage estimates ranged from 7.7 to 8.6 per cent.[189] The AER considered that this information could justify a point estimate above the 6.0 per cent baseline, but did not support a point estimate above the top of the range implied by historical excess returns (6.5 per cent).[190]
- In step three, the AER placed some reliance on survey evidence and conditioning variables. The AER considered that this information, in conjunction with DGM evidence, helps to indicate how far above or below the baseline estimate the MRP point estimate should be.

The effect of adopting this three-step approach is that critical evidence as to the prevailing MRP, from the AER's DGM model, has very little influence on the determination of the point estimate. This evidence is only used to indicate whether the prevailing MRP is likely to lie above or below the AER's "baseline" estimate of 6.0 per cent, which reflects the AER's view of the historical average MRP. The estimates from the AER's DGM model do not appear to otherwise influence the AER's determination of the MRP. Ultimately, the AER's estimate of the prevailing MRP is based on historical average measures, and evidence as to the prevailing MRP is only used to determine which of the historical average measures is used.

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186 CEG, *Measuring risk free rates and expected inflation*, April 2015, p. 2.

187 Preliminary Decision, pp. 3-432.

188 Preliminary Decision, pp. 3-430.

189 Preliminary Decision, pp. 3-362.

190 Preliminary Decision, Pp. 3-434.

AusNet Services is concerned that the MRP estimate resulting from this approach will not reflect prevailing market conditions. The evidence before the AER (including from the AER's own DGM analysis) indicates that the prevailing MRP is not in line with the historical average. Despite this, the AER has tied its estimate of the MRP to the range of historical average measures. Measures of the prevailing MRP are only used to determine which historical average measure is to be used.

The AER's DGM estimates do not merely indicate that the MRP is somewhere above 6.0 per cent. Rather, the AER's DGM estimates indicate that the current MRP is somewhere in the range of 7.5 to 8.6 per cent. This evidence in no way confirms or supports the AER's estimate of 6.5 per cent.

It appears that the AER has incorrectly analysed the range for the historical average MRP as suggesting that the prevailing MRP could be found in this range, whereas all that this range indicates is that the MRP in *average* market conditions (i.e., the average of the market conditions over the historical period that was used) had a range of somewhere between 5.0 to 6.5 per cent. Consequently, the AER fails to appreciate that the best estimate of the *prevailing* MRP need not fall within the statistical range of estimates for the historical average excess return – for example, if the contemporaneous market conditions differed from the historical average conditions because the risk-free rate was at unprecedented lows.

The AER also appears to have constrained its consideration of the appropriate MRP through this three-step approach. Through its consideration of historical excess return estimates in step one, the AER appears to have constrained the range of possible MRP outcomes to that indicated by its range of estimates for the historical average excess returns (5.0 to 6.5 per cent). Consequently, the evidence considered under step two (the AER's DGM estimates) could only have an effect on the determination of the MRP to the extent that it confirmed an estimate within the range determined under step one. To the extent that this evidence indicated an estimate outside this range, it was given no weight, or its role was limited to taking the AER to the top of the range defined by step one.

(ii) Rigidity of the AER's MRP estimate, despite evidence of changes in market conditions

AusNet Services notes that the AER's estimate of the MRP has not changed since publication of its Rate of Return Guideline, despite apparent changes in prevailing market conditions. The AER adopted an estimate for the MRP of 6.5 per cent in its Rate of Return Guidelines (December 2013), and has maintained the same MRP estimate in the draft and final decisions for the NSW electricity businesses (November 2014 and April 2015) and in its Preliminary Decision (October 2015). The AER's view appears to be that there has been no change to the MRP between December 2013 and October 2015.

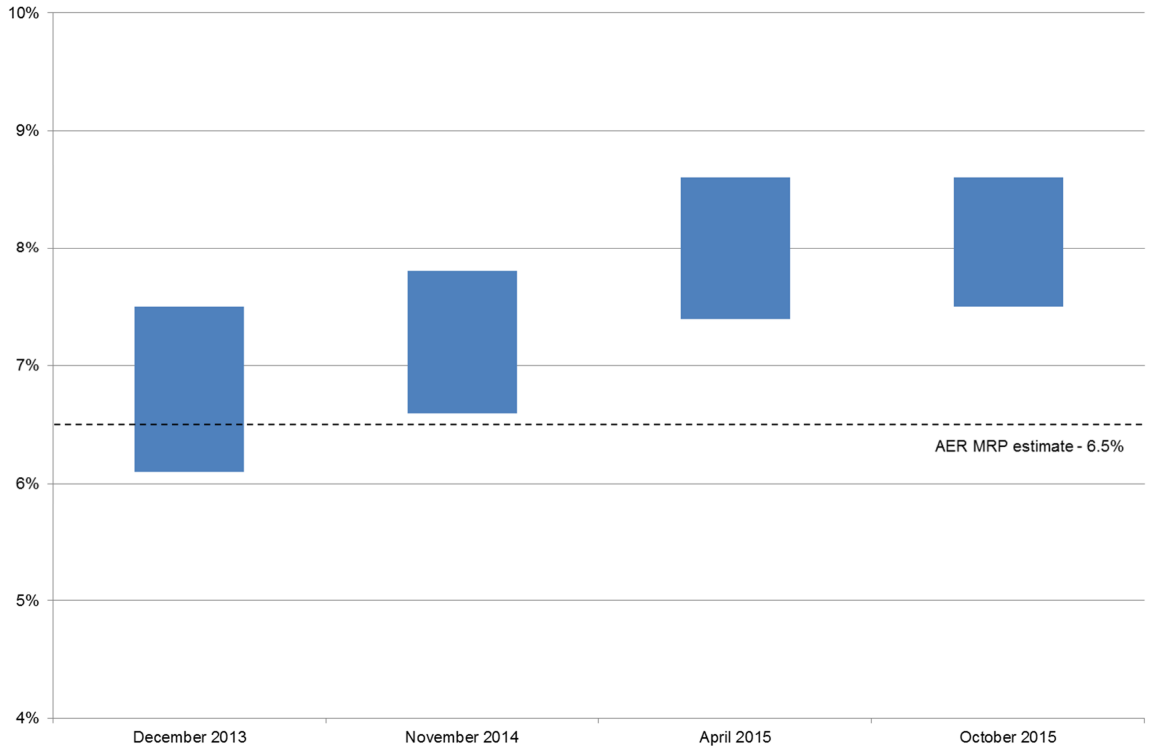
However the evidence before the AER indicates that there has been a significant change in market conditions over the past two years. In particular:

- Indicators of the forward-looking MRP – including the AER's own DGM results – indicate that the MRP has increased significantly. Whereas at the time of the Rate of Return Guidelines the AER's MRP estimate sat within the AER's range of DGM estimates, by the time of the Preliminary Decision, the AER's MRP estimate was well outside its range of DGM estimates. In December 2013 the AER estimated a range for the MRP of 6.1 – 7.5 per cent from its DGM.[191] However, in the Preliminary Decision, this range is 7.5 to 8.6 per cent.[192]

[191] AER, *Better Regulation: Explanatory Statement – Rate of Return Guideline*, December 2013, p. 93.

[192] Preliminary Decision, pp. 3-362.

Figure 7.4: Movement in AER DGM estimates since Rate of Return Guideline



The fact that the AER's MRP has not changed despite significant increases in its DGM estimates suggests that either the AER is placing no real weight on DGM results, or the AER has placed declining weight on these results as the MRP estimate has increased. Giving either no weight or declining weight to DGM results would be unreasonable in circumstances where DGM results provide the best indicator of the *current* (prevailing) MRP. This implies that the AER is giving increasing weight to historical average measures of the MRP, which will not reflect prevailing market conditions except perhaps by chance (i.e. if, by chance, current market conditions reflect historical average conditions).

- There has been a precipitous fall in the risk-free rate – from around 4.2 per cent at the time of the Rate of Return Guidelines, to around 2.76 per cent at the time of the Preliminary Decision. By holding the MRP constant, the AER implicitly assumes that the market conditions driving this reduction in CGS yields are:
  - Not affecting the MRP at all; and
  - Leading to a corresponding one-for-one reduction in the return on equity.

  As noted above, the evidence does not support such an assumption. Rather, the evidence from the AER's own DGM analysis indicates that the MRP has been increasing as the risk-free rate has been falling, and that as a result, the return on equity has not fallen in lock-step with the risk-free rate.
- As discussed below (section 7.4.5), evidence from the AER's cross-check analysis and conditioning variables points to an increase in the MRP.
- It has been recognised by market practitioners and regulatory authorities that current market conditions are not average market conditions, and that the MRP is likely deviating from a fixed range based on historical average measures.

For example, as noted in AusNet Services' Initial Regulatory Proposal, the United States Federal Energy Regulatory Commission has noted:[193]

> *"Given the recent trends of near-historic low yields for long-term U.S. Treasury bond rates, the CAPM's input for the "risk-free" rate, we find that it is a reasonable assumption that the current equity risk premium (which is added to the risk-free rate to calculate the cost of equity data point that determines the slope of the CAPM curve) exceeds the 86-year historical average used as the consultants' CAPM input. The current low treasury bond rate environment creates a need to adjust the CAPM results, consistent with the financial theory that the equity risk premium exceeds the long-term average when long-term U.S. Treasury bond rates are lower than average, and vice-versa."*

Similarly in the UK, Ofgem has recognised that as the risk-free has fallen to historic lows, it is not appropriate to simply add a prevailing risk-free rate measure to a fixed ERP. Ofgem has instead used a risk-free rate range above the prevailing rate, resulting in more stability in estimates of the overall return on equity. Ofgem explains its approach as follows:[194]

> *"Market measures of the real risk-free rate, such as the yield on ILGs, have risen slightly since the data cut-off point for EE's December report. However, they remain near historical lows, partly due to the Bank of England's official interest rate being held at 0.5 per cent and the impact of Quantitative Easing. We, therefore, do not consider it appropriate to rely on spot rates or short-term averages to set the risk-free rate.*
>
> *Our revised range for the risk-free rate is, therefore, 1.7-2.0 per cent. The lower bound matches the 10-year average yield on 10-year ILGs, while the upper bound corresponds to regulatory precedent in the UK."*

The Reserve Bank of Australia has observed that the ERP appears to have risen as the risk-free has fallen in recent years. The RBA Governor observed in a recent speech:[195]

> *"…another feature that catches one's eye is that, post-crisis, the earnings yield on listed companies seems to have remained where it has historically been for a long time, even as the return on safe assets has collapsed to be close to zero... This seems to imply that the equity risk premium observed ex post has risen even as the risk-free rate has fallen and by about an offsetting amount."*

In an Australian regulatory context, the Economic Regulation Authority in WA (**ERA**) has recognised that the MRP will fluctuate over time, and that it is therefore not appropriate to fix a range for the MRP. The ERA noted in a recent decision:[196]

> *"…the Authority has now concluded that it is not reasonable to constrain the MRP to a fixed range over time. The erratic behaviour of the risk free rate in Australia to date, and more particularly, its pronounced decline in the current economic environment, leads to a situation where the combination of a fixed range for the MRP and prevailing risk free rate may not result in an outcome which is consistent with the achievement of the average market return on equity over the long run.*
>
> *Specifically, the estimate of the upper bound for the forward looking MRP of 7.5 per cent that was based on the DGM will fluctuate in line with the risk free rate. So for example, at times when the risk free rate is low, as it currently is, the upper bound for the MRP should be higher. There will be times – such as during the GFC – when the Authority would be more likely to select a point estimate of the MRP which is close to the upper bound. The resulting required return on the*

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193 Federal Energy Regulatory Commission, Order accepting tariff filing subject to condition and denying waiver, Docket No. ER14-500-000, 28 January 2014, p. 36.

194 Ofgem (2011), *Decision on strategy for the next transmission and gas distribution price controls – RIIO-T1 and GD1 Financial issues*, p 33. See also: Oxera, *Agenda – Advancing economics in business - What WACC for a crisis?*, February 2013, for a review of recent UK regulatory decisions on this issue.

195 Glenn Stevens, 'The World Economy and Australia', Address to The American Australian Association luncheon, hosted by Goldman Sachs, New York, USA, 21 April 2015.

196 ERA, *Final Decision on Proposed Revisions to the Access Arrangement for the Mid-West and South-West Gas Distribution Systems submitted by ATCO Gas Australia Pty Ltd*, 30 June 2015 (as amended on 10 September 2015), p. 251.

> *market in that type of situation could possibly exceed the long run average return on equity indicated by the historical data.*
>
> *For this reason the Authority considers it appropriate to determine a range for the MRP at the time of each decision."*

The approach taken in AusNet Services' proposal to estimating the MRP takes into account changes in prevailing market conditions. Each of the estimation methodologies can be updated for recent data in order to derive a current estimate of the MRP.

However AusNet Services is concerned that the AER's methodology is not similarly responsive to changes in market conditions. This is likely to be due to the fact that, as discussed below, the AER's approach fails to take into account a number of relevant estimation methodologies which will provide an indication of current market conditions, such as the Wright approach and evidence from independent expert reports.

(iii) Errors in interpretation of key evidence

The AER's conclusion on the MRP is also affected by errors in the interpretation of key evidence.

(A) Historical excess returns

The AER refers to a range for the historical average MRP of 5.0 – 6.5 per cent, based on a combination of geometric and arithmetic average measures.

There are two problems with the AER's interpretation of the historical data:

- First, the AER has mixed geometric average measures with arithmetic averages, in addition to mixing estimates for different time periods. Expert advice, including advice from NERA and Lally, explains why geometric averages are not an appropriate measure in this case. As explained by NERA, since estimates of the MRP are not compounded, arithmetic mean measures should be used;[197]
- Secondly, the AER has relied on estimates from Brailsford, Handley and Maheswaran which rely on an historical dataset that has been inappropriately adjusted to take account of perceived deficiencies in the original dataset. These adjustments have been investigated by NERA and the adjustments to the original dataset corrected. This issue was addressed at length in AusNet Services' Initial Regulatory Proposal, and in the accompanying expert reports from NERA. The key issue is that the adjustment originally made to the historical data appears to have had no logical basis. It follows that an examination of earlier data extracted from original sources (as has been done by NERA) will almost surely lead to an adjustment that is more accurate than the one contained in the data that Brailsford, Handley and Maheswaran employ.[198]

Based on a correct interpretation of the historical data and with appropriate adjustments for imputation, the historical average MRP based on the longest available dataset is 6.56 per cent (based on a theta of 0.35).[199] AusNet Services notes that, if the AER's theta estimate of approximately 0.6 were to be adopted, this MRP estimate would increase slightly, to 6.65 per cent.[200]

(B) The AER has incorrectly used the Wright approach

The AER does not take into account the Wright approach when estimating the MRP, because it considers that the Wright approach should inform the overall return on equity only. The AER refers

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197 NERA, *Historical Estimates of the Market Risk Premium*, February 2015, section 2.

198 NERA, *Historical Estimates of the Market Risk Premium*, February 2015; NERA, *Further Assessment of the Historical MRP: Response to the AER's Final Decisions for the NSW and ACT Electricity Distributors*, June 2015.

199 NERA, *Historical Estimates of the Market Risk Premium*, February 2015, p. 42.

200 NERA, *Historical Estimates of the Market Risk Premium*, February 2015, p. 43.

to the Wright approach as an alternative implementation of the SL CAPM designed to provide information at the return on equity level.[201]

This is an incorrect interpretation of Wright's work. Wright did not develop an alternative implementation of the SL CAPM. Wright simply proposed an alternative method of estimating the MRP for use in the SL CAPM – as the difference between the historical average market return and the current risk free rate – on the basis that market returns may be more stable over time than excess returns.[202]

Associate Professor Handley, in a passage referred to in the Preliminary Decision, clearly describes the Wright approach as an alternative method of estimating the MRP, rather than as an alternative return on equity model. Handley describes the Wright approach as follows:[203]

> *"Wright adopts an alternative non-standard approach to estimating the MRP. Rather than treating the MRP as a distinct variable he suggests estimating the return on the market – by estimating the real return on equity and combining this with a current forecast of inflation to give an estimated nominal return on equity – and the risk free rate separately."*

In the Preliminary Decision, the AER sets out a formula, which it says represents the Wright approach to implementing the SL CAPM (referred to as the 'Wright SL CAPM').[204] However the formula set out by the AER is simply the standard SL CAPM, as originally specified by Sharpe and Lintner.[205] It is clear from this that the Wright approach does not involve an alternative model for estimating the overall return on equity. Rather, the Wright approach represents an alternative method for estimating the MRP parameter.

In fact, the Wright approach to estimating the MRP would appear to be more aligned with the conventional SL CAPM specification, because it seeks to estimate the MRP as the difference between two distinct parameters (the market return and risk-free rate). This is in contrast to other methods which seek to estimate the MRP as a parameter in its own right.

It is therefore incorrect for the AER to reject the Wright approach on the basis that it is not a measure of the MRP. The Wright approach clearly provides relevant information in relation to the required market return and the MRP, and it would be an error for the AER to disregard it when estimating the MRP.

(C) Use of independent valuation reports

The AER considers independent valuation reports to be relevant, but only to assessing the overall return on equity. Further, due to perceived limitations, the AER considers that only "limited reliance" should be placed on this material, and that it should be used in a "directional role" only.[206]

Ultimately it is not clear what practical effect, if any, independent valuation reports have on the AER's decision on the return on equity. As a consequence of their relegation to an overall return on equity "check" role, they appear to have little or no practical impact on the final estimate. The AER retains its original parameter estimates and model choice once it completes its cross-check against the results of independent expert reports.

AusNet Services considers that independent valuation reports provide relevant evidence of the required market return and MRP applied by market practitioners. Therefore, evidence from these reports as to the MRP applied by market practitioners should be given a direct role in estimating the MRP.

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201 Preliminary Decision, pp. 3-33.

202 Wright, S., *Review of Risk Free Rate and Cost of Equity Estimates: A Comparison of U.K. Approaches with the AER*, 25 October 2012.

203 John C Handley, *Advice on the Return on Equity*, 16 October 2014, p 17; Preliminary Decision, pp. 3-88.

204 Preliminary Decision, pp. 3-84 – 3-85.

205 Sharpe, W., 1964, "Capital asset prices: A theory of market equilibrium under conditions of risk," *Journal of Finance*, 19, pp. 425–442.

206 Preliminary Decision, pp. 3-95.

Incenta's February 2015 analysis of independent expert reports indicates that the market rate of return estimated by independent experts has remained relatively constant in recent times, notwithstanding declines in the 'spot' risk free rate.[207] This implies that the MRP used in these reports, and/or the uplifts used by independent experts, has increased as the risk-free rate has declined.

This is consistent with evidence presented by the AER in the Preliminary Decision.[208] As noted above, the AER's analysis of independent expert reports (Figure 3-33 of the Preliminary Decision) indicates that as the risk-free rate has fallen over the past two years, estimates of the market return in independent expert reports has remained relatively steady at around 11 per cent (adjusted for imputation). This can be contrasted with the AER's estimate of the market return, which has declined to around 9 per cent, moving in lock-step with changes in the risk-free rate.

These findings are supported by more recent analysis from HoustonKemp. As noted above, HoustonKemp observes that in recent times a number of independent experts have used risk-free rates above the prevailing CGS yield, leading to more stability in their estimates of the prevailing market return (and implicitly higher MRP assumptions) than under the AER's approach.[209]

HoustonKemp identifies a statistically significant negative relationship between the implied MRP estimated by experts (their implied estimate of the market return, less the prevailing CGS yield) and the prevailing CGS yield.

Based on their analysis of recent independent expert reports, HoustonKemp estimates an implied MRP from these reports of 7.58 per cent.[210]

(D) Use of DGM estimates

The AER adopts a different construction of the DGM to that used by SFG / Frontier Economics, and as a result derives a wider range of estimates for the market return and MRP.

SFG / Frontier has clearly explained each of the points of difference between its approach and the AER's, and explains why it has taken the approach that it has.[211] In particular, SFG / Frontier clearly explains the reasons for its choice of long term growth assumption, its estimation approach and dataset. For the reasons set out in SFG's report, AusNet Services considers that the SFG / Frontier approach to implementing the DGM is clearly preferable to the AER's.

However even adopting the AER's preferred construction of the DGM, it is clear that the MRP has increased significantly over the past two years. Table 7.3 shows the change in the MRP from the AER's DGM between the Rate of Return Guideline (December 2013) and the Preliminary Decision (October 2015).

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207 Incenta, *Further update on the required return on equity from independent expert reports*, February 2015.

208 Preliminary Decision, pp. 3-535.

209 HoustonKemp, *The Cost of Equity: Response to the AER's Draft Decisions for the Victorian Electricity Distributors, ActewAGL Distribution and Australian Gas Networks,* January 2016, p 43 and Figure 7 (Appendix 7E)

210 HoustonKemp, *The Cost of Equity: Response to the AER's Draft Decisions for the Victorian Electricity Distributors, ActewAGL Distribution and Australian Gas Networks*, January 2016, p 48 (Appendix 7E). This estimate is inclusive of a value assigned to imputation credits distributed, where it is assumed that theta is 0.35. HoustonKemp notes that if a higher theta value were to be assumed, its estimate of the MRP based on this analysis would be higher (assuming theta of 0.6 leads to an estimate of 8.02%). HoustonKemp's estimate of 7.58% is exclusive of any final revisions or adjustments made by independent experts. If revisions / adjustments are included, the estimate would be higher (HoustonKemp's estimate increases to 7.94%, if these revisions / adjustments are included).

211 SFG, *Share prices, the dividend discount model and the cost of equity for the market and a benchmark energy network*, February 2015.

Table 7.3: AER dividend growth model estimates of the required return on the market

	Growth rate (%)	Two stage model (%)	Three stage model (%)
Rate of Return Guideline	4.0	6.1	6.7
	4.6	6.7	7.1
	5.1	7.1	7.5
Preliminary Decision	4.0	7.5	7.7
	4.6	8.1	8.2
	5.1	8.5	8.6

Source: AER Rate of Return Guideline Appendices, p. 87; Preliminary Decision, pp 3-362.

Frontier's estimate of the prevailing MRP (discussed below) uses the AER's DGM estimate based on its preferred three-stage model and the mid-point of its range of growth rate assumptions. This estimate is currently 8.2 per cent, as shown in the table above.

(iv) Conclusion on the MRP

For the above reasons, AusNet Services does not agree with the AER's estimate for the MRP of 6.5%. This estimate does not reflect prevailing conditions in the market for equity funds and will not contribute to the achievement of the ARORO. The AER's decision on the MRP is affected by a number of errors, as described above.

AusNet Services considers that a preferable approach is that set out by Frontier Economics. This approach takes into account all relevant evidence on the MRP and applies a transparent weighting to each estimate based on the relative strengths and weaknesses of each estimation approach. The reasons for Frontier's weighting approach are set out in an expert report by SFG submitted with AusNet Services' Initial Regulatory Proposal.[212]

Importantly, the Frontier's approach gives greatest weight to measures of the prevailing (current) MRP. This is in contrast to the AER's approach which leads to an MRP estimate that reflects an historical average measure.

Frontier has now updated its estimate of the MRP based on current data. Frontier's revised estimate is set out in Table 7.4 below.

[212] SFG, *The required return on equity for regulated gas and electricity network businesses*, June 2014.

Table 7.4: Frontier estimates of market risk premium (per cent)[213]

Estimation method	Market return	MRP	Weighting
Historical excess returns (Ibbotson)	9.3	6.5	20
Historical real market returns (Wright)	11.4	8.6	20
Dividend discount model	11.0	8.2	50
Independent expert reports	10.3	7.6	10
Weighted average	10.6	7.9	100

(c) Equity beta estimate

The AER concludes that an equity beta of 0.7, when applied in the SL CAPM, will deliver a return on equity that contributes to achievement of the ARORO. The AER finds that:

- The primary range for the equity beta should be based on analysis of Australian regulated energy businesses only;
- Based on analysis of this sample, a reasonable range for the equity beta is 0.4 to 0.7;
- "the best empirical estimate" of the equity beta is 0.5; and
- Additional information taken into account by the AER – specifically empirical estimates for international energy networks and the theoretical principles underpinning the Black CAPM – indicate that an equity beta at the top of this range is appropriate, and will overcome any bias in the SL CAPM.

This section addresses each of these findings.

(i) The AER has erred in confining the sample to Australian regulated businesses

The AER's primary range for the equity beta is based on analysis of a very small data sample comprising listed Australian energy network businesses only. This sample includes nine businesses, of which just four are currently trading.

It is neither necessary nor appropriate to confine the sample used for estimating equity beta to regulated energy network businesses only. As discussed in section 7.2.2 above, the relevant degree of risk under the ARORO is that faced by entities operating in a workably competitive market providing services similar to electricity distribution services within Australia. Therefore, in constructing comparator datasets for the purposes of estimating a return on equity that is commensurate with efficient financing costs of a BEE, these datasets should include entities operating in workably competitive markets that face a similar degree of risk to that faced in the provision of electricity distribution services. That is, they should not be restricted to regulated entities.

Even if the relevant level of risk is that of a regulated energy network business subject to economic regulation under the NER / NGL, in many cases it will be necessary to look beyond just those businesses that supply regulated energy network services within Australia in order to produce sufficiently large datasets for robust estimation of risk parameters. For reasons discussed below, this is most clearly the case in relation to the equity beta.

A sample of nine regulated energy network businesses is very small. However the fact that five of these businesses are no longer trading creates further problems, since the data for these non-trading

[213] SFG, *The required return on equity for the benchmark efficient entity*, February 2015, Table 5. The risk-free rate assumed in these calculations is a placeholder estimate, based on a January averaging period.

businesses becomes 'stale' over time. The equity beta estimates for these non-trading businesses will reflect the risks faced by those businesses in the past, not the risks currently faced by a BEE. As noted in AusNet Services' Initial Regulatory Proposal, the level of risk faced in the supply of energy network services is changing, with businesses facing new operational risks arising from disruptive technologies. This change in risk profile is discussed in the accompanying expert report of Frontier Economics.[214]

The expert evidence before the AER demonstrates that the sample used by the AER is too small to provide statistically reliable estimates. Analysis by SFG demonstrates that:[215]

- Professor Henry's estimates based exclusively on the small sample of domestic energy network businesses are statistically unreliable.[216] SFG and Frontier note that the estimates are imprecise with wide standard errors, the estimates span a wide range, and that the results were sensitive to the choices of estimation method, sampling frequency and time period.[217] Figure7.5 below shows the wide confidence intervals around Professor Henry's estimates, and the wide range of individual company estimates based on just one methodology and sampling technique. Professor Henry reports some evidence of instability in his study based on Australian data only, possibly due to the small sample size;[218]
- Increasing sample size significantly reduces the dispersion of estimates. Previous analysis by SFG (2013) and Brooks, Diamond, Gray and Hall (2013) demonstrated that increasing sample size from nine to 18 firms is likely to reduce the dispersion of risk estimates by about one-third, and increasing sample size further to 27 firms is likely to reduce this estimation error by half.[219]

214 Frontier Economics, *Review of the AER's conceptual analysis for equity beta*, June 2015, section 3.

215 SFG, *Regression-based estimates of risk parameters for the benchmark firm*, 24 June 2013.

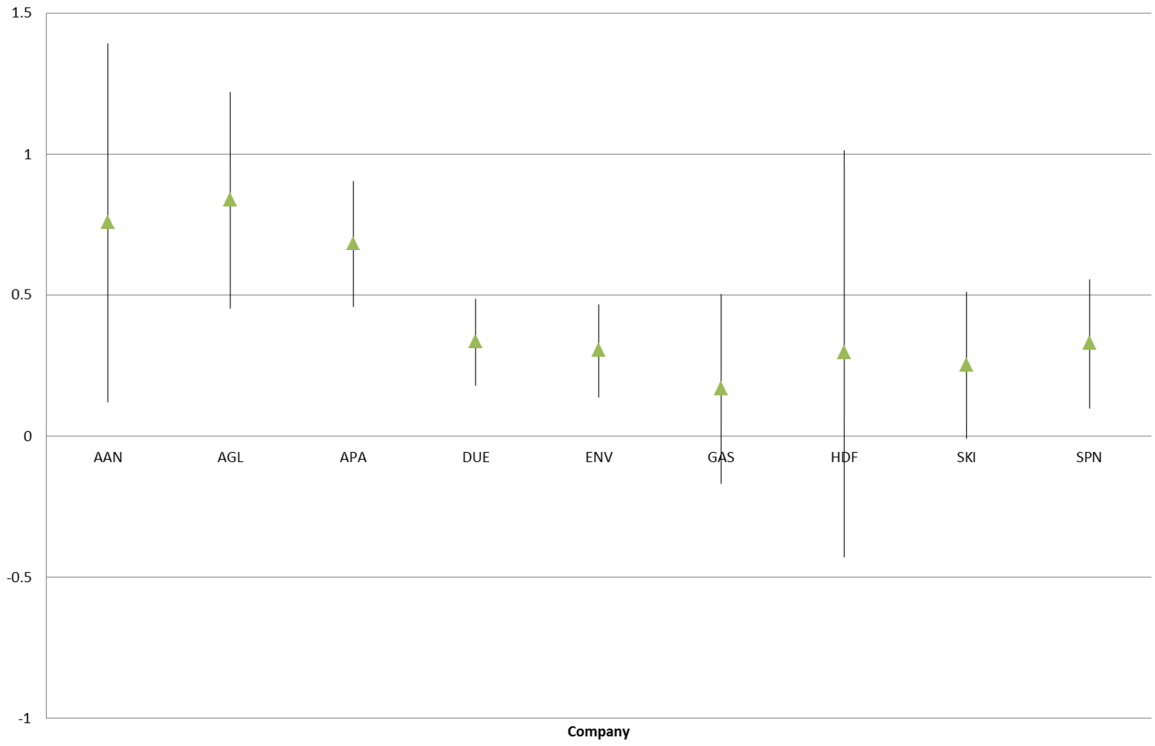
216 SFG, *Beta and the Black Capital Asset Pricing Model*, February 2015.

217 SFG, *Beta and the Black Capital Asset Pricing Model*, February 2015. Frontier, *Estimating the equity beta for the benchmark efficient entity,* January 2016, p 12-15 (Appendix 7F).

218 Olan T Henry, *Estimating β: An update*, April 2014, p. 62.

219 SFG, *Regression-based estimates of risk parameters for the benchmark firm*, 24 June 2013, p 9; Brooks, R., N. Diamond, S. Gray and J. Hall, *Assessing the reliability of regression-based estimates of risk*, 17 June 2013.

Figure 7.5: Confidence intervals around Henry (2014) estimates (OLS estimates based on monthly sampling over the longest available time period)



AusNet Services notes that there is no expert evidence recommending or supporting the use of such a limited sample. Professor Henry does not recommend use of the limited sample, but rather was instructed by the AER to use it.[220] The only expert evidence on this point is that of SFG and Frontier recommending a broader sample.[221]

AusNet Services has previously urged the AER to adopt a broader sample for estimating equity beta, based on expert advice from SFG. In its Initial Regulatory Proposal, AusNet Services adopted an equity beta estimate based on a sample including both Australian and US energy network businesses. In compiling this broader sample, due consideration had been given by CEG[222] (who constructed the international sample used by SFG) and SFG to the comparability of international businesses. SFG concluded that the businesses included in its sample are sufficiently comparable to the BEE such that they can be appropriately used as part of the dataset to estimate the equity beta range.[223] Further analysis by Frontier, in a report accompanying this proposal, shows that the Australian and US samples are sufficiently similar that they can be grouped together for the purposes of statistical analysis.[224] Frontier also shows that, due to the larger size of the US sample and greater stability in its composition, there is greater congruency between mean and portfolio estimates from this sample, as well as lower standard errors and tighter confidence intervals.[225]

An alternative (or additional) way to expand the data sample would be to include other comparable Australian businesses outside the energy network sector. The sample could be expanded to include

220 Olan T Henry, *Estimating β: An update*, April 2014, p. 4.

221 SFG, *Regression-based estimates of risk parameters for the benchmark firm*, 24 June 2013; SFG, *Beta and the Black Capital Asset Pricing Model*, February 2015; Frontier, *Estimating the equity beta for the benchmark efficient entity,* January 2016 (Appendix 7F)

222 CEG, *Information on equity beta from US companies*, June 2013.

223 SFG, *Regression-based estimates of risk parameters for the benchmark firm*, 24 June 2013, p. 10.

224 Frontier, *Estimating the equity beta for the benchmark efficient entity,* January 2016, p 30 (Appendix 7F)

225 Frontier, *Estimating the equity beta for the benchmark efficient entity,* January 2016 p 31 (Appendix 7F)

businesses operating in other sectors that face a similar degree of risk to the energy network businesses, such as telecommunications and transport businesses.

Expanding the sample to include businesses outside the energy sector would be consistent with AusNet Services' interpretation of the ARORO, as set out above. Inclusion of businesses from the telecommunications and transport sectors would ensure that the equity beta reflects the degree of risk faced by entities operating in a workably competitive market providing services similar to electricity distribution services within Australia.

Such an approach would also be consistent with a narrower definition of the BEE, such as that adopted by the AER. Even if the relevant level of risk is that of a regulated energy network business subject to economic regulation under the NEL, in this case it is clearly necessary to look beyond just those businesses that supply regulated energy network services within Australia in order to produce a sufficiently large datasets for robust estimation of the equity beta. Thus, it is necessary to expand the data sample to include businesses in other sectors that face a similar degree of risk to that faced by energy network business subject to economic regulation under the NEL.

In the accompanying expert report from Frontier Economics, analysis in conducted on a broader sample of listed Australian infrastructure businesses. The businesses included by Frontier include listed transport and logistics businesses (e.g. Aurizon, Asciano and Sydney Airport) and telecommunications businesses (e.g. Telstra). Frontier's statistical tests confirm that these listed infrastructure businesses are sufficiently comparable to the AER's sample of energy network businesses, such that it is appropriate to group this broader set of Australian infrastructure firms together.[226]

Frontier notes that expanding the sample to include other listed Australian infrastructure businesses improves the statistical properties of the resulting equity beta estimates – the estimates based on the broader domestic sample are more stable and more precise. Frontier notes that expanding the sample to include other listed Australian infrastructure businesses improves the statistical properties of the resulting equity beta estimates – the estimates based on the broader domestic sample are more stable and more precise (see Appendix 7F – Estimating the equity beta for the benchmark efficient entity, p 34).

It is common practice for regulators to use samples that include businesses outside of the sector and/or country that the regulated business operates in, in recognition of the fact that samples confined to that business' sector and/or country may be too small. For example:

- In estimating the equity beta for Telstra, the ACCC uses a sample of 22 international telecommunications businesses, including US, European and Asian businesses;[227]
- In estimating the equity beta for rail operator Aurizon Network, the QCA relies on analysis of a sample of 70 energy and water businesses, including a large number of international businesses;[228] and
- In estimating the equity beta for electricity distribution businesses the Commerce Commission in New Zealand relies on a sample of firm that includes a number of international utilities.[229]

In this case, given the paucity of data for Australian energy network businesses, the sample *must* be expanded to include US energy network businesses and/or other Australian infrastructure

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226 Frontier, *Estimating the equity beta for the benchmark efficient entity*, January 2016 (Appendix 7F)

227 ACCC, *Public inquiry into final access determinations for fixed line services: Final Decision*, October 2015, pp. 80-83.

228 QCA, *Draft Decision: Aurizon Network 2014 Draft Access Undertaking – Maximum Allowable Revenue*, September 2014, pp 248-249; Incenta, *Review of Regulatory Capital Structure and Asset / Equity Beta for Aurizon Network: Report to the Queensland Competition Authority*, 9 December 2013.

229 See, for example: Commerce Commission, *Input Methodologies (Electricity Distribution and Gas Pipeline Services): Reasons Paper*, December 2010, section 6.5 and Appendix H8.

businesses. Without the inclusion of these additional comparators, estimates of the equity beta for the BEE will be statistically unreliable.

(ii) The AER has erred in its determination of the equity beta range

The AER considers that "*the equity beta estimates presented in Henry's empirical analysis support a range of 0.4 to 0.7*" and that other empirical studies show "*an extensive pattern of support*" for an equity beta within a range of 0.4 to 0.7.[230]

However Professor Henry, in his report for the AER, does not recommend a range for the equity beta of 0.4 to 0.7. Rather, Professor Henry concludes, based on his analysis of Australian energy network data only, that the point estimate for beta is likely to lie in the range of 0.3 to 0.8.[231]

The AER's conclusion is based on the fixed weight portfolio estimates and the average of individual firm estimates in Professor Henry's report.[232] However relying on these measures alone is likely to be misleading as to the precision of Professor Henry's estimates, including because:

- First, the AER's conclusion from the individual firm estimates is based on a simple average of the estimates for each firm, with the AER's range from this measure (0.46 – 0.56) simply reflecting the dispersion of average measures based on different time periods.[233] Thus, what the AER relies on is not an empirical estimate, but rather an average of estimates for individual firms. These individual firm estimates vary widely, from 0.2 to 1.0[234], and thus a simple average is largely meaningless; and
- Secondly, the AER places significant weight on Professor Henry's portfolio estimates. However Professor Henry was not asked to provide expert advice on the rationale for preparing the portfolios, and it is not clear what the basis for formation of these portfolios was.[235]

Professor Henry's report in fact produces a very wide range of estimates for the equity beta, with some individual firm estimates in the range of 0.8 to 1.0 and confidence intervals around these estimates even wider, from -0.4 to 1.4 (at the 95% confidence level). As noted by SFG, the estimates vary widely depending on the chosen estimation method, sampling frequency and time period.[236]

Further, as explained above, the sample used by Professor Henry to estimate equity beta is too small to provide reliable estimates. As a result, a reliable equity beta range cannot be derived from this sample alone.

Evidence from wider samples supports an equity beta higher than 0.7. The evidence from Frontier Economics, SFG and CEG, based on a larger sample including international businesses indicates an equity beta of at least 0.82.

(iii) The AER's view as to the "best empirical estimate" is not supported by evidence

There does not appear to be any evidence for the AER's statement that "the best empirical estimate" of the equity beta is 0.5.

230 Preliminary Decision, pp. 3-479, 3-485.

231 Olan T Henry, *Estimating β: An update*, April 2014, p. 63.

232 Preliminary Decision, pp. 3-479.

233 Preliminary Decision, pp. 3-479.

234 Olan T Henry, *Estimating β: An update*, April 2014, Tables 2 and 5.

235 Olan T Henry, *Estimating β: An update*, April 2014, p. 36.

236 SFG, *Beta and the Black Capital Asset Pricing Model*, February 2015, [31].

Professor Henry does not recommend that a value of 0.5 be adopted, nor does his report refer to 0.5 as the "best empirical estimate". Rather, as noted above, Professor Henry recommends a range of 0.3 to 0.8, based on his analysis of Australian data only.[237]

Indeed, no expert concluded that the best empirical estimate of the equity beta is 0.5. Rather, the expert evidence supported an equity beta of at least 0.8.[238]

As noted above, the AER's conclusion as to the range and "best empirical estimate" for beta are based on its analysis of the fixed weight portfolio estimates and the average of individual firm estimates in Professor Henry's report.[239] However for reasons set out above, the analysis underpinning these conclusions is unsound.

The only experts that have been asked to opine as to the best estimate of the equity beta are SFG and Frontier. SFG's and Frontier's advice is that in order to arrive at a reliable estimate of the equity beta, a sample broader than that given to Professor Henry must be used. SFG and Frontier recommend an equity beta estimate of 0.82 based on a broader sample including both Australian and international businesses.

(iv) The AER's adjustment to the "best empirical estimate" is arbitrary

The AER states that the theory of the Black CAPM points to an estimate of the SL CAPM beta that is above the best estimate indicated by Professor Henry's analysis. This appears to be the reason for the AER's adjustment from the "best empirical estimate" of 0.5 to a final point estimate of 0.7.

AusNet Services understands that what the AER is seeking to make is an adjustment to the equity beta to account for is the SL CAPM bias that is indicated by Black CAPM theory. That is, while Black CAPM theory does not say anything about adjusting the equity beta to account for SLCAPM bias, this parameter is being used by the AER as the adjustment tool to account for this bias.

However in this case the adjustment made to the AER's "best empirical estimate" of beta is highly arbitrary. The AER cannot reasonably be satisfied that adjusting the equity beta estimate from 0.5 to 0.7 will adequately account for bias in the SL CAPM, because it has not sought to quantify the effect of this bias.

AusNet Services agrees that, if the SL CAPM is to be used alone to estimate the return on equity, some adjustment needs to be made to its input parameters to account for the known weaknesses of the model. If the SL CAPM is used without any adjustment, the empirical evidence shows that the return on equity for low-beta stocks will be significantly under-estimated.

Our concern is that the AER's adjustment to the equity beta is not sufficient to account for the shortcomings in the AER's implementation of the SL CAPM. In particular, it is clear that choosing the top of the AER's equity beta range is not sufficient to address the SL CAPM's low-beta bias, nor does it address the statistical reliability issues associated with the small sample used by the AER to estimate the equity beta. As shown above, it is clear that choosing the top of the AER's equity beta range will not correct for the low-beta bias in the SL CAPM indicated by Black CAPM theory – if the AER's parameter estimates are used in the Black CAPM along with the best available estimate of the zero-beta premium, the return on equity estimated by the Black CAPM is above the return on equity estimated by the AER using the SL CAPM (see Table 7.2 above).

Indeed the AER acknowledges that it does not know by how much it needs to adjust its equity beta estimate to account for the issues indicated by Black CAPM theory – i.e. the effects of low-beta bias in the SL CAPM. The AER notes that *"while the direction of this effect may be known, the magnitude is much more difficult to ascertain".*[240] Since the AER does not estimate the Black CAPM, it cannot make a proper adjustment.

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237 Olan T Henry, *Estimating β: An update*, April 2014, p. 63.

238 SFG, *Beta and the Black Capital Asset Pricing Model*, February 2015, section 4.

239 Preliminary Decision, pp. 3-479.

240 Preliminary Decision, pp. 3-497.

The size of the AER's adjustment is ultimately driven by the width of its equity beta range, rather than by an empirical analysis of the adjustment required to address the SL CAPM's weaknesses. Since the AER caps its range at 0.7, the adjustment to the equity beta can take the point estimate no higher than 0.7. Of course if the AER had adopted the recommendation of its consultant for an equity beta range of 0.3 to 0.8, its adjustment to account for Black CAPM theory and international evidence would have taken the point estimate to 0.8. Thus, the problem of arbitrariness in the AER's adjustment is compounded by the error in its construction of the equity beta range.

In this submission, AusNet Services puts forward an alternative method for estimating the return on equity using the SL CAPM alone, with an empirically based adjustment to account for the known weaknesses of this model. This alternative method is explained in section 7.4.6 below and the accompanying expert report from Frontier Economics.

7.4.5 Reasonableness of the overall outcome

(a) The AER's cross-check analysis

The AER considers that its return on equity estimate is broadly supported by:

- Estimates using the Wright approach;
- Estimates of the return on equity and ERP from independent valuation reports;
- The ERP range from the recent Grant Samuel valuation report for Envestra;
- Estimates of the return on equity and ERP from recent broker reports; and
- Estimates from other regulators.

In fact, when properly interpreted, these cross-checks do not support the AER's return on equity estimate. These cross-checks actually demonstrate that the AER's estimate of the return on equity is below that required to promote efficient investment in, and efficient use of electricity services for the long-term interests of consumers.

(i) Use of the Wright approach to support the AER's ERP estimate

As noted above, AusNet Services considers that the AER has misinterpreted and misapplied the work of Professor Wright. Wright did not develop an alternative implementation of the SL CAPM for checking of the overall return on equity. Rather, Wright developed an alternative method for estimating the MRP.

Further, the way in which the AER has developed its ERP range from the Wright approach means that this 'cross-check' will almost certainly support the AER's ERP estimate. The AER derives a wide range of estimates from the Wright approach by using an equity beta range of 0.4 to 0.7 and a market return range of 10.0% to 12.7%.[241] The AER then checks the reasonableness of its ERP estimate by confirming that it falls within the broad range of estimates derived from the Wright approach.

Clearly if the AER had used its chosen point estimate of beta in applying the Wright approach, this cross-check would not support the AER's return on equity and ERP estimates (Table 7.5). Even if the AER's lower bound value for the market return from Wright approach were to be adopted, the resulting return on equity would be above that allowed by the AER (7.8%, compared to 7.3% allowed by the AER). If a midpoint or upper bound value for the market return were to be taken from the Wright approach, the resulting return on equity and ERP would be significantly higher than that allowed by the AER.

[241] Preliminary Decision, pp. 3-511.

Table 7.5: Estimates of the return on equity and ERP using the Wright approach[242]

Approach to estimating the ERP	ERP estimate	Return on equity estimate
AER approach (equity beta 0.7; MRP 6.5%)	4.55%	7.3%
Wright approach with lower bound R_e estimate (equity beta 0.7; R_e 10.1%)	5.07%	7.8%
Wright approach with midpoint R_e estimate (equity beta 0.7; R_e 11.45%)	6.01%	8.8%
Wright approach with upper bound R_e estimate (equity beta 0.7; R_e 12.8%)	6.96%	9.7%

(ii) Independent valuation reports

The AER refers to estimates of the return on equity and ERP from independent valuation reports.

AusNet Services agrees that evidence from independent valuation reports provides an important reasonableness check on the AER's estimate of the required return on equity. These reports provide market evidence of the return on equity required by investors.

However, for reasons set out below, AusNet Services considers that this important market evidence has been misinterpreted by the AER. When properly interpreted, this evidence demonstrates that the AER's estimate of the return on equity is below that required by the market to promote efficient investment.

Most obviously, the independent valuation reports surveyed by the AER do not support the reasonableness of the AER's overall return on equity estimate. As noted by the AER, the range of imputation-adjusted estimates of the return on equity set out in these reports is 8.98 to 14.67 per cent.[243] This compares to the AER's estimate of 7.3 per cent.

This evidence also does not support the AER's ERP estimate, contrary to the conclusion of the AER in the Preliminary Decision. The AER states that its range of imputation-adjusted estimates for the ERP (a range of 3.72 to 11.67 per cent) is based on the 18 independent valuation reports identified in Table 3-20 of the TransGrid draft decision.[244] However after reviewing Table 3-20 of the TransGrid draft decision, it is unclear to AusNet Services how the AER has arrived at its ERP range.

An abridged version of Table 3-20 from the TransGrid draft decision is set out as Table 7.6 below. What this shows is that:

- The imputation-adjusted ERP in all but two of the surveyed reports is at least 5% - well above the ERP determined by the AER (4.55%);
- The imputation-adjusted ERP from the Grant Samuel report for Envestra (discussed below) is quoted as 4.47%. However this appears to be based on the midpoint of Grant Samuel's range of SL CAPM values, with none of the uplift used by Grant Samuel. As discussed below, a fundamental aspect of Grant Samuel's analysis was to conclude that the calculated SL CAPM return on equity was not an appropriate benchmark and understated the required rate of return on equity, and this was one reason why Grant Samuel applied an

242 Estimates of the market return are the AER's estimates, as set out in Table 3-61 of the Preliminary Decision. All calculations are based on a risk-free rate of 2.76%.

243 Preliminary Decision, pp. 3-518.

244 Preliminary Decision, pp. 3-517, footnote 1976.

uplift to its SL CAPM-based estimates. Incenta notes that on a correct interpretation of this report, the relevant range for the ERP is 5.27% to 5.37%, exclusive of any uplift for the value of imputation credits.[245] This clearly does not support the AER's ERP estimate; and

- The only other report with an imputation-adjusted ERP less than 5% is more than ten years old (the 2003 Deloitte report for United Energy). The return on equity and ERP estimate in this report cannot be said to be indicative of current practitioner views as to the required return on equity or ERP.

Of the 20 independent valuation reports referred to by the AER which have been published in the last decade, none of these actually used an ERP estimate below 5% (adjusted for imputation). Excluding the 2003 Deloitte report and using the correct range of estimates from the Grant Samuel Envestra report, the ERP range from this evidence is approximately 5 – 5.8% (based on the reports in Table 3-20 of the Draft Decision). Therefore, this market evidence clearly does not support the AER's ERP estimate.

Table 7.6: Independent valuation reports surveyed by the AER

Report date	AusNet Services	Valuer	Return on equity (imputation adjusted) [246]	ERP (imputation adjusted)
20/02/1998	Allgas Energy	Ernst & Young	n/a	n/a
19/03/1999	United Energy	SG Hambros	n/a	n/a
5/04/2003	GasNet	Sumner Hall	n/a	n/a
27/05/2003	United Energy	Deloitte	9.3	4.04
26/04/2006	AGL	Grant Samuel	11.6	5.8
19/06/2006	GasNet (regulated)	Lonergan Edwards	11.14	5.29
19/06/2006	GasNet (unregulated)	Lonergan Edwards	11.14	5.29
25/08/2006	Alinta Ltd	Grant Samuel	11.6	5.8
15/11/2006	Alinta Infrastructure Holdings	Grant Samuel	11.39	5.79
29/06/2007	Alinta Ltd (gas transmission)	Grant Samuel	11.74	5.74
29/06/2007	Alinta Ltd (gas and electricity distribution)	Grant Samuel	11.74	5.74
5/11/2007	SP AusNet (gas transmission)	Grant Samuel	11.78	5.68
5/11/2007	SP AusNet (gas and electricity distribution)	Grant Samuel	11.78	5.68
9/10/2009	Babcock & Brown Infrastructure Group (WA	Grant Samuel	n/a	n/a

245 Incenta, *Further update on the required return on equity from independent expert reports*, February 2015, p. 25.

246 Imputation adjusted estimates are taken from Table 3-20 of the TransGrid draft decision and thus reflect the adjustments for imputation made by the AER.

Report date	AusNet Services	Valuer	Return on equity (imputation adjusted) [246]	ERP (imputation adjusted)
	Gas Networks)			
9/10/2009	Babcock & Brown Infrastructure Group (Tas Gas Pipeline)	Grant Samuel	n/a	n/a
9/10/2009	Babcock & Brown Infrastructure Group (WestNet Energy)	Grant Samuel	n/a	n/a
9/10/2009	Babcock & Brown Infrastructure Group (TasGas)	Grant Samuel	n/a	n/a
22/09/2010	Spark Infrastructure Group	Lonergan Edwards	n/a	n/a
24/09/2010	Prime Infrastructure Group (TasGas)	Grant Samuel	10	5
13/04/2011	Spark Infrastructure Group	Lonergan Edwards	10.9	5.4
3/08/2012	Hastings Diversified Utilities Fund	Grant Samuel	8.52	5.52
3/10/2012	DUET Group	Grant Samuel	8.54	5.54
31/05/2013	DUET Group	Grant Samuel	n/a	n/a
4/03/2014	Envestra	Grant Samuel	8.67	4.47

(iii) Use of the Grant Samuel analysis

The AER has made significant errors in its interpretation of the Grant Samuel report for Envestra. When these errors are accounted for, it is clear that this evidence does not support the ERP and return on equity estimate adopted by the AER.

The AER presents a wide ERP range from the Grant Samuel report for Envestra – a range of 4.3 to 6.2 per cent – and on this basis concludes that its ERP estimate of 4.55 per cent is consistent with the range adopted by Grant Samuel.[247] However this range of ERP estimates referred to by the AER encompasses:[248]

- A lower bound that does not include any adjustment for imputation and does not allocate any of Grant Samuel's uplift to the ERP; and
- An upper bound that does include an adjustment for imputation and allocates all of Grant Samuel's uplift to the ERP.

The AER mixes apples and oranges, by mixing imputation-adjusted estimates with unadjusted estimates from the Grant Samuel report. Such an approach is illogical, particularly in circumstances

247 Preliminary Decision, pp. 3-520.

248 Preliminary Decision, pp. 3-520, footnote 1983.

where Grant Samuel has made clear that its estimates make no allowance for imputation credits.[249] Given that no allowance is made in the Grant Samuel estimates for imputation, an imputation adjustment must be made for comparison with the AER's ERP estimate. The unadjusted estimates from the Grant Samuel report are simply not comparable with the AER's ERP estimates. This is made clear in Grant Samuel's letter in response to the NSW draft decisions, where it states:[250]

> *"It is abundantly clear in our reports that we make no adjustment in our valuations for dividend imputation. Accordingly, a dividend imputation adjustment would be required to ensure comparability with the AER basis of calculation."*

Further, the Grant Samuel report and its letter in response to the NSW draft decisions make clear that the uplift is to account for factors likely to be affecting the return on equity (not the return on debt). The factors taken into account by Grant Samuel in making the uplift include: repricing of risk by equity investors since the GFC; alternative models, such as the Gordon Growth Model (a version of the DGM), currently indicating higher returns on equity than the SL CAPM; and evidence that brokers are currently adopting cost of equity estimates that are higher than indicated by the SL CAPM.[251]

A fundamental aspect of Grant Samuel's analysis was to conclude that the calculated SL CAPM return on equity was not an appropriate benchmark and understated the realistic required rate of return on equity, and this was one reason why Grant Samuel applied an uplift to its SL CAPM estimates. Therefore it is not appropriate to use Grant Samuel's "lower bound" SL CAPM estimate of the return on equity with no uplift.

Finally, it should be noted from the Grant Samuel report that it adopted a WACC estimate at the lower end of its range (6.5% - 7.0%) for the purposes of its valuation of Envestra assets, in order to ensure that the fairness assessment for the APA proposal was robust.[252] That is, Grant Samuel erred towards the lower end of its WACC range to ensure that its NPV valuation of the Envestra assets was conservative on the high side. This same tendency is not required to satisfy and, we argue, not consistent with the NEO or the ARORO, because these objectives seek to determine the return on equity that is sufficient to attract efficient investment in AusNet Services' network.

On a correct interpretation of the Grant Samuel report for Envestra, it is clear that it does not support the AER's return on equity or ERP estimate. Incenta notes that the range for the return on equity implied by Grant Samuel's uplift factor was from 9.47% to 9.57%, with a respective ERP range of 5.27% to 5.37%, exclusive of any uplift for the value of imputation credits.[253] These Grant Samuel ranges compare with the AER's cost of equity of 7.3% and ERP of 4.55%.

(iv) Broker reports

The information from broker reports referred to in the Preliminary Decision does not support the AER's return on equity estimate.

It should be noted that the AER only refers to estimates from recent broker reports, being reports published over the past year. These reports therefore provide good information as to current market expectations of the required return on equity. These reports also provide some indication of how market practitioners have been estimating the return on equity in the current low risk-free rate environment.

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249 Grant Samuel, *Financial Services Guide and Independent Expert's Report to the Independent Board Sub-committee in relation to the Proposal by APA Group*, 3 March 2014, Appendix 3, pp. 8-9.

250 Grant Samuel, *Australian Energy Regulator – Draft Decision*, letter to the directors of TransGrid, 12 January 2015, p. 7.

251 Grant Samuel, *Financial Services Guide and Independent Expert's Report to the Independent Board Sub-committee in relation to the Proposal by APA Group*, 3 March 2014, Appendix 3, pp. 8-9.

252 Grant Samuel, *Australian Energy Regulator – Draft Decision*, letter to the directors of TransGrid, 12 January 2015, p. 4.

253 Incenta, *Further update on the required return on equity from independent expert reports*, February 2015, p. 25.

Given that these reports are current, it is not appropriate to focus just on the ERP in these reports, as the AER appears to have done.[254] The evidence from these reports should also be used as a cross-check on the overall rate of return.

The relevant estimates for both the return on equity and ERP are the imputation-adjusted estimates. Estimates without an imputation adjustment cannot be compared to the AER's estimates of the ERP and return on equity.

The AER reports a range for the imputation-adjusted return on equity in recent broker reports of 7.3 to 9.3 per cent.[255] The AER's estimate of the return on equity is at the very bottom of this range.

(v) ERP estimates from 'other market participants', including practitioners and regulators

The AER also refers to ERP and return on equity estimates from other regulators, as part of the other information it takes into account in step 5 of its foundation model approach.

AusNet Services considers that past decisions of the AER and other regulators should not be used as direct evidence of the required return on equity. These decisions are at best secondary evidence of the prevailing return on equity at previous points in time. However the return on equity in these decisions:

- Will not reflect prevailing market conditions (rather, they will reflect market conditions at the time the decision was made); and
- May not be consistent with the ARORO, to the extent that they have been determined under different regulatory frameworks with different objectives.

Use of such decisions will also be circular and self-perpetuating where it is based on previous decisions the same regulator has made in relation to the return on equity.

For these reasons, AusNet Services does not propose a role for other regulators' decisions in determining the return on equity for the BEE.

(b) Conditioning variables

The Preliminary Decision refers to a number of conditioning variables, which are said to provide directional information, particularly in relation to the MRP. The evidence from these conditioning variables does not support the AER's approach to estimating the return on equity. In particular, this evidence is inconsistent with the AER's assumption that as the risk-free rate has fallen the MRP has remained constant (meaning that the return on equity has fallen in lock-step with the risk-free rate).

(i) Dividend yields

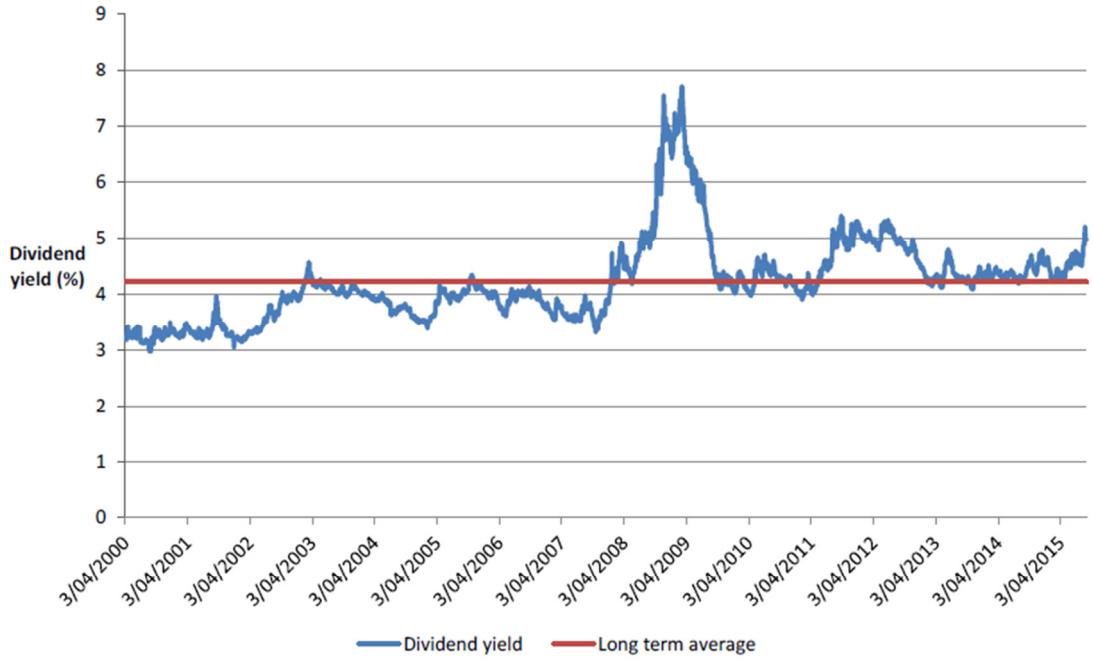
As shown by the AER's Figure 3-21 (reproduced below), dividend yields have increased significantly in recent months and are now well above pre-GFC levels.[256]

254 Preliminary Decision, pp. 3-521.

255 Preliminary Decision, pp. 3-521.

256 Preliminary Decision, pp. 3-395.

Figure 3-21 Dividend yields



Source: Bloomberg, AER analysis.

As explained by CEG, given that the risk-free rate has been lower in the post-GFC period (and is now near historic lows), this implies that the MRP has risen by more than an offsetting amount.[257] Certainly, this evidence is not consistent with the AER's view that the return on equity has been falling in lock-step with the risk-free rate.

The AER has misinterpreted this evidence, by treating it as merely an indicator of whether the MRP is above or below historical average levels. The AER dismisses this evidence on the basis that:[258]

> *"It is unclear whether the recent increase in dividend yields is evidence of a sharp and sustained move away from their long term average. This short term movement does not provide a clear signal that the MRP should not be close to its historical average level."*

However movements in the dividend yield are not just an indicator of changes in the risk premium required by investors. Rather, changes in dividend yield indicate movements in the overall required return on equity. Therefore the fact that dividend yields have been increasing and are now well above pre-GFC levels indicates that as the risk-free rate has fallen post-GFC, the equity risk premium has increased.

This evidence certainly does not support the AER's assumption that the return on equity has been falling in lock-step with the risk-free rate.

(ii) Implied volatility

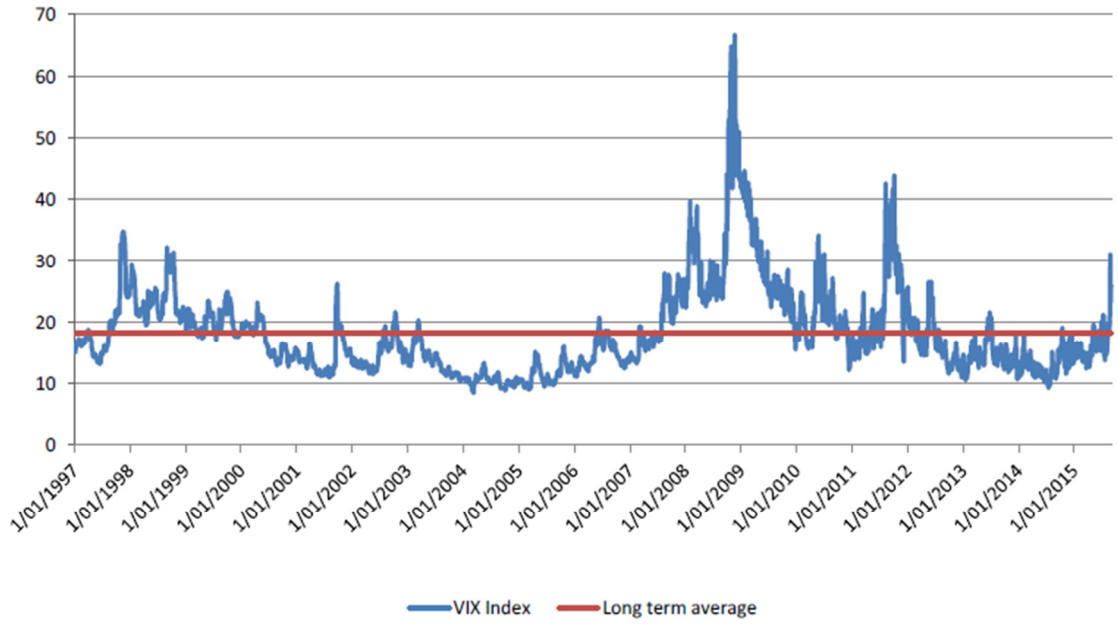
As shown by the AER's Figure 3-24 (reproduced below), the ASX200 implied volatility index has increased significantly in recent months and is now well above its 20-year average.[259]

257 CEG, *Estimating the cost of equity, equity beta and MRP*, January 2015, p. 27.

258 Preliminary Decision, pp. 3-394.

259 Preliminary Decision, pp. 3-398.

Figure 3-24 Implied volatility (VIX) over time



Source: ASX200 VIX volatility index, sourced via Bloomberg cost AS51VIX from 2/1/2008 and CITJAVIX prior to 2/1/2008.

Whereas in previous decisions the AER has considered a relatively stable volatility index to be evidence of a steady MRP, in the Preliminary Decision the AER does not appear to take the recent increase in this measure into account as evidence of a higher MRP.

Rather, like the evidence of higher dividend yields, the AER seeks to dismiss this evidence on the basis that it "does not provide a clear signal". The AER states:[260]

> *"In the month of August, implied volatility has increased relative to its steady pattern of being below its long run average since 2012. This short term movement does not provide a clear signal that the MRP should not be close to its historical average level."*

AusNet Services considers that the evidence for a higher MRP could not be any clearer. The AER's DGM analysis indicates that the MRP has increased as the risk-free rate has fallen, and that the MRP is now well above its historical average. The evidence from dividend yields and implied volatility measures further support this.

On the other hand, there does not appear to be any clear evidence to support the AER's view that the MRP has not changed as the risk-free rate has fallen or that the return on equity has fallen in lock-step with the risk-free rate—or even that current market conditions are consistent with average market conditions.

7.4.6 An alternative implementation of the foundation model approach

AusNet Services' preferred approach to estimating the return on equity is as set out in our Initial Regulatory Proposal. This approach has regard to all relevant models and evidence, and uses this material for its proper purpose. Each of the relevant return on equity models is independently used to derive an estimate of the required return on equity, while other relevant evidence is used to determine the best estimate of each parameter within these models. The outputs from each relevant model are then weighted to arrive at a return on equity estimate. Based on updated data to reflect

260 Preliminary Decision, pp. 3-398.

prevailing market conditions, this approach leads to an estimate of the prevailing return on equity of 9.8 per cent.

However if the AER proposes to continue relying solely on the SL CAPM to estimate the return on equity, the AER must change the way it implements this model. It is clear from the evidence referred to above that the way in which the SL CAPM is applied in the Preliminary Decision leads to a return on equity that is not consistent with the ARORO and does not reflect prevailing market conditions. The AER does not properly recognise the weaknesses of the SL CAPM, nor does it account for these weaknesses in its application of the model. Further, the AER's practice of applying an effectively fixed ERP to a variable risk-free rate is not appropriate in current market conditions, since it leads to the return on equity moving in lock-step with changes in the risk-free rate. The result is that the AER's estimate of the return on equity is below the level of return required by the market, as indicated by the AER's cross-checks and other relevant evidence.

The accompanying expert report of Frontier Economics outlines an alternative approach that involves properly adjusting SL CAPM parameters to deliver a return on equity that contributes to the achievement of the ARORO and reflects prevailing market conditions. This involves:[261]

- Using a current measure of the risk-free rate (i.e. the prevailing yield on 10-year CGS). Over the 20 business days to 30 September 2015, this produces a risk-free rate of 2.75 per cent;
- Deriving the MRP in a way that gives appropriate weight to measures of the prevailing (current) MRP. Frontier recommends that 50 per cent weight be given to estimates of the prevailing MRP from the DGM, 40 per cent weight to historical measures and 10 per cent weight to evidence from independent expert reports (i.e. evidence of market practitioner estimates of the MRP). Of the 40 per cent weight that is assigned to historical measures equal weight (i.e. 20 per cent each) is given to estimates of historical excess returns and estimates using the Wright approach. Over the 20 business days to 30 September 2015, this produces an MRP of 7.9 per cent;
- Estimating a 'starting point' equity beta using a sufficiently large dataset. Frontier recommends including both US and Australian energy network businesses to ensure that the dataset is large enough to produce robust estimates, with twice as much weight given to the Australian data. This produces a 'starting point' equity beta of 0.82; and
- Making two transparent and empirically based adjustments to the starting point equity beta estimate to account for the known shortcomings of the SL CAPM:
    - The first of these adjustments is to account for low beta bias, and draws on empirical evidence from the Black CAPM. Frontier recommends that 75 per cent weight be given to this adjustment, in recognition of the strong and consistent evidence of low-beta bias in the empirical literature (i.e. the adjustment is 75 per cent of the full adjustment that would need to be made to account for low-beta bias). This results in an adjustment from the starting point beta of 0.82 to a beta of 0.88; and
    - The second adjustment is to account for book-to-market bias (i.e. the failure of the SL CAPM to account for the effect of book-to-market ratio on stock returns). Frontier recommends giving less weight to this adjustment (25 per cent weight) in recognition that the evidence in relation to this bias is more recent. This results in a further adjustment, to an equity beta of 0.91.

This leads to an estimate of prevailing return on equity of 9.9 per cent in the placeholder averaging period (20 business days to 30 September).

Frontier observes that this estimate from the 'adjusted SL CAPM' is close to their estimate using the DGM, a model that is not affected by low-beta or book-to-market bias. Thus, the evidence from the DGM corroborates Frontier's adjusted SL CAPM estimate.

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261 Frontier, *The required return on equity under a foundation model approach,* January 2016 (Appendix 7C)

7.5 Gamma

7.5.1 Introduction

In the Preliminary Decision, the AER adopts a similar approach to estimating gamma as in recent decisions. This involves:

1. Conceptualising gamma as the before-personal-tax and before-personal-costs value of imputation credits. In line with this conceptual approach, the AER estimates gamma as the product of the distribution rate and the utilisation value to investors in the market per dollar of imputation credits distributed (referred to as the "utilisation rate").[262]
2. Deriving estimates of the distribution rate and theta for each of "all equity" and "listed equity".[263] For theta, the AER derives a number of different estimates, based on three different estimation methods:
   (a) the equity ownership approach, which uses ABS data to estimate the proportion of equity in Australian companies held by domestic investors;
   (b) tax statistics, which indicate the proportion of distributed imputation credits that are redeemed by investors; and
   (c) market value studies.
3. Calculating gamma values based on its pairing of:
   (a) its estimate of the distribution rate for all equity with its estimates of theta for all equity based on the equity ownership approach and tax statistics; and
   (b) its estimate of the distribution rate for listed equity with its estimates of theta for listed equity based on the equity ownership approach and market value studies.
4. Determining a range for gamma based on "the overlap of evidence from the equity ownership" approach (i.e. the overlap between the gamma ranges calculated by the AER based on the equity ownership approach for each of "all equity" and "listed equity").[264] The AER considered that the overlap of the evidence from the equity ownership approach suggests a value for gamma between 0.40 and 0.42.
5. Selecting a point within the range defined by step 4 by reference to evidence from tax statistics and market value studies. The AER observed that both tax statistics and SFG's market value study suggest a value for gamma lower than 0.4. On this basis, the AER adopted a value for gamma at the lower end of the range suggested by the overlap of the evidence from the equity ownership approach (that is, 0.4).[265]

As discussed below, the AER has made errors at each of these steps in its reasoning.

For reasons set out below, AusNet Services maintains its position that the best estimate of gamma is 0.25. This estimate reflects a proper interpretation of the NER and the best empirical evidence in relation to the value of imputation credits.

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262 Preliminary Decision, pp. 4-16.

263 Preliminary Decision, pp. 4-18.

264 Preliminary Decision, pp. 4-19.

265 Preliminary Decision, pp. 4-19.

7.5.2 The AER's conceptual approach to estimating gamma

The AER's conceptual approach to estimating gamma appears to have evolved since it published the Rate of Return Guideline in December 2013.

In the Rate of Return Guideline, the AER approached gamma as a measure of the proportion of imputation credits that can be utilised. The AER defined theta as "*the extent to which investors can use the imputation credits they receive to reduce their tax (or receive a refund)*".[266] Thus, in the Rate of Return Guideline, the AER appeared to treat gamma as a measure of the utilisation, or eligibility to utilise / potential for utilisation of imputation credits.

In the Preliminary Decision the AER seeks to estimate gamma as the "*before-personal-tax and before-personal-costs"* value of imputation credits. The AER appears to acknowledge in the Preliminary Decision that gamma is a measure of the value of imputation credits to investors[267], not simply their utilisation, or potential for utilisation. However the AER states that this value must be measured on a "*before-personal-tax and before-personal-costs basis".*[268] Consistent with this, the AER estimates the utilisation rate (theta) as *"the before-personal-tax and before-personal-costs utilisation value to investors in the market per dollar of imputation credits distributed*".[269]

Thus, between the Guideline and the Preliminary Decision, the AER appears to have shifted from treating gamma as a "utilisation" (or potential utilisation / eligibility for utilisation) concept to treating it as a "value" concept.

However, because the AER seeks to estimate value on a before-personal-tax and before-personal-costs basis, its approach is in fact unchanged. Since the AER ignores the effect of any factors which might reduce the value of imputation credits that are redeemed, its approach to estimating value is effectively equivalent to estimating the rate of imputation credit utilisation (or potential for utilisation) or to assuming that those factors have no affect—which it has not tested nor has any evidence to support. The AER explains this in the Preliminary Decision as follows:[270]

> *"In the Guideline, we also defined the utilisation rate as the extent to which investors can use the imputation credits they receive to reduce their tax (or receive a refund). In this decision, consistent with Handley's advice, we consider the utilisation rate is the utilisation value to investors in the market per dollar of imputation credits distributed. However, we consider that our views in the Guideline and in this decision are broadly equivalent; that is, our definition of the utilisation rate in this preliminary decision still reflects the extent to which investors in the market can use the imputation credits they receive. This is because, as discussed above and in sections A.5, A.7 and A.8.1, to be consistent with the Officer framework (and therefore the building block framework in the NER/NGR) the utilisation rate should reflect the before-personal-tax and before-personal-costs value of imputation credits to investors. On a before-personal-tax and before-personal-costs basis, an investor that is eligible to fully utilise imputation credits should value each dollar of imputation credits received at one dollar (that is, have a utilisation rate of 1)."*

In effect, the AER continues to interpret gamma as a measure of the utilisation of imputation credits, or a measure of investors' eligibility to utilise those credits.

As explained in AusNet Services' Initial Regulatory Proposal, this approach is contrary to the requirements of the NER and represents a significant departure from conventional and previous regulatory practice.

AusNet Services considers that it is clear from the language of clause 6.5.3. of the NER that the AER is required to estimate the value of imputation credits, not the utilisation of imputation credits, or a measure of investors' eligibility to utilise those credits. Clause 5.6.3 refers to the "value of imputation

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266 AER, *Better Regulation: Explanatory Statement Rate of Return Guideline*, December 2013, p. 159.

267 Preliminary Decision, pp. 4-16.

268 Preliminary Decision, pp. 4-16.

269 Preliminary Decision, pp. 4-33.

270 Preliminary Decision, pp. 4-53 – 4-54.

credits", not utilisation. Indeed, the NER were recently amended to change the definition of gamma from "the assumed utilisation of imputation credits" to "the value of imputation credits.

Further, a value-based approach to estimating gamma (and theta) will best promoted the NEO as it provides for overall returns which promote efficient investment. As noted by Professor Gray:[271]

> *"Under the building block approach, the regulator makes an estimate of gamma and then reduces the return that is available to investors from dividends and capital gains from the firm accordingly. In my view, it is clear that this is consistent with a value interpretation. If the value of foregone dividends and capital gains is greater than the value of received imputation credits, the investors will be left under-compensated, and vice versa."*

If gamma is treated as merely a measure of utilisation, or if the value of imputation credits is assessed before personal costs and taxation (i.e. ignoring these costs to investors), the overall return to equity-holders will be less than what is required to promote efficient investment. Quite simply, there will be certain costs incurred by investors – such as transactions costs involved in redeeming credits – which are not accounted for.

The value of imputation credits to investors will necessarily reflect (and will be net of) any transactions costs or other personal costs incurred in redeeming credits. Such costs cannot simply be assumed away. If such costs are assumed away, then the resulting estimate of theta (and therefore gamma) will overstate the true value of imputation credits to investors.

Therefore, AusNet Services maintains its position that the estimate of theta must simply reflect the value of imputation credits to investors. It would be an error to seek to estimate theta as a hypothetical before-personal-tax and before-personal-costs value.

7.5.3 Estimates of the distribution rate

(a) The appropriate measure of the distribution rate

The AER refers to a distribution rate for "all equity" and for "listed equity" only. The "all equity" figure is based on analysis of the cumulative payout ratio across all Australian companies, using ATO data. The "listed equity" figure is also based on ATO data, but with an allocation of total tax paid between public and private companies.[272]

AusNet Services considers that it is neither necessary nor appropriate to separately identify a distribution rate for a limited set of listed businesses only. This is because the distribution rate for all equity is likely to be a reasonable proxy for that of the benchmark entity. On the other hand, for reasons discussed below, the distribution rate for a limited set of listed businesses is likely to be a poor proxy for that of the benchmark entity.

Whereas the AER's definition of the benchmark entity is assumed to operate solely within Australia[273], the distribution rate for listed equity is likely to be skewed by the practices of multinational firms with significant foreign earnings. Almost two thirds of the value of listed entities comprises the top 20 firms, which tend to be large multinational firms with significant foreign earnings. The presence of material foreign earnings can have a significant impact on a firm's distribution rate because imputation credits are only created when tax is paid on Australian earnings, but may be distributed with any dividend (whether distributing Australian earnings or foreign earnings). This means that for a given dividend payout ratio (i.e., the proportion of profits that are distributed as dividends), the imputation credit distribution rate will be higher (as a proportion of total credits created) for an entity with more foreign profits.

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271 SFG, *Estimating gamma for regulatory purposes*, February 2015, [12].

272 NERA, *Estimating Distribution and Redemption Rates from Taxation Statistics*, March 2015, section 3.3.

273 The AER's definition of the benchmark efficient entity is a pure play, regulated energy network AusNet Services *operating within Australia*: AER, *Rate of Return Guideline*, p 7; AER, *Explanatory Statement, Rate of Return Guideline*, pp 32-35, see in particular the discussion of 'Operating within Australia' on p. 35.

This is illustrated by way of example by Professor Gray.[274] Professor Gray compares two hypothetical firms with the same dividend payout ratio (i.e., the proportion of profits that are distributed as dividends), but with different levels of foreign earnings. His example shows that the existence of foreign earnings leads to a materially higher distribution rate, even where the dividend payout ratio is the same.

The effect of foreign earnings on the distribution rate can also be seen in the empirical estimates of the distribution rate for different company types. As may be expected, the distribution rate for top-20 ASX listed companies (many of which will have material foreign earnings) is significantly higher than the average distribution rate across all companies (0.84 compared to 0.68). When top-20 ASX listed companies are removed from the public company set, the distribution rate for public companies falls to around the rate across all companies (0.69).

Table 7.7: Distribution rate by company type[275]

Firm type	Distribution rate
Top-20 ASX listed	0.840
Public but not top-20 ASX listed	0.693
All publicly listed	0.755
Private	0.505
All	0.676

Given that the BEE, by definition, is a business with no foreign profits, it would be inappropriate to use a measure of the distribution rate that is skewed by businesses with material foreign earnings.

In the Preliminary Decision the AER suggests that, although the listed equity distribution rate may be unrepresentative of the distribution rate for the BEE, it may nonetheless be necessary to use a listed equity distribution rate for "internal consistency".[276] The AER considers that where an estimate of theta is based on the value of imputation credits to a particular set of investors, the distribution rate that is combined with that theta estimate must be for the same set of investors. On this reasoning, the AER considers that if an estimate of theta based on listed equity data is used, this must be combined with a listed equity distribution rate.

For reasons discussed in section 7.5.5 below, AusNet Services does not agree that estimates of theta based on listed equity data must be paired with a listed equity distribution rate. The distribution rate and theta are separate parameters and need not be estimated using the same dataset. Whereas the distribution rate is a measure of the credit distribution practices of the BEE, theta is a measure of the value of credits to investors (or potential investors). In each case it must be considered which approach will provide the best estimate for the BEE, and there is no reason why this ought to be the same across all parameters. For reasons discussed above, the distribution rate for the BEE will be best proxied by the distribution rate across all companies. On the other hand, for reasons set out below, to the extent that the rate of equity ownership is relevant to theta, the most informative measure is that for listed equity. Put another way, the BEE is an entity with solely Australian earnings, but as likely to be foreign owned as any listed entity.

274 SFG, *Estimating gamma for regulatory purposes*, 6 February 2015, p. 45.

275 NERA, *Estimating Distribution and Redemption Rates from Taxation Statistics*, March 2015, p. 23.

276 Preliminary Decision, pp. 4-87.

This position is supported by Frontier Economics in its expert report accompanying this submission.[277] Frontier notes that whether the BEE is defined narrowly (as the firms that the AER regulates) or more broadly, for the purposes of estimating the distribution rate it would not include firms that have foreign-sourced profits to assist in the distribution of imputation credits. Thus, the distribution rate should not be estimated with reference to the top 20 ASX-listed firms, or with reference to any estimate that is materially affected by the top 20 firms. For this reason, Frontier recommends excluding the influence of the top 20 firms from any estimate of the distribution rate for the BEE. Frontier notes that but for the top 20 listed firms, the distribution rate estimate for listed equity is 70 per cent, which is in line with the distribution rate for all equity.

(b) Distribution rate for all equity

AusNet Services agrees with the AER's conclusion in the Preliminary Decision that the best estimate of the distribution rate across all equity is 0.7.

Recent analysis by NERA (referred to in Table7.7 above) indicates that the distribution rate across all equity is now slightly below 0.7, at around 0.68.[278] Therefore 0.7 represents a reasonable and conservative estimate.

7.5.4 Estimates of the value of distributed credits (theta)

(a) Types of evidence relied on by the AER to estimate theta

There are three types of evidence referred to by the AER in relation to theta. These are, in order of weight given by the AER:

- Equity ownership rates (i.e. the share of Australian equity held by domestic investors);
- Redemption rates from tax statistics; and
- Market value studies.

This section will address the relevance of each of the forms of evidence relied on by the AER in the Preliminary Decision, to the task of estimating the value of imputation credits to investors.

(i) Equity ownership rates

The AER continues to rely on the equity ownership approach as direct evidence of the value of distributed imputation credits. The AER states that its estimate of the value of distributed imputation credits "primarily reflects" the evidence from the equity ownership approach.[279]

The AER's estimates of the equity ownership rate provide a binding constraint on its estimates of theta and gamma. As noted above, the AER adopts a range for gamma based on "the overlap of evidence from the equity ownership" approach.[280] Other evidence is then only used to determine where in this range the AER's point estimate of gamma should lie. Since other evidence indicates a gamma that is below the AER's range from the equity ownership approach, this other evidence is effectively disregarded by the AER. It is only the AER's estimates of the equity ownership rate that are consistent with its estimates of theta and gamma.

In relying on equity ownership rates as direct evidence of the value of distributed imputation credits, the AER at least implicitly assumes that:

- All domestic investors are eligible to utilise imputation credits, while foreign investors are not (**Assumption 1**); and

277 Frontier, *The appropriate use of tax statistics when estimating gamma*, January 2016, p 15 (Appendix 7G).

278 NERA, *Estimating Distribution and Redemption Rates from Taxation Statistics*, March 2015, p. 23.

279 Preliminary Decision, pp. 4-17.

280 Preliminary Decision, pp. 4-19.

- Eligible investors (i.e. domestic investors) value imputation credits at their full face value because each dollar of imputation credits received can be fully returned to them in the form of a reduction in tax payable (**Assumption 2**).

Both of these assumptions are incorrect.

Assumption 1 is known to be incorrect due to certain tax rules which prevent redemption of credits by domestic investors in some circumstances. In particular, not all domestic investors are eligible to utilise imputation credits, for example due to the 45-day holding rule or because they are in a tax loss position.

The AER acknowledges the 45-day rule but considers that it can be assumed to have a negligible effect.[281] However, the analysis underpinning this conclusion is based on data that is known to be unreliable. The AER relies on analysis of the ATO dividend data presented in an expert report by Dr Neville Hathaway dated September 2013.[282] However that report explained that there "appears to be a big problem with the data" in that a large amount of credits are not accounted for in the ATO dividend data – i.e. there is $87.5 billion in franking credits that appear in the ATO tax paid and franking account balance (FAB) data, but which are missing from the dividend data. Dr Hathaway expresses more confidence in the ATO tax paid and FAB data, and says that it is likely to be the dividend data where the problem lies.[283] The AER analysis on the effect of the 45-day rule appears to be entirely based on the ATO dividend data, despite Dr Hathaway's warnings regarding the reliability of this data. The AER does not appear to take into account the point made by Dr Hathaway, that the dividend data appears to grossly underestimate the amount of imputation credits distributed, or to assess whether this data is reliable enough to analyse the impact of the 45-day rule.[284]

The ATO tax paid and FAB data (which Dr Hathaway considers to be more reliable) indicate that the redemption rate for imputation credits is materially below the domestic equity ownership rate across all equity, suggesting that equity ownership figures do overstate the level of actual utilisation. The AER (correctly) observes that the current redemption rate is 0.45, which is significantly below the domestic equity ownership rate across all equity (currently 0.6).[285] This indicates that factors such as the 45-day rule or tax losses are in fact preventing or deterring the redemption of imputation credits by some domestic investors.

As for Assumption 2 above, AusNet Services' Initial Regulatory Proposal identified a number of reasons why even eligible investors will not value imputation credits at their full face value. These include transaction costs associated with the redemption of imputation credits and portfolio effects (discussed below).

Given that neither of these assumptions hold, equity ownership rates cannot be used as direct evidence of the value of distributed imputation credits. Equity ownership rates will only indicate the maximum set of investors who ***may*** be eligible to redeem imputation credits and who may therefore place ***some*** value on imputation credits. Certainly theta cannot be higher than the domestic equity ownership rate, since foreign investors cannot place any value on imputation credits and it would be irrational to place more value on a redeemed credit than the dollar value of tax that can be offset by it. However the domestic equity ownership rate cannot be used as direct evidence of the value of imputation credits, because it does not account for the fact that:

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281 Preliminary Decision, pp. 4-72.

282 Preliminary Decision, pp. 4-72. Table 4-6 refers to the following report as its data source: Dr Neville Hathaway, *Imputation Credit Redemption ATO data 1988-2011 – Where have all the credits gone?*, September 2013. It appears that the data in Table 4-6 is drawn from Figure 4 of Dr Hathaway's report, which (as explained in paragraphs 51 and 52 of that report) relies on the ATO dividend data.

283 Dr Neville Hathaway, *Imputation Credit Redemption ATO data 1988-2011 – Where have all the credits gone?,* September 2013, paragraph 50.

284 The figures in Table 4-6 on page 4-72 of the Preliminary Decision appear to be taken from Figure 4 on page 18 of Dr Hathaway's report, which is based on the ATO dividend data.

285 Preliminary Decision, p. 18.

- Some domestic investors may be ineligible to redeem imputation credits; and
- Even eligible investors will not value imputation credits at their full face value.

Therefore the AER has erred in concluding that equity ownership rates are direct evidence of the value of imputation credits (or evidence from which a value can be inferred) and in giving these measures the primary role in the determination of a point estimate for theta.

(ii) Tax statistics

The AER also appears to rely on redemption rates from tax statistics as direct evidence of the value of distributed imputation credits. The AER states that it has placed "some reliance" on tax statistics in estimating theta, but less reliance than is placed on equity ownership rates.[286]

Redemption rates from tax statistics will be closer to the true value of imputation credits than domestic equity ownership rates. This is because redemption rates account for certain factors impacting on the value of imputation credits which are not accounted for in the domestic equity ownership rate – for example, redemption rates will reflect the fact that some domestic investors are not eligible to redeem credits due to the 45-day holding rule, and that some investors face costs and other barriers that deter them from utilising imputation credits.

However redemption rates from tax statistics also cannot be used as direct evidence of the value of distributed imputation credits, because redemption rates do not take into account the fact that investors may value redeemed credits at less than their full face value. As noted above, AusNet Services' Initial Regulatory Proposal identified a number of reasons why investors will not value imputation credits at their full face value, including:

- **Transaction costs**. Transaction costs associated with the redemption of credits may include requirements to keep records and follow administrative processes. This can be contrasted with realisation of cash dividends, which are paid directly into bank accounts. The transaction costs associated with redemption of imputation credits will tend to reduce their value to investors (meaning that the value of credits redeemed will be less than their face value) and may also dissuade some investors from redeeming credits (thus reducing the redemption rate);
- **Time value of money**. There will typically be a significant delay (which can be years) between credit distribution and the investor obtaining a tax credit. This may be a period of several years in some cases, for example where credits are distributed through other companies or trusts, or where the ultimate investor is initially in a tax loss position. Over this period, the value of the imputation credit to the investor may be expected to diminish, due to the time value of money; and
- **Portfolio effects**. Portfolio effects refer to the impact of shifting the investor's portfolio away from the optimal construction (including overseas investments) in order to take advantage of imputation. An investor who would otherwise invest overseas (to get a better return from the overall portfolio) might choose instead to make that investment in Australia to obtain the benefit of an imputation credit. This reallocation of portfolio investment would tend to continue with the relevant imputation credit having less and less marginal value until an equilibrium is reached with the credit having no additional value: that is, on average, the value of the imputation credits will be less than the face value. To the extent that an investor reduces the value of their overall portfolio simply to increase the extent to which they can redeem imputation credits, this lost value will be reflected in a lower valuation of the imputation credits. These portfolio effects are further explained in the expert report of Professor Stephen Gray which accompanied AusNet Services' Initial Regulatory Proposal.

Redemption rates from tax statistics can only indicate the upper bound for theta. Theta clearly cannot be higher than the proportion of credits that are redeemed by investors, since credits that will

[286] Preliminary Decision, pp. 4-25.

never be redeemed have no value. However theta may be (and for reasons referred to above, is likely to be) less than the redemption rate.

Therefore the AER has erred in giving redemption rates a direct role in the determination of a point estimate for theta, and in failing to recognise that redemption rates are an upper bound for theta.

(iii) Market value studies

The AER places least weight on market value studies, as it considers that these studies have a number of limitations, including:[287]

- These studies can produce nonsensical estimates of the utilisation rate – that is, greater than one or less than zero;
- These studies can be data intensive and employ complex and sometimes problematic estimation methodologies;
- The results of these studies can reflect factors, such as differential personal taxes and risk, which are not relevant to the utilisation rate;
- The results of these studies might not be reflective of the value of imputation credits to investors in the market as a whole; and
- It is only the value of the combined package of dividends and imputation credits that can be observed using dividend drop-off studies, and there is no consensus on how to separate the value of dividends from the value of imputation credits (the 'allocation problem').

In effect, the AER is raising two questions in relation to market value studies:

- Are they measuring the right thing? (reflected in the third point above)
- How well are they measuring it? (reflected in the other four points)

(A) Are market value studies measuring the right thing?

The first concern flows from the AER's conceptual definition of theta, which seeks to exclude the effects of personal taxes and personal costs. Since market values will reflect the impact of personal costs and taxation, the AER considers that a market value approach may not be compatible with its revised definition of theta.

As noted above, AusNet Services does not agree with the AER's revised definition of theta (i.e. the qualified version which ignores the effects of personal costs and taxation). As explained in AusNet Services' Initial Regulatory Proposal, theta must reflect the value of distributed imputation credits to investors, which will necessarily reflect (and will be net of) any transaction costs or other personal costs incurred in redeeming credits.

If the conventional definition of theta is adopted – i.e. defining theta as the value of distributed imputation credits to investors – then use of market value studies is entirely compatible with this definition. Market value studies will reflect the value of imputation credits to investors, as reflected in market prices for traded securities.

Indeed, of the three approaches identified by the AER to estimate theta, an approach based on market value studies is the only approach that is entirely compatible with a definition of theta that is consistent with the NER and the NEO. As discussed above, both equity ownership rates and redemption rates from tax statistics will overstate the true value of theta, since they will not reflect certain factors which affect the value of imputation credits to investors.

Use of market value studies – and more generally, the adoption of a market value measure – is also consistent with how other rate of return parameters are estimated.[288] Other rate of return parameters

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287 Preliminary Decision, pp. 4-29.

288 As noted above, the NER requires the rate of return and the value of imputation credits to be measured on a consistent basis (NER, clause 6.5.2(d)(2)).

such as the MRP and DRP are estimated based on the return required by investors as reflected in market prices. The market value measures of these parameters are not adjusted to account for personal costs or other factors which may be reflected in market prices.

In any event, even if the AER's definition of theta were to be adopted, there is a relatively simple adjustment that can be made to estimates from market value studies to address this concern. As explained by Associate Professor Handley, this involves 'grossing up' the theta estimate from a market value study to reflect the effect of personal costs. If this adjustment were to be made to the estimate from the estimate from Professor Gray's dividend drop-off study, it would result in a small increase in the theta estimate, from 0.35 to 0.4.[289] (For clarity, AusNet Services does not agree with this adjustment, because the AER's conceptual definition of theta is clearly wrong. However, if the AER's definition was to be adopted, then this does not require wholesale rejection of market value evidence, since an adjustment can be made to account for differences between the AER's definition and the conventional definition).

(B) Do market value studies accurately measure that thing?

The AER lists several methodological concerns with dividend drop-off studies, several of which are not relevant to the particular study relied on by AusNet Services.

In particular, the AER's concern about 'nonsensical results' clearly does not apply to Professor Gray's dividend drop-off study. Professor Gray's study produces a theta estimate of 0.35, which is an entirely sensible result given that:

- It is within the theoretical bounds for theta (i.e. it is between zero and one);
- It is below the domestic equity ownership rate for both listed equity (0.46) and all equity (0.6). As noted above, the domestic equity ownership rate indicates the maximum set of investors who ***may*** be eligible to redeem imputation credits and who may therefore place ***some*** value on imputation credits, and therefore it may be expected that the value for theta would be below this figure; and
- It is also below the redemption rate indicated by tax statistics (0.45). Again, this may be expected given that redemption rates will indicate the upper bound for theta and do not capture certain factors affecting value, such as the time value of money, transaction costs and portfolio effects.

Indeed, the result of the SFG study is consistent with the other evidence and a result that is to be expected in light of that evidence.

Similarly, the AER's concern about 'problematic estimation methodologies' may apply to ***some*** market value studies but does not apply to the particular study relied on by AusNet Services. The methodology used in Professor Gray's study is the product of a consultative development process involving the AER and several regulated businesses and overseen by the Tribunal in the *Energex* review. The methodology used in Professor Gray's study was designed specifically to overcome the methodological shortcomings of previous studies (e.g. shortcomings in the methodology employed by Beggs and Skeels (2006), which were identified by the Tribunal in the *Energex* review). In accepting the conclusions of Professor Gray's study, the Tribunal expressed confidence in those conclusions in light of the careful scrutiny to which the methodology had been subjected, and the way in which it had been designed to overcome shortcomings of previous studies.[290]

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289 John C Handley, *Advice on the Value of Imputation Credits*, 29 September 2014, p. 43.

290 *Application by Energex Limited (Gamma) (No 5)* [2011] ACompT 9, [22].

Professor Gray notes that the dividend drop-off literature has evolved over time, and that the SFG studies use current state-of-the-art techniques. Professor Gray explains:[291]

> *"In relation to dividend drop-off studies, I first note that the dividend drop-off literature has evolved over time, as do all areas of scientific investigation. This evolution has seen the development of different variations of the econometric specification, different variations of regression analysis, and different types of sensitivity and stability analyses. It has also seen material growth in the available data. The SFG studies use the latest available data, and they apply a range of econometric specifications, regression analysis and sensitivity and stability analyses that have been developed in the literature. The SFG estimate of 0.35 is based on this comprehensive analysis. It is not as though the SFG studies use one of the reasonable approaches and other studies use different reasonable approaches. The SFG studies are comprehensive state-of-the-art studies."*

Box 1 below outlines the process by which the methodology used in Professor Gray's study was developed, and the conclusions of the Tribunal in relation to that methodology. In light of this, it cannot be said that Professor Gray's study shares the same methodological issues as previous market value studies. Rather, this study was specifically designed to overcome the shortcomings of previous studies.

[291] SFG, *Estimating gamma for regulatory purposes*, February 2015, [177].

Box 1: Key conclusions of the Tribunal in *Energex* in relation to the SFG methodology

In *Application by Energex Limited (No 2)* [2010] ACompT 7, the Tribunal had before it two market value studies which produced different estimates of theta – a study by Beggs and Skeels (2006) and a study by SFG (2010) which sought to replicate the Beggs and Skeels (2006) methodology. The Tribunal identified shortcomings in the methodology used in both studies and observed that the results of both studies should be treated with caution.

The Tribunal therefore sought a new "state-of-the-art" dividend drop-off study. To this end, the Tribunal directed that the AER seek a re-estimation by SFG of theta using the dividend drop-off method, but without the constraint that the study replicates the Beggs and Skeels (2006) study. The Tribunal encouraged the AER to seek expert statistical or econometric advice to review the approach prior to the estimation proceeding and to consider any possible enhancements to the dataset. It was said that the new study should employ the approach that is agreed upon by SFG and the AER as best in the circumstances.

The terms of reference for the new study were settled between the AER and the businesses involved in the Energex review (Energex, Ergon and ETSA Utilities), with oversight from the Tribunal. The AER and the businesses also had the opportunity to comment on a draft of the report, and SFG's responses to those comments are incorporated in the final report.

In submissions to the Tribunal, the AER raised eight "compliance" issues with the final SFG (2011) study – these were perceived issues of non-compliance by SFG with the agreed terms of reference. The Tribunal was not concerned by any of these issues and considered that they raised no important or significant questions of principle. The Tribunal concluded that any departures from the agreed terms of reference were justified, or even necessary and observed that calling them "major compliance issues" was unnecessarily pejorative.

The Tribunal was ultimately satisfied that the procedures used by SFG (2011) to select and filter the data were appropriate and did not give rise to any significant bias in the results obtained from the analysis. It was also not suggested by the AER that the data selection and filtering techniques had given rise to any bias.

In relation to the model specification and estimation procedure, the Tribunal concluded:

> *"In respect of the model specification and estimation procedure, the Tribunal is persuaded by SFG's reasoning in reaching its conclusions. Indeed, the careful scrutiny to which SFG's report has been subjected, and SFG's comprehensive response, gives the Tribunal confidence in those conclusions. In that context, the Tribunal notes that in commissioning such a study, it hoped that the results would provide the best possible estimates of theta and gamma from a dividend drop-off study. The terms of reference were developed with the intention of redressing the shortcomings and limitations of earlier studies as far as possible."*

Ultimately, the Tribunal was satisfied that the SFG (2011) study was the best study available at that time for the purposes of estimating gamma in accordance with the Rules. The Tribunal did not accept the submission of the AER that either minor issues in the construction of the database or econometric issues would justify giving the SFG study less weight and earlier studies some weight.

The other two issues referred to by the AER – the allocation problem, and the possibility that the results of these studies might not be reflective of the value of credits to investors in the market as a whole – have previously been considered and addressed by Professor Gray. These issues are again addressed in Professor Gray's most recent report.[292] As noted in AusNet Services' Initial Regulatory Proposal:

- In relation to whether estimates reflect the value of credits to investors in the market as a whole, and whether there may be some impact on the theta estimate from 'abnormal trading' around ex-dividend day, Professor Gray notes that to the extent this effect is material it would result in the dividend drop-off (and therefore the theta estimate) being higher than it otherwise would be.[293] This is because any increase in trading around ex-dividend day would be driven by a subset of investors who trade shares to capture the dividend and imputation credit and who are therefore likely to value imputation credits highly (i.e. higher than the average investor). These investors tend to buy shares shortly before payout of dividends (which pushes up the share price) and tend to sell shortly after (which pushes down the share price), the overall effect of which is to increase the size of the price drop-off; and
- In relation to the allocation issue, Professor Gray notes that empirical evidence provides a very clear and consistent view of the combined value of cash and imputation credits.[294] This evidence indicates that the combined value is one dollar. The relevant evidence includes the recent studies by SFG (2011 and 2013) and Vo et al (2013). Allocation can be made based on this clear evidence as to the combined value of the cash/credit package.

In summary, the general set of 'limitations' referred to by the AER do not provide a justification for placing limited weight on the particular market value study relied on by AusNet Services. Several of the general limitations do not apply to the SFG study that is relied on by AusNet Services, and the other concerns have been comprehensively addressed by Professor Gray.

The AER's approach to considering market value studies – which involves simply identifying limitations which ***may*** apply to these studies in general, without considering whether those limitations apply to the particular study relied on by AusNet Services – is illogical and unreasonable. Without considering whether the potential limitations it has identified actually apply to the SFG study, the AER cannot reasonably form a view that this study is unreliable or should be given limited weight.

Accordingly, the AER has erred in placing only limited weight on all market value studies in estimating theta. AusNet Services considers that approach to be incorrect. Market value studies that are methodologically robust – in particular the SFG study – can and should be used as direct evidence of the value of imputation credits.

Market value studies are the only form of evidence which can provide the basis for a point estimate of theta, rather than just an upper bound.

(b) Estimates relied on by the AER

(i) Range of estimates for the equity ownership rate

The AER concludes that a reasonable estimate of the equity ownership rate is between:[295]

- 0.56 and 0.68, if all equity is considered; and
- 0.38 and 0.55, if only listed equity is considered.

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292 SFG, *Estimating gamma for regulatory purposes*, February 2015, [185].

293 SFG, *An appropriate regulatory estimate of gamma*, May 2014, [150]-[153].

294 SFG, *An appropriate regulatory estimate of gamma*, May 2014, [158]-[163].

295 Preliminary Decision, pp. 4-100.

The AER then combines these ranges with its estimates of the distribution rate to derive corresponding ranges for gamma. The AER's gamma estimate is taken from the point of overlap between these two ranges.

AusNet Services has three concerns with the AER's approach to the construction of ranges for the equity ownership rate:

- First, the AER has erroneously treated equity ownership rates as direct evidence of theta. For reasons discussed above, equity ownership rates provide at best an upper bound for theta;
- Secondly, the AER has used estimates of the "listed equity" and "all equity" equity ownership rate, without proper consideration of which measure is likely to be most appropriate for the BEE; and
- Thirdly, the AER has inappropriately taken a range for the equity ownership rate over a long period, rather than assessing the current equity ownership rate.

The first issue is addressed in section 7.5.4(i) above. The second and third issues are addressed below.

(A) Listed equity and all equity measures

Given that measures of the equity ownership rate are available both for all equity and listed equity only, it is necessary to consider which of these measures is likely to be most appropriate in estimating the value of imputation credits to investors in the BEE.

To the extent that equity ownership rates are relevant (i.e. as an absolute upper bound on theta), the relevant measure is the listed equity measure. This is because the equity ownership rate for the BEE is best proxied by the listed equity ownership rate.

Businesses with the characteristics of the BEE are likely to be at least as attractive to foreign investors as listed companies. This is evident from:

- The large proportion of privately owned network AusNet businesses that are partly or wholly foreign owned (refer to Table 7.8 below); and
- The interest shown by foreign investors in recent sales of network businesses.[296]

Table 7.8: Foreign ownership of privately owned network businesses in VIC and SA

Business	Foreign Owners (incl. via holding companies)	Foreign ownership Share	Domestic owners	Domestic ownership share
JEN	Singapore Power International, State Grid Corporation	100%	N/A	0%
United Energy	Singapore Power International, State Grid Corporation	34%	DUET Group	66%
Citipower	Cheung Kong Group	51%	Spark Infrastructure	49%
Powercor	Cheung Kong Group	51%	Spark Infrastructure	49%

[296] For example, short-listed bidders for TransGrid assets included consortia that included China State Grid and interests from Canada, Abu Dhabi and Kuwait.

Business	Foreign Owners (incl. via holding companies)	Foreign ownership Share	Domestic owners	Domestic ownership share
AusNet Services	Singapore Power International, State Grid Corporation	51%	N/A	49%[297]
SA Power Networks	Cheung Kong Group / Power Assets	51%	Spark Infrastructure	49%
ElectraNet	State Grid Corporation	80%	Hastings Utilities Trust	20%
Australian Gas Networks	Cheung Kong Group	100%	N/A	0%

The equity ownership rate for all equity is unlikely to be a good proxy for the equity ownership rate for a BEE, since the "all equity" group will include a very large number of small, privately-owned and family companies, and will therefore include many businesses that are comparatively unattractive or inaccessible to foreign investors (e.g. the local corner store).

(B) Time period for measuring the equity ownership rate

The AER derived its ranges for the equity ownership rate by considering the range for this metric over a period commencing in July 2000. The period since July 2000 was chosen on the basis that a change in the tax law occurred in July 2000, entitling domestic investors to a refund for excess credits.

There is no apparent basis for taking figures up to 15 years old. Rather, to the extent that domestic equity ownership is relevant, what is required is an estimate that is commensurate with the prevailing conditions in the market, and current rates of equity ownership. It is the current rate of domestic equity ownership that will affect the ability of current investors to redeem (and therefore place some value on) imputation credits. The domestic equity ownership rate at some previous point in time is not relevant to this. The AER's approach in this regard is entirely inconsistent with the estimate of many other parameters, such as the risk free rate. There is no reason to think that the figures for the prevailing rate of equity ownership are unreliable.

The domestic ownership rate (as analysed by the AER) is currently 0.45 for listed equity and 0.6 for all equity. To suggest that the current equity ownership rate could be as high as 0.55 for listed equity, or as high as 0.68 for all equity, is simply incorrect.

Even if it were appropriate to consider the equity ownership rate over some extended period, the AER's choice of period is arbitrary. As noted above, the AER justifies its choice of period on the basis that a change in the tax law occurred in July 2000, entitling domestic investors to a refund for excess credits. However the choice of this event as the starting point for the data series is arbitrary, given that there are more recent events (such as the GFC) which are likely to have caused a change in the rate of foreign ownership.

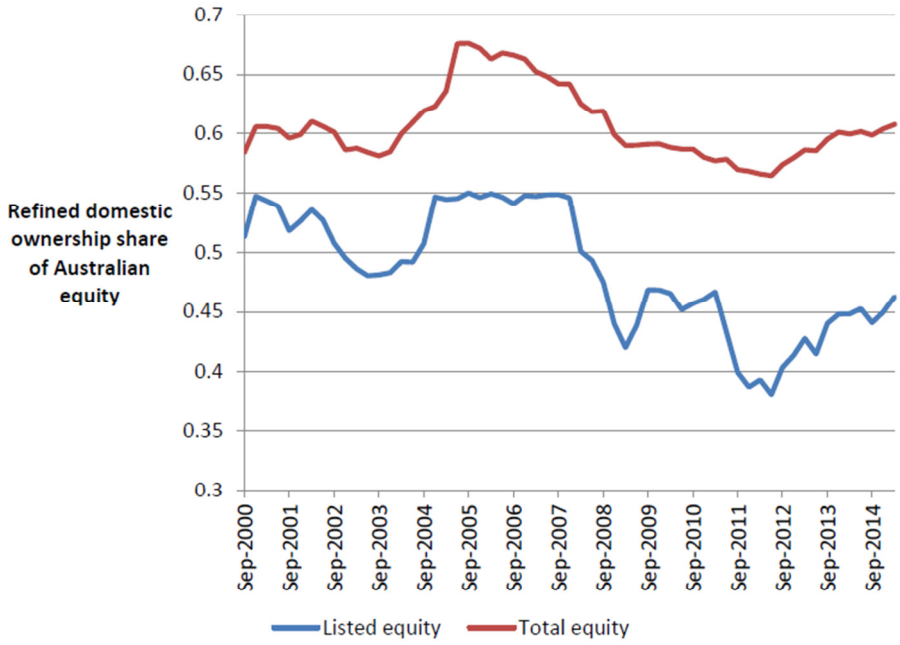
The chart presented in the Preliminary Decision (reproduced below) shows that the AER's choice of period is significant to its conclusion on the domestic equity ownership rate. If, for example, the AER had confined its consideration to a period after the onset of the GFC, it would have drawn very different conclusions as to the domestic equity ownership rate. Since September 2008, the domestic

297 This is likely to over-state the level of domestic ownership in AusNet. Of the 49% that is not held by Singapore Power International and State Grid Corporation, it is not clear how much is held by foreign investors. For the purposes of this analysis, it is assumed that none of the remaining 49% is held by foreign investors.

equity ownership share has been in a much narrower range of 0.56 – 0.61, and for listed equity it has been in the range of approximately 0.38 – 0.47. This simple change to the period of analysis would have to significantly alter the AER's conclusion on gamma, since:

- The AER could not have identified an overlap between its estimates of gamma based on equity ownership for listed and all equity. Taking the more recent (post-GFC) period to measure the equity ownership rate leads to a range for gamma of 0.29 – 0.36 based on all equity measures, and a range of 0.40 – 0.43 based on all equity. Since there is no overlap between these ranges, it is not clear how the AER would have derived a primary range for gamma had it used a shorter period of analysis for the equity ownership rate;
- If this more recent period were to be adopted, the AER's gamma estimate of 0.4 could not be reconciled with the evidence on the equity ownership rate for listed equity. Indeed, the AER's estimate of gamma would not be consistent with any of the evidence for listed equity.

Figure 4-3 Refined domestic ownership share of Australian equity



Source: Australian National Accounts: Finance and Wealth (ABS cat. 5232.0), tables 47 and 48.

(C) The relevant measure of the equity ownership rate

For reasons set out above, to the extent that equity ownership rates are relevant in providing an absolute upper bound for theta, the correct figure to use is the current listed equity figure. The AER's analysis shows that the current listed equity ownership rate is 0.46.[298]

When combined with a distribution rate of 0.7, this evidence indicates that the absolute upper bound for gamma is 0.32. Gamma can be no higher than 0.32, but may be lower than this.

(ii) Estimate from tax statistics

The AER concludes that the redemption rate from tax statistics is 0.45, based on analysis by Hathaway and a recent update from NERA.

298 Preliminary Decision, pp. 4-100.

This estimate is robust and provides a firm upper bound for theta. As noted by NERA, this figure is drawn from the tax statistics that are considered to be more reliable.[299]

Thus, tax statistics indicate that theta cannot be higher than 0.45, and therefore gamma cannot be higher than 0.32.

(iii) Range of estimates from market value studies

The AER considers that market value studies support a range for the utilisation rate of between zero and one.[300]

Although the AER says that it has had "particular regard" to the SFG (2013) study, it is not clear from the Preliminary Decision what weight (if any) this study is given by the AER.[301] The AER's final estimate of gamma is clearly inconsistent with the findings of this study.

Besides stating that it has had "particular regard" to the SFG study, the Preliminary Decision does not reveal any meaningful consideration of the relative merits of the available market value studies. AusNet Services has proposed to rely on a specific market value study, being the study designed to overcome the limitations of prior studies. However instead of assessing the merits of this particular study, the AER has grouped this study with a range of other studies and sought to assess the merits of this broad group of studies at a very general level only. The AER has not performed any analysis of the relative merits or deficiencies of the SFG study, nor has there been any expert review of this particular study to identify its relative merits or limitations. The only particular consideration given to the SFG study is in the AER's high level assessment of whether its set of general limitations associated with market value studies apply to the that study.[302]

The AER appears to consider that all market value studies should be given equal (or similar) weight, regardless of the:

- Time period for estimation (including whether the study relates to the period before or after changes to the tax law in 2000);
- Robustness of the methodology; and
- Quality of data and filtering techniques.

This is an erroneous and unreasonable approach to consideration of market value studies. As the AER is aware, many of the earlier market value studies have methodological shortcomings and rely on very old data. As explained above, the SFG study relied on by AusNet Services was specifically designed to overcome the shortcomings of previous studies. In particular, the methodology used in the SFG study:

- Was designed, at the request of the Tribunal, to overcome shortcomings in previous studies (particularly the Beggs and Skeels (2006) study);
- Was the product of a consultative process involving the AER;
- Relies on more recent data than previous studies; and
- Has been endorsed by the Tribunal.

In effect, the SFG study was designed to supersede previous studies, both in terms of its methodology and the currency of the underlying data.

As noted above, the SFG study was found by the Tribunal (at the time of its May 2011 decision in *Energex*) to be "*the best dividend drop-off study currently available*".[303] The Tribunal also did not

299 NERA, *Estimating Distribution and Redemption Rates from Taxation Statistics*, March 2015, p. 25.

300 Preliminary Decision, pp. 4-18.

301 Preliminary Decision, pp. 4-32.

302 Preliminary Decision, pp. 4-111 – 4-115.

303 *Application by Energex Limited (Gamma) (No 5)* [2011] ACompT 9, [29].

accept the submission of the AER that either minor issues in the construction of the database or econometric issues justified giving the SFG study less weight and earlier studies (particularly the previous Beggs and Skeels (2006) study) some weight. The Tribunal observed that "*the Beggs and Skeels study, despite not being subjected to anything like the same level scrutiny [sic], is known to suffer by comparison with the SFG study on those and other grounds*".[304]

Unlike the Tribunal in *Energex*, the AER in its Preliminary Decision gives no consideration to the relative strengths and weaknesses of the available market value studies. Rather, the AER has simply grouped all market value studies together and referred to a range of estimates emerging from this broad group.

The approach taken in the Preliminary Decision is even more simplistic than the approach in the Rate of Return Guideline. In the Guideline, the AER at least excluded studies from the pre-2000 period when different tax laws were in operation. However in the Preliminary Decision the AER has brought back the pre-2000 studies, the effect of which is to widen the AER's range of theta estimates from 0 – 0.5 to 0 – 1.0. Again, this simple change has significant implications for the AER's conclusion on gamma – if the range were restricted to 0 – 0.5 based on the post-2000 studies, this would indicate a range for gamma of 0 – 0.35 (based on a distribution rate of 0.7) or 0 – 0.39 (based on a distribution rate of 0.77), in any case below the AER's final point estimate.

AusNet Services maintains its view that the best estimate of theta from market value studies is 0.35. This reflects the output of the best dividend drop-off study currently available.

(iv) Lally / Handley adjustment to estimates from dividend drop-off studies

The AER states that, as a minimum, the output of the SFG study requires an adjustment for the apparent incorrect valuation of cash dividends that would also be expected to be reflected in the estimated value of distributed imputation credits.[305] The adjustment is to address the AER's concern that dividend drop off studies, including SFG's study, that estimate a value for cash dividends at a materially different amount to their face value, are not correctly estimating a post-tax value before personal taxes and personal transaction costs.[306] The proposed adjustment is based on advice from Handley and Lally, and involves dividing the value of imputation credits by the value of dividends from the same study.[307] Applying this adjustment to the SFG study would lead to an adjustment of the output from 0.35 to 0.40.

The proposed adjustment is an extension of the AER's conceptual framework for estimating gamma. The AER expresses concern that market value studies are not producing estimates on a pre-personal-tax and pre-personal-costs basis, and it therefore makes an adjustment to remove the effect of these factors.

For reasons set out in section 7.5.2 above, AusNet Services does not agree with the AER's conceptual framework. Specifically, AusNet Services do not agree that gamma should be estimated on a pre-personal-tax and pre-personal-costs basis. For the same reasons, AusNet Services does not agree that the output of market value studies should be adjusted to remove the effect of personal taxes and personal transaction costs.

AusNet Services notes however that if the AER's view on the conceptual framework were to be accepted, the Handley / Lally adjustment would provide a simple way of adjusting market value studies so that they could be used within this framework. As noted above, if the Handley / Lally adjustment is applied to the SFG study, this leads to a theta estimate of 0.4. This implies that even if the AER's conceptual framework were to be adopted, a reasonable estimate of theta is likely to be around 0.4, implying a gamma of approximately 0.3.

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304 *Application by Energex Limited (Gamma) (No 5)* [2011] ACompT 9, [29].

305 Preliminary Decision, pp. 4-32.

306 Preliminary Decision, pp. 4-31 – 4-32.

307 Preliminary Decision, pp. 4-30.

7.5.5 Pairing of estimates for "all equity" and "listed equity"

In the Preliminary Decision, the AER pairs estimates of theta based on listed equity data with its distribution rate for listed equity, and similarly pairs estimates of theta based on all equity data with its distribution rate for all equity. The AER considers that it would be inappropriate to pair an estimate of theta from only listed equity with an estimate of the distribution rate from all equity (and vice versa).[308]

The AER does not explain why it is necessary or desirable to use the same set of companies to estimate the distribution rate and theta. Rather, the AER appears to consider that consistency of datasets is desirable in and of itself.

AusNet Services does not agree that estimates of theta based on listed equity data can only be "paired with" a listed equity distribution rate. The distribution rate and theta are separate parameters and need not be estimated using the same dataset. Whereas the distribution rate is a measure of the credit distribution practices of the BEE, theta is a measure of the value of credits to investors (or potential investors). In each case it must be considered which dataset or empirical measure will provide the best estimate for the BEE, and there is no reason why this ought to be the same across all parameters.

For reasons discussed above, the appropriate dataset for estimating the distribution rate may well be different to that used for estimating theta. This is because the characteristics of investors (or potential investors) in the BEE are likely to be more aligned with investors in listed entities, but the credit distribution rate of the BEE is unlikely to be aligned with that of a large listed entity. The BEE is likely to be at least as attractive to foreign investors as a listed entity, but unlike many large listed entities, it will not have material foreign earnings (which tend to increase the distribution rate for large listed entities).

It is for this reason that AusNet Services proposes to adopt the best estimate of each parameter based on the most representative dataset in each case, without the constraint that the datasets for each parameter must be the same.

7.5.6 Approach to deriving an estimate of gamma

The AER's approach to assessment of the empirical evidence in the Preliminary Decision is illogical and irrational.

The AER's reasoning involves two steps:

- First, the AER determines a range for gamma, based on the "overlap of the evidence from the equity ownership approach" (i.e. the overlap between the ranges for listed and all equity respectively); and
- Secondly, the AER selects a point in that range based on the evidence from tax statistics and market value studies.

The first step is arbitrary and illogical, since it involves looking for an overlap between the ranges produced by two different measures and then taking that point of overlap as a binding constraint on the gamma estimate. Since the listed and all equity measures of the equity ownership rate are based on different datasets, there is no reason to expect that the ranges produced by these two measures would necessarily overlap. Indeed, as noted above, it is only because the AER takes such a long historical period to estimate its ranges for the equity ownership rate that the two ranges do overlap.

More importantly, there is no reason to expect that the value for gamma would lie at the point of overlap between these two ranges. The point of overlap indicates nothing about the value of gamma. Rather, it is driven by the AER's choice of time period for estimating ranges for the equity

[308] Preliminary Decision, pp. 4-18.

ownership rate. The point of overlap can be made larger or smaller (or made to disappear altogether) simply by varying the time period for analysis of the equity ownership rate.

The second step is similarly arbitrary and illogical, in that it uses different types of evidence to indicate where in a (illogical) pre-determined range the final estimate of gamma should lie. What the AER fails to recognise is that the equity ownership rate, the redemption rate and the market value are each measuring different things. The fact that the gamma estimates based on redemption rates and market value studies are both lower than the range of estimates from the equity ownership approach is to be expected, once it is borne in mind what these measures represent. Properly interpreted, the evidence from tax statistics and market value studies indicates that the value for gamma is (and it must by definition be) *below* the range from the equity ownership approach, not that it is at the lower end of that range.

As a result of this approach, the AER's estimate of gamma can only be reconciled with its range of estimates for the equity ownership rate. The AER's estimate is significantly above the values indicated by tax statistics and market value studies.

7.5.7 The correct interpretation of the empirical evidence

When correctly interpreted, the evidence presented in the Preliminary Decision demonstrates that:

- The distribution rate for the BEE is approximately 0.7;
- The upper bound for theta, as indicated by equity ownership rates and tax statistics, is approximately 0.45. This implies an upper bound for gamma of 0.32;
- The best estimate of the value of distributed imputation credits, on the AER's conceptual framework (i.e. ignoring personal costs), is 0.4. This implies a gamma of 0.28; and
- The best estimate of the value of distributed imputation credits, based on a proper application of the NER, is 0.35. This implies a gamma of 0.25.

The AER's gamma estimate of 0.4 is not consistent with the evidence presented in the Preliminary Decision. This value is well above even the upper bound values indicated by the equity ownership approach and tax statistics.

7.6 Forecast Inflation

7.6.1 Background

An accurate forecast of inflation is necessary to ensure that businesses have a reasonable opportunity to recover their efficient costs over the long term. Under the NER forecast inflation plays a role in determining the amount to be deducted from the annual revenue requirement for "indexation of the regulatory asset base".[309] If the forecast of inflation is too high – that is, if actual inflation turns out to be materially lower than had been forecast – this deduction will be too large. This will lead to under-recovery of costs over the long-term, since the amounts deducted from the annual revenue requirement will be larger than the amount by which the asset base is increased by inflation at the end of the regulatory period (this being based on actual inflation[310]).

The forecast of inflation also bears an interrelationship with the allowed rate of return. The reason why there needs to be a deduction from the annual revenue requirement for indexation of the regulatory asset base is because under the NER, a nominal rate of return is used[311] in combination

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309 Under clause 6.4.3(a) of the NER, the annual revenue requirement for a DNSP for each regulatory year of a regulatory control period must be determined using a building block approach, under which the building blocks include "indexation of the regulatory asset base". Pursuant to clause 6.4.4(b), the "indexation of the regulatory asset base" building block comprises a negative adjustment equal to the amount referred to in clause S6.2.3(c)(4) for that year – i.e. the amount necessary to maintain the real value of the regulatory asset base as at the beginning of the subsequent year by adjusting that value for inflation.

310 NER, cl 6.5.1(e)(3).

311 NER, cl 6.5.2(d)(2).

with a real (inflation-adjusted) RAB.[312] Without the deduction, service providers would be compensated twice for the effects of inflation – once through the rate of return, and again through indexation of the regulatory asset base. It is therefore important that the forecast of inflation used to calculate the revenue deduction be:

- Accurate (i.e. as close as possible to actual inflation, which is used to roll forward the RAB at the end of the regulatory period); and
- Consistent with the implied forecast of inflation in the nominal rate of return.

In the Preliminary Decision, the AER adopted an inflation forecast of 2.5 per cent for the 2016 regulatory period. This is based on the methodology that has been adopted by the AER since 2008, which involves:[313]

- For the first two years of the regulatory period, taking the mid-point of the RBA forecast range for CPI inflation. For these two years, the RBA has published a forecast range of 2 – 3 per cent, with a mid-point of 2.5 per cent; and
- For the following eight years, taking the mid-point of the RBA target range for CPI inflation, being 2.5 per cent (as this range is 2 to 3 per cent).

As RBA forecasts are only used for the first two years of the regulatory period, the inflation forecast derived using this methodology is primarily determined by the mid-point of the RBA's target range. This approach is reasonable where investors expect monetary policy to return inflation to—and maintain it at—the mid-point of the RBA's target range.

In the Initial Regulatory Proposal, AusNet Services had adopted the current AER method for forecasting inflation, as described above. However, AusNet Services also foreshadowed a review of their method for estimating forecasted inflation if current market conditions persist.

7.6.2 Shortcomings of the AER method in current market conditions

Recent market evidence demonstrates that the AER's current forecasting method is currently over-estimating inflation. In particular, the most recent Australian Bureau of Statistics (**ABS**) data shows that actual CPI inflation is well below the RBA's forecasts and target range – year-end CPI inflation for the June and September quarters was 1.5 per cent per annum, while for the March quarter it was 1.3 per cent.

Table 7.9: Comparison of actual inflation with RBA and AER forecasts

Year ended	Actual inflation	RBA forecast (as at May of the prior year)	Forecast based on AER method (as at May of the prior year)
June 2013	2.4%	2 – 3%	2.5%
June 2014	3.0%	2 – 3%	2.5%
June 2015	1.5%	2.5 – 3.5%	2.55%

With RBA cash rates at record low levels and with near term rate cuts priced into financial markets, the RBA cash rate is close to the 'zero lower bound', with the result that the potential for monetary

312 NER, cl 6.5.1(e)(3).

313 JEN Preliminary Decision, pp. 3-256.

policy to stimulate economic activity and return inflation to the RBA's target range for CPI inflation is diminished.

The consequence of this is that:

- The AER's method is likely to result in an inflation forecast that is above market expectations of inflation over the regulatory period;
- The inflation forecast used to make adjustments to cash flows (based on the AER inflation forecast) is likely to be inconsistent with the forecast of inflation implied in the nominal rate of return (which reflects market expectations);
- The downward adjustment to depreciation cash flows is expected be too large—because the inflation forecast derived using the AER's method is expected to be higher than the actual inflation used to roll forward the RAB from 2016 to 2020—thus artificially depressing the overall return to investors; and
- Over the long-term, AusNet Services will not be able to recover its capital costs.

7.6.3 Return to a market-based method

AusNet Services proposes that an alternative forecasting method, based on market data, be adopted. The alternative method is referred to as the 'Fisher equation' method, or the 'breakeven inflation' forecasting method. Under this method, an estimate of expected inflation is derived using a simplified version of the Fisher equation, based on the difference in yields on nominal and inflation indexed CGS of the same maturity.[314]

The Fisher equation method was used by the AER prior to 2008. The AER only changed to its current method in 2008 as a result of market conditions at that time causing a scarcity of CGS. In its decision to move away from the Fisher equation method, the AER agreed with stakeholders that a market-based estimate of forecast inflation would be preferable, but concluded that due to market conditions at that time its market-based measure was likely to be unreliable. The AER therefore departed from the PTRM method for forecasting inflation (the Fisher equation method) and sought an alternative method that it considered would provide the best estimate of expected inflation. The AER concluded:[315]

> *"The AER's approach to forecasting inflation in this final decision has been in response to an acceptance that the previously ubiquitously used Fisher equation may not currently produce realistic inflation forecasts at this time, due to a bias in indexed CGS yields caused by the scarcity of these bonds. The AER considers that a market based estimate derived from a robust methodology would be preferred to any other alternative method, as the former typically results in a greater degree of certainty and objectivity, however, it is not possible to use such a method at this time…*
>
> *The AER has determined that a methodology that is likely to result in the best estimates of expected inflation is to reference the RBA's short term inflation forecasts, that currently extend out two years, and to adopt the mid-point of the RBA's target inflation band beyond that period (i.e. 2.5%)."*

AusNet Services agrees with the AER that a market-based estimate of inflation is preferable to an estimate based on the RBA forecasts and target range. A market-based estimate is more likely to be consistent with expectations of inflation reflected in the nominal rate of return, and more likely to be reflective of actual inflation over the regulatory period.

Further, the limitations that applied to the Fisher equation method in 2008 no longer apply. Dr Hird notes that during the period from 2006 to late 2008 the indexed CGS market was much smaller than today, and this shortage of supply combined with high demand were pushing up indexed CGS prices

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314 CEG, *Measuring expected inflation for the PTRM*, June 2015, p. 10. CEG refers to this as the 'breakeven inflation' forecasting method. CEG notes that the equation it uses is a simplified version of the Fisher equation.

315 AER, *Final decision: SP AusNet transmission determination 2008-09 to 2013-14*, January 2008, pp. 105-106.

and pushing down real yields, with the effect that Fisher equation estimates were overstated.[316] However Dr Hird explains that since that time the supply of indexed CGS has increased considerably, thus alleviating concerns regarding the accuracy of the breakeven forecasting method:[317]

> *"At that time the Australian Office of Financial Management was not issuing new indexed linked securities and there were doubts about its commitment to maintain a supply of these bonds into the future. However, since then the AOFM has recommenced issuance of these bonds and the stock of bonds have increased by more than 400% and the number of different maturity dates have more than doubled from 3 to 7. The AOFM has also announced the imminent issuance of a new 2040 or 2045 CPI indexed bond.*
>
> *On this basis I consider that the shortage of supply of these bonds which led to breakeven inflation overstating expected inflation prior to 2009 is no longer a material concern. In any event, to the extent that it this was a material concern it would imply that breakeven inflation would be overestimating expected inflation which, if true, would suggest the AER's methodology (which forecasts higher inflation than breakeven inflation currently) was overestimating by even more."*

In recent years, the current AER method has delivered similar outcomes to the Fisher equation method, because market expectations have been broadly in line with the RBA's forecasts and target range. Therefore, until now, there has been no pressing need for the AER to change its inflation forecasting method.

However there is now a material divergence between the RBA forecasts / targets and market-based measures of inflation expectations. There has also been a material divergence between the RBA forecasts / targets and out-turn inflation over the past year, as shown in Table 7.9 above.

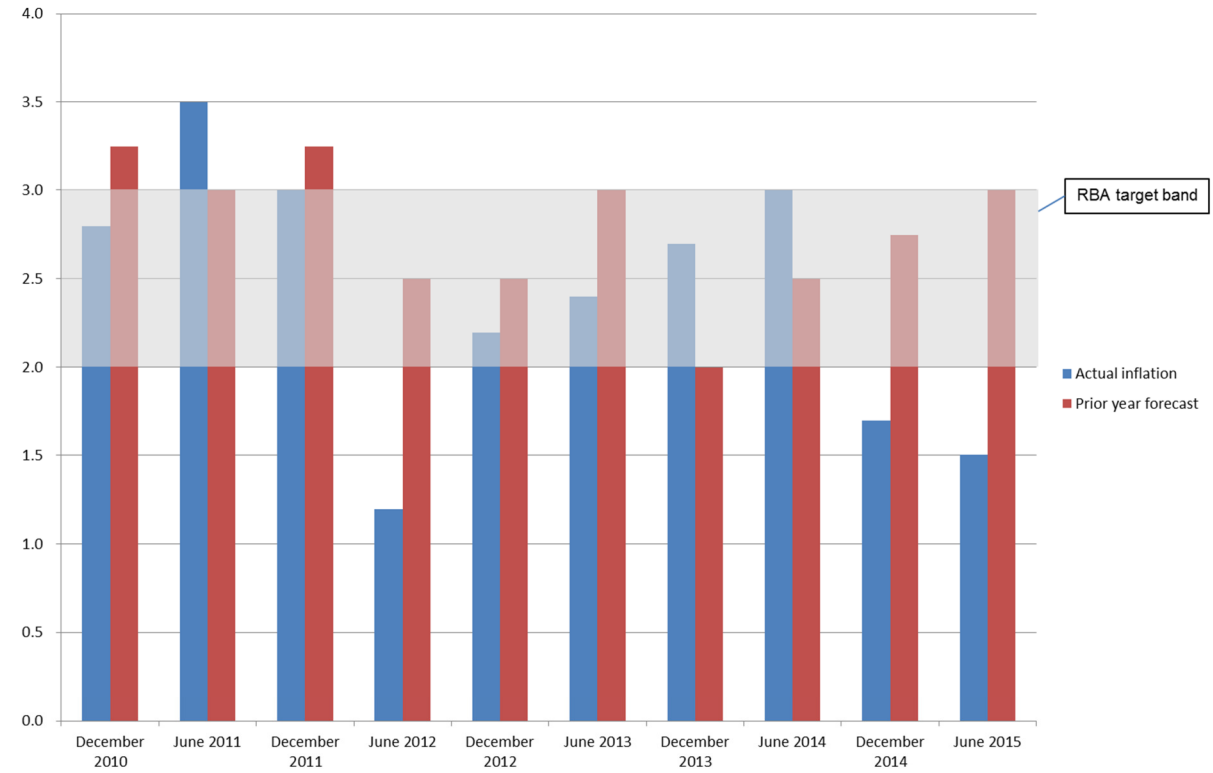
During the development of the 2013 Rate of Return Guideline, forecasts produced using the Fisher equation were close to those produced by the AER's methodology (see Table 7.9). Therefore, at that time, it was unsurprising that stakeholders endorsed the continuation of the current approach when asked their views. The situation has since changed materially and the AER should not rely on outdated stakeholder support for its approach to satisfy itself that its approach is appropriate in the current environment. It is also worth noting that those views where never incorporated into the final guideline.

The evidence demonstrates that over the past year, actual inflation has been significantly lower than RBA forecasts and well below the RBA's target band (Figure 7.6).

316 CEG, *Measuring expected inflation for the PTRM*, June 2015, p. 7.

317 CEG, *Measuring expected inflation for the PTRM*, June 2015, p. 7.

Figure 7.6: Actual inflation vs prior year RBA forecast and RBA target band[318]



Further, Dr Hird explains that over the medium term, it is more likely that actual inflation will be below the mid-point of the RBA's target range. Dr Hird notes that, with the RBA cash rate at record low levels, the power of monetary policy to spur economic growth and increases in the inflation rate is now more limited. Dr Hird concludes:[319]

> *"In this context, it is reasonable to expect that investors perceive an asymmetry in the probability that inflation will be above/below the RBA's target, at least in the medium term. This means that, even if the 'most likely' estimate is for expected inflation to average 2.5% in the medium to long term, this is not the mean (probability weighted) estimate. That is, there is more downside than upside risk to inflation."*

This implies that it is no longer reasonable to expect inflation to revert to the middle of the RBA target range over the medium term. Accordingly, in current market conditions, a methodology that assumes medium term inflation would be at or around the mid-point of the RBA target range (as the current AER method does) is likely to over-estimate forecast inflation.

AusNet Services therefore considers that now is an appropriate time for the AER to revert to the Fisher equation method for forecasting inflation as the better forecast method. Since the Fisher equation method provides a market-based estimate of inflation, use of this method will:

- Promote consistency between the inflation forecast used to make adjustments to cash flows and the forecast of inflation implied in the nominal rate of return;
- Provide for an inflation forecast that is more likely to be reflective of actual inflation over the regulatory control period; and

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318 Actual inflation data reflect the annual change in CPI over year to June / December (as relevant), as reported by the ABS. The prior year forecast for each December and June quarter is the RBA forecast for the relevant quarter, as set out in the RBA's Statement on Monetary Policy for May of the prior financial year (e.g. for the December 2014 and June 2015 quarters, the prior year forecast is as set out in the RBA's Statement on Monetary Policy for May 2014).

319 CEG, *Measuring expected inflation for the PTRM*, June 2015, p. 10.

- Provide businesses with a reasonable opportunity to recover their efficient costs over the long-term, since the inflation forecast used to calculate deductions from the revenue allowance will be more consistent with actual inflation, which is used to roll forward the RAB over time.

AusNet Services proposes to apply an inflation forecast of 2.19 per cent, based on an application of the Fisher equation method over the 20 business days to 30 September 2015.

7.6.4 AER proposal for separate consultation on the inflation forecasting method

In the Preliminary Determination the AER states that, going forward, it would consider a change to inflation forecasting in accordance with the consultation processes mandated by the NER. The AER also suggests that the next Rate of Return Guideline review may be a suitable process for also reviewing the inflation forecasting method.[320]

It is not clear to AusNet Services why a change to the inflation forecasting method could only be considered as part of a separate consultation process (if that is what the AER is suggesting) or why it could not be considered by the AER as part of making its distribution determination for AusNet Services.

AusNet Services considers that the AER must consider the appropriateness of the inflation forecasting method at the time of each distribution determination. This is because:

- The NER require that the annual revenue requirement for each regulatory year include an adjustment equal to the amount by which the RAB is adjusted for inflation in that year,[321] and it is therefore necessary for the AER to determine a forecast of inflation, as an input or value to be used in its decision on the annual revenue requirement;
- The NER also require that, as part of a building block determination, the AER specify appropriate methods for the indexation of the regulatory asset base;[322]
- The AER's distribution determination is predicated on a decision on the annual revenue requirement for each regulatory year, which is to include an adjustment equal to the amount by which the RAB is adjusted for inflation in that year;[323] and
- The AER's distribution determination is also predicated on a decision as to appropriate amounts, values or inputs to be used in determining the annual revenue requirement for each regulatory year, which necessarily include a forecast of inflation for each year.[324]

AusNet Services understands that the AER may be concerned that, since the PTRM is required to include a method for estimating inflation, the only way in which the forecasting method could be changed is through an amendment to the PTRM.

If this were to be the AER's concern, AusNet Services considers that it would be unfounded. The NER do not require that the inflation forecast used to calculate the "indexation of the regulatory asset base" building block be determined in accordance with the inflation forecasting method specified in the PTRM. On the contrary, the NER states that as part of a building block determination, the AER must specify appropriate methods for the indexation of the regulatory asset base.[325] Further, as noted above, the AER's distribution determination is predicated on a decision as to appropriate amounts, values or inputs to be used in determining the annual revenue requirement for each

320 Preliminary Determination, pp. 3-256 – 3-257.

321 NER, cl 6.4.3.

322 NER, cl 6.3.2(a).

323 NER, cl 6.12.1(2).

324 NER, cl 6.12.1(10).

325 NER, cl 6.3.2(a).

regulatory year, which necessarily include a forecast of inflation for each year.[326] The fact that an inflation forecasting methodology is specified in the PTRM does not relieve the AER of its duty under the NER to determine an appropriate forecast of inflation for each regulatory year of the 2016-2020 regulatory control period.

The AER has not previously expressed any reservation about considering a change to the inflation forecasting method as part of a revenue determination process. On the contrary:

- During the 2013 Rate of Return Guideline process, the AER deferred consideration of the inflation forecasting method, on the basis that it would be considered in upcoming determinations. The AER stated in its explanatory statement:[327]

  "As discussed with stakeholders, the final guideline does not cover our position on transactions costs or forecast inflation. These issues will need to be considered in upcoming determinations."

- As noted above, the AER has previously adopted an inflation forecasting methodology that was different to that set out in its PTRM and applied in previous determinations. In its January 2008 determination in respect of SP AusNet the AER did not apply the Fisher equation method, even though the Fisher equation method had been applied up until that time, and was the method included in the PTRM at the time SP AusNet (now AusNet Services) submitted its revenue proposal.[328] The AER stated that in considering SP AusNet's revised proposal, it was guided by the principle that the appropriate approach to forecasting inflation should be a methodology that the AER determines is likely to result in the best estimates of expected inflation.[329]

AusNet Services considers that, in light of the evidence that the AER's current method is not producing accurate forecasts of inflation, the AER must review its inflation forecasting method as part of making its distribution determination for AusNet Services. This would be consistent with the AER's message to stakeholders during the 2013 Rate of Return Guideline process.

7.7 Interrelationships

The NER require that, in determining the allowed rate of return, regard be had to any interrelationships between estimates of financial parameters that are relevant to the estimates of the return on equity and the return on debt.[330]

This section addresses relevant interrelationships involving the financial parameters discussed above.

7.7.1 Need for consistent application of the ARORO

AusNet Services considers that the return on equity and return on debt need to be estimated on the basis of a consistent approach to the ARORO.

As discussed in section 7.2.2 above, AusNet Services sees the ARORO as having two key elements:

- First, the ARORO requires identification of the level of risk that applies to the DNSP in respect of the provision of standard control services; and
- Secondly, the ARORO requires estimation of efficient financing costs for a BEE facing a similar degree of risk.

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326 NER, cl 6.12.1(10).

327 AER, Explanatory Statement: Rate of Return Guideline, December 2013, p. 21.

328 AER, *Final decision: SP AusNet transmission determination 2008-09 to 2013-14*, January 2008, pp 105-106. As noted by the AER, the first PTRM (which applied until September 2007) used the Fisher equation to estimate inflation (in the 'WACC' worksheet, cell F9).

329 AER, *Final decision: SP AusNet transmission determination 2008-09 to 2013-14*, January 2008, p. 102.

330 NER, cl 6.5.2(e).

AusNet Services' proposed approaches to estimating the return on equity, return on debt and the overall rate of return apply this framework consistently. Specifically:

- AusNet Services considers that the relevant degree of risk, for the purposes of estimating both the return on equity and return on debt, is that faced by entities operating in a workably competitive market providing services similar to standard control services within Australia;
- In estimating both the return on equity and return on debt, AusNet Services' objective is to estimate the efficient financing costs of a BEE facing a similar degree of risk. This requires consideration of what financing practices would be engaged in by businesses facing the relevant degree of risk, operating in a workably competitive market. This is because it is ultimately competition that drives efficient behaviour. For example, AusNet Services' proposed approach to estimating the return on debt reflects financing practices that would be engaged in by businesses facing the relevant degree of risk, operating in a workably competitive market. Similarly, AusNet Services' estimates of the return on equity are benchmarked against returns required by the market for investing in businesses with a similar degree of risk, including those operating in competitive markets;
- Where AusNet Services is required to estimate risk parameters, AusNet Services does so on the basis of samples of businesses facing a similar degree of risk to that faced by entities operating in a workably competitive market providing services similar to standard control services. The businesses included in these samples need not be providers of regulated services, but they must provide services that are sufficiently similar. For example in estimating the equity beta, AusNet Services' proposed sample of businesses includes businesses operating in workably competitive markets providing services similar to standard control services. Similarly, in estimating the return on debt, yields are measured using benchmark indices for the relevant credit rating band, with those indices reflecting bond yields across a wide range of businesses within that credit rating band, including businesses operating in competitive markets (i.e. a range of different businesses facing a similar degree of risk as assessed by credit rating agencies); and
- AusNet Services' assumed gearing ratio of 60 per cent is broadly consistent with evidence of gearing ratios for businesses operating in a workably competitive market providing services similar to standard control services. If anything, the evidence suggests that 60 per cent may overstate gearing levels for such businesses, meaning that adopting this gearing assumption is likely to lead to a conservative (low) estimate of the overall rate of return.[331]

Thus, our proposed approaches to estimating the return on equity, return on debt and the overall rate of return, as set out in sections 7.3 to 7.5, are both consistent with the approach to the ARORO described in section 7.2.2 above.

7.7.2 Interrelationship between the return on equity and the value of imputation credits

There is a well-recognised interrelationship between the return on equity and the value of imputation credits. Since the MRP needs to be grossed up for the value of imputation credits, a higher theta estimate implies a higher required return on equity. This interrelationship is explicitly recognised in the NER.[332]

This interrelationship is accounted for in this submission and the supporting expert advice. As explained by Frontier Economics (see Appendix 7C p 34-37) the proposed MRP estimate of 7.9 per

[331] Frontier Economics analyses average gearing ratios across a sample of listed Australian infrastructure firms, including both regulated and unregulated businesses. Frontier Notes that, while the mean gearing ratio across this sample is slightly below 60%, this is almost entirely due to the very low leverage levels of two entities – Aurizon (which began its life as a public company with very little debt and has stated its intention to increase leverage over time) and Qube (which is in the process of seeking to acquire Asciano and has maintained low leverage to preserve borrowing capacity). Refer to: Frontier Economics, *Estimating the equity beta for the benchmark efficient entity*, January 2016, p 21.

[332] NER, cl 6.5.2(d)(2)

cent is based on AER estimates of the MRP from historical excess returns and the DGM that assume a value for theta of 0.6. However Frontier notes that the impact on these estimates of adopting a lower theta value (e.g. a value of 0.35) is relatively small, particularly when compared to the effect of variation in the other factors that affect the estimate of the MRP. Frontier considers that the AER's estimates of the MRP from historical excess returns and the DGM are conservative in that the AER's historical returns estimate does not reflect the NERA correction for historical dividends and the AER's DGM estimates are based on ad hoc reductions to long-term GDP growth rates. Frontier notes that correcting for these effects would more than offset any adjustment needed to account a reduction in the estimate of theta from 0.6 to 0.35.

If the AER were to reduce its estimate of theta to 0.35, while maintaining its current approach to estimating the MRP, no adjustment to the AER's MRP estimate would be necessary. This is because the top of the AER's range of estimates of the historical average MRP (used by the AER as its MRP point estimate) would remain at 6.5%.[333]

7.7.3 Interrelationships with the inflation forecast

As noted above, there is an interrelationship between the method for forecasting inflation and the amount that is deducted from the annual revenue requirement for indexation of the regulatory asset base, and between the allowed rate of return and the method for forecasting inflation.

The first of these interrelationships is a direct interrelationship. If the forecast of inflation is too high – that is, if actual inflation turns out to be materially lower than had been forecast – the deduction from the annual revenue requirement will be too large. This will lead to under-recovery of costs over the long-term, since the amounts deducted from the annual revenue requirement will be larger than the amount by which the asset base is increased by inflation at the end of the regulatory period (this being based on actual inflation[334]).

The second of these interrelationships is more indirect. As noted above, the deduction from the annual revenue requirement for indexation is needed to avoid "double counting" of inflation. In effect, inflation is counted twice i.e. because, under the NER, a nominal rate of return[335] is applied in combination with a real (inflation-adjusted) RAB[336] and deducted once. It is therefore important that each time it is counted or deducted, a consistent approach to forecasting inflation is used.

The forecast of inflation used to calculate the revenue deduction therefore needs to be:

- Accurate (i.e. as close as possible to actual inflation, which is used to roll forward the RAB at the end of the regulatory period); and
- Consistent with the implied forecast of inflation in the nominal rate of return.

It is for this reason that AusNet Services proposes to adopt a market-based estimate of forecast inflation. Using a market-based method ensures consistency with how the allowed rate of return is estimated, and in current market conditions, will provide for a more accurate forecast.

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333 For reasons set out in section 7.4.4, AusNet Services does not agree with the AER's approach to estimating the MRP. However we note that if the AER were to maintain the same approach to estimating the MRP while lowering its estimate of theta, its estimate of the MRP would not need to change. NERA provides estimates of the historical average MRP based on theta assumptions of 0.35 and 0.6. Over the longest available time period, NERA estimates a historical average MRP of 6.65 per cent using a theta assumption of 0.6, and 6.56 per cent using a theta assumption of 0.35 (NERA, *Historical Estimates of the Market Risk Premium*, February 2015, pp 42-43). Thus, NERA's analysis shows that if the AER were to reduce its theta estimate from 0.6 to 0.35, the top of the range for the historical average MRP (with the AER uses as its MRP point estimate) would remain at approximately 6.5 per cent.

334 NER, cl 6.5.1(e)(3).

335 NER, cl 6.5.2(d)(2).

336 NER, cl 6.5.1(e)(3).

7.7.4 Claimed interrelationship between the approach to the return on debt and equity beta

In the Preliminary Decision, the AER suggests that there may be an interrelationship between the choice of method for estimating the return on debt (in particular, whether a trailing average method is adopted) and the equity beta. It is suggested that, to the extent there is a degree of "mismatch risk" due to the choice of method for estimating the return on debt (i.e. a risk that the allowed return on debt does not reflect the debt financing costs of a BEE), this ought to be accounted for in estimating the equity beta.[337]

AusNet Services does not accept that there is this interrelationship between the transition method for estimating the return on debt and the equity beta. The risk of a mismatch between the regulatory allowance for the return on debt and efficient financing costs is not a non-diversifiable systematic risk.

Chairmont, in its report to the AER, makes this point clear:[338]

> *"Interest rate risk per se is a systematic risk for all or most companies in the market. However, the form of interest rate risk applicable to NSPs in the 'on-the-day' regime was something quite specific to firms under that regulatory umbrella. Most industries would have had greater total interest rate risk than regulated NSPs, as most enterprises do not have the benefit of a direct link between the interest rate impact of their revenues and their costs which NSPs do. This places NSPs in a better position than an unregulated AusNet Services, as the allowance is in effect a revenue item that they can manage to, even with the uncertainties of the DRP mismatch component.*
>
> *Ex-post results for the DRP mismatch would have impacted the profit results of the NSPs, which may then have caused some benefit or drag to the share price of the specific NSP. However, it may be argued that this is not a systematic risk. The variability of cashflow is specific to the industry and the individual NSP and may be diversifiable by investors. If this is so, then the required return on equity would not be affected by the DRP mismatch risk as it was a diversifiable specific risk rather than a component of market systematic risk. Therefore, the return on equity should be the same regardless of the existence of DRP mismatch risk and beta should not change because of it."*

It follows that any change in the AER's approach to estimation of the return on debt (including any change to the transition method) will not affect the return on equity.

7.8 Conclusion

For reasons set out above, AusNet Services does not agree with the AER's approach to estimating the allowed rate of return, the value of imputation credits and forecast inflation.

AusNet Services' position on the correct approach to estimating each parameter is set out below.

7.8.1 Return on debt

For reasons set out in section 7.3.3 it is AusNet Services' primary position that the trailing average approach to estimating the return on debt should be implemented immediately, with no transition. This is necessary to ensure that the return on debt allowance reflects the efficient financing costs of a BEE – i.e. the cost of financing a staggered portfolio of fixed-rate debt.

Alternatively, even if the AER's view is correct that it is necessary to have regard to the financing practices of a regulated BEE in response to previous regulatory methodologies and settings, the appropriate approach would be to adopt either:

- A hybrid form of transition with the assumed level of hedging based on evidence as to the optimal hedging ratio; or

337 Preliminary Decision, pp. 3-176.

338 Chairmont, *Financing Practices Under Regulation: Past and Transitional*, 13 October 2015, p. 40.

- A hybrid form of transition with an assumption of 100% hedging of the base rate, if evidence supported this assumption.

Of these two alternative positions, the first is clearly preferable. If the AER is correct that efficient financing practice involves some degree of hedging of the base rate, it is then necessary to consider to what degree hedging would be efficient, and a transition can only apply to the base rate component to the extent that the BEE used hedging to match the previous on-the-day approach to setting the allowed return on debt. The evidence demonstrates that the efficient level of hedging under the previous on-the-day approach was around one third.

Estimates for the first year of the regulatory period based on each of the alternative approaches are set out below. These estimates are based on a 10 year benchmark term of debt and credit rating of BBB to BBB+, and the RBA curve extrapolated in accordance with the AER's methodology.

Table 7.10: Return on debt for the first year of the regulatory period

Transition method	Return on debt for first year
No transition (immediate application of trailing average method)	7.83%
Hybrid transition, assuming an optimal hedging ratio	6.94%
Hybrid transition, assuming 100% hedging	5.16%

The data supporting these estimates is found in the supporting Memorandum from CEG[339].

AusNet Services proposes that the return on debt be updated in subsequent years of the regulatory period in accordance with the method and formulae set out in section 7.3.7.

AusNet Services' proposal represents a departure from the methods for estimating the return on debt set out in the Rate of Return Guideline. AusNet Services' reasons for departure are set out in section 7.3 above.

7.8.2 Return on equity

AusNet Services' preferred approach to estimating the return on equity is as set out in the Initial Regulatory Proposal. This approach has regard to all relevant models and evidence, and uses this material for its proper purpose. Each of the relevant return on equity models is independently used to derive an estimate of the required return on equity, while other relevant evidence is used to determine the best estimate of each parameter within these models. The outputs from each relevant model are then combined to arrive at a return on equity estimate. Based on updated data to reflect prevailing market conditions, this approach leads to an estimate of prevailing return on equity of 9.8 per cent.

However if the AER proposes to continue relying solely on the SL CAPM to estimate the return on equity, the AER must change the way it implements this model. The way in which the SL CAPM is applied in the Preliminary Decision leads to a return on equity that is not consistent with the AROR and does not reflect prevailing market conditions. The AER does not properly recognise the weaknesses of the SL CAPM, nor does it account for these weaknesses in its application of the model. Further, the AER's practice of applying an effectively fixed risk premium to a variable risk-free rate is not appropriate in current market conditions, since it leads to the return on equity moving inappropriately in lock-step with changes in the risk-free rate.

339 CEG, *Memorandum – September 2015 cost of debt and inflation forecasts*, 24 December 2015.

The accompanying expert report of Frontier Economics outlines an alternative approach that involves properly adjusting SL CAPM parameters to deliver a return on equity that contributes to the achievement of the ARORO and reflects prevailing market conditions. This involves:

- Making a transparent and empirically based adjustment to the equity beta estimate to account for the known shortcomings of the SL CAPM, particularly low beta bias; and
- Deriving the MRP in a way that gives appropriate weight to measures of the prevailing (current MRP).

This leads to an estimate of prevailing return on equity of 9.9 per cent in the placeholder averaging period (20 business days to 30 September). This is calculated using the SL CAPM with an equity beta of 0.91, MRP of 7.9 per cent and a risk-free rate of 2.75 per cent.

For reasons set out in section 7.4, AusNet Services considers that either the multi-model approach or the 'adjusted SL CAPM' approach (as described above and in section 7.4.6) would be clearly preferable to the approach taken in the Preliminary Decision. For the purposes of this submission, AusNet Services adopts the adjusted SL CAPM approach.

Either of the alternative approaches put forward by AusNet Services would represent a departure from the methods for estimating the return on equity set out in the Rate of Return Guideline. AusNet Services' reasons for departure are set out in section 7.4 above.

7.8.3 Overall rate of return

AusNet Services maintains its proposed gearing ratio of 60 per cent. Applying this gearing ratio and the estimates of the return on debt and return on equity set out above leads to a nominal vanilla WACC of 8.66 per cent in the placeholder averaging period (20 business days to 30 September).

7.8.4 Gamma

As explained in section 7.5 above, when correctly interpreted, the evidence in relation to gamma demonstrates that:

- The distribution rate for the BEE is approximately 0.7;
- The upper bound for theta, as indicated by equity ownership rates and tax statistics, is approximately 0.45. This implies an upper bound for gamma of 0.32;
- The best estimate of the value of distributed imputation credits, on the AER's conceptual framework (i.e. ignoring personal costs), is 0.4. This implies a gamma of 0.28; and
- The best estimate of the value of distributed imputation credits, based on a proper application of the NER, is 0.35. This implies a gamma of 0.25.

For these reasons, AusNet Services maintains its proposal for a gamma of 0.25, based on a distribution rate of 0.7 and a theta estimate of 0.35.

AusNet Services' proposal represents a departure from the methods for estimating gamma set out in the Rate of Return Guideline. AusNet Services' reasons for departure are set out in section 7.5 above.

7.8.5 Forecast inflation

For reasons set out in section 7.6 above, AusNet Services proposes that an alternative forecasting method, based on market data, be adopted. The alternative method is referred to as the 'Fisher equation' method, or the 'breakeven inflation' forecasting method. Under this method, an estimate of expected inflation is derived using a simplified version of the Fisher equation, based on the difference in yields on nominal and inflation indexed CGS of the same maturity.

Based on this alternative method, the current best estimate of forecast inflation is 2.19 per cent.

7.9 Supporting Documentation

The following documentation is provided in support of this chapter:

- Appendix 7A – CEG, Critique of the AER's approach to transition.
- Appendix 7B – CEG, Criteria for assessing fair value curves.
- Appendix 7C – Frontier, The required return on equity under a foundation model approach.
- Appendix 7D – Frontier, The Relationship between Government Bond Yields and the Market Risk Premium.
- Appendix 7E – Houston Kemp, The Cost of Equity: Response to the AER's Draft Decisions for the Victorian Electricity Distributors.
- Appendix 7F – Frontier, Estimating the equity beta for the benchmark efficient entity.
- Appendix 7G – Frontier, The appropriate use of tax statistics when estimating gamma.
- Supporting memorandum - CEG – Memorandum – September 2015 cost of debt and inflation forecasts.

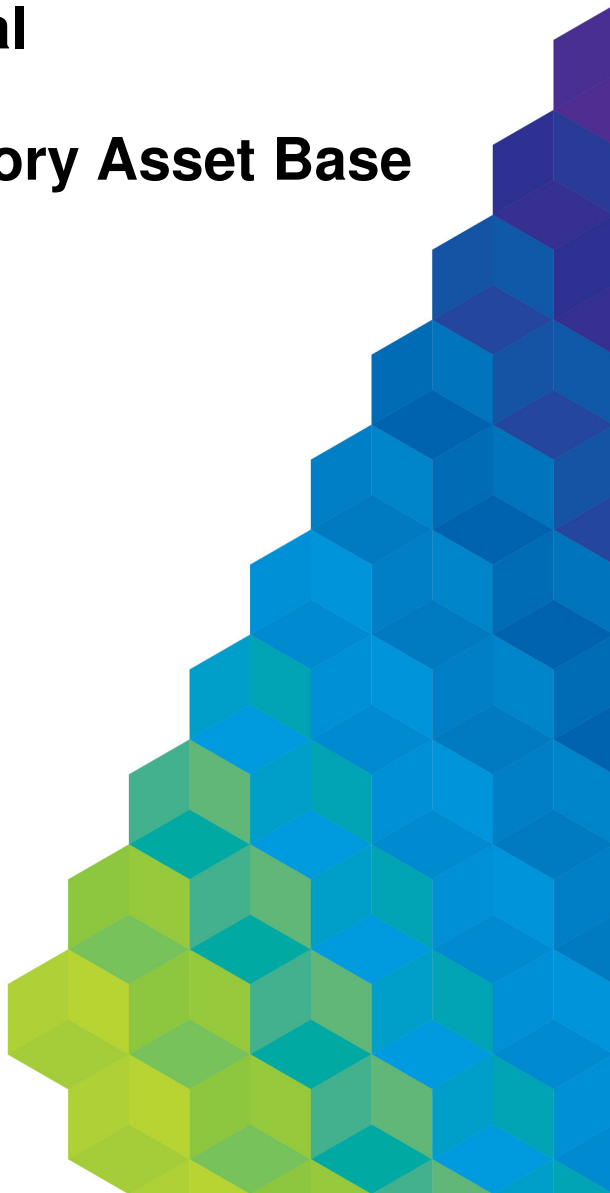
AusNet Electricity Services Pty Ltd

Electricity Distribution Price Review 2016-20

Revised Regulatory Proposal

Chapter 8: Opening Regulatory Asset Base

Submitted: 6 January 2016



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Chapter 8: Opening Regulatory Asset Base

This chapter sets out AusNet Services' response to the Australian Energy Regulator's (AER's) Preliminary Decision with respect to the Opening Regulatory Asset Base (RAB) as set out in Attachment 2 – Regulatory Asset Base.

In the event of inconsistency between information contained in this chapter and AusNet Services' Initial Proposal, the information contained in this chapter prevails.

8.1 Introduction

The AER has determined the opening RAB value for AusNet Services of $3,423.3 million (nominal) as at 1 January 2016, representing a reduction of $123.8 million, or 3.5% from the opening RAB value of $3,547.2 million (nominal) in AusNet Services' Initial Regulatory Proposal. The Preliminary Decision reflects the removal of $75.3 million (nominal) of AMI communications / IT assets from the RAB as it has been reallocated by the AER to the alternative control services (ACS) metering RAB.[1] AusNet Services originally allocated these assets to standard control services (SCS) and, accordingly, included them in the SCS opening RAB. AusNet Services has adopted the AER's allocation in its Revised Proposal, which accounts for 61% of the difference between the Preliminary Decision on opening RAB for SCS compared with AusNet Services' Initial Proposal.

In summary, AusNet Services:

- Accepts the Preliminary Decision adjustments to the opening RAB (worth -$95.0 million), including adjustments in relation to:
  - reallocation of AMI communications / IT assets (-$75.3 million) from the SCS RAB to the ACS metering RAB;
  - the half-year WACC removed from 2010 actual net capex (-$13.9 million); and
  - other minor amendments (-$0.2 million);
- Does not accept the Preliminary Decision's -$37.9 million adjustment to the opening RAB resulting from the AER's preferred approach to applying inflation.
- Does not accept the AER's use of gross proceeds from sale of assets in place of their residual values for the purposes of adjusting the RAB for asset disposals in the roll forward model (RFM).
- Proposes some minor amendments in the RFM in relation to prior period adjustments. These amendments result in an adjustment of (+$5.6 million) in the 2016 opening RAB.

The information set out in this chapter accords with all the applicable requirements of the National Electricity Rules (NER).

8.2 Overview

8.2.1 Preliminary Decision

The Preliminary Decision approved an opening RAB of $3,423.3 million (nominal) for 1 January 2016. The approved opening RAB is $123.8 million (3.5%) lower than the opening RAB proposed in AusNet Services' Initial Proposal.

[1] AER, *AusNet Services Preliminary Decision 2016-20, Attachment 16 – Alternative Control Services,* October 2015, p. 28.

The Preliminary Decision reflects the AER's changes to:

1. *service classification* (the Preliminary Decision reclassified $75.3 million of 'AMI IT and communication' assets to ACS); and
2. *modelling inputs*, including:
    - application of actual and forecast inflation rates (the Preliminary Decision applies lags to the inflation series in the RFM that differ from AusNet Services' Initial Proposal);
    - application of a half-year rate of return on 2010 actual net capex (the Preliminary Decision removes $13.9 million for a half-year WACC allowance included in the Initial Proposal); and
    - appropriate valuation for asset disposals (the Preliminary Decision uses a different source modelling the value of asset disposals).

Metering RAB Allocation

The decision removes $75.3 million (nominal) of metering IT (Ex MMS) and Communications assets from the SCS RAB as at 1 January 2016. The AER considers these assets should be in the ACS metering RAB, ahead of the introduction of metering contestability in Victoria and the development of a nationally consistent approach to cost allocation through the AER's Ring Fencing Guidelines.[2]

Modelling inputs

The Preliminary Decision applied the following amendments to modelling inputs:

- **Actual inflation values and 2015 forecast inflation**. This change, described in section 8.3 below, has the effect of reducing the 2016 opening RAB by $37.9 million (nominal) compared to AusNet Services' proposed opening RAB of $3,547.2 million.
- **Return on 2010 capex.** The AER has removed the half-year WACC allowance from AusNet Services' 2010 actual net capex values for the purposes of calculating prior period adjustments in the RFM. The AER has highlighted that inclusion of a half-year WACC allowance for 2010 capex is inconsistent with the approach applied to 2010 capex in the revenue modelling undertaken by the Victorian Essential Services Commission (ESC) for the 2006–10 regulatory control period. The effect of this amendment to AusNet Services' 2016 opening RAB is a $13.9 million (nominal) reduction.
- **Value of asset disposals.** The decision restates the value of actual asset disposals in AusNet Services' Preliminary Decision RFM for regulatory years 2010-14 based on gross proceeds from asset sales rather than their actual written down values. The effect of this amendment is a $4.4 million (nominal) reduction to actual asset disposals compared to AusNet Services' proposal of $11.6 million (nominal) for the same period. The flow on effect of this amendment means a higher opening RAB at 1 January 2016 (by $3.4 million) under the AER's approach.
- **Miscellaneous.** Other minor amendments made by the AER in the Preliminary Decision RFM include opening RAB and TAB adjustments, and an inflation amendment to the 2011 equity raising costs asset addition. The value of these minor amendments to the 2016 opening RAB is a $0.2 million reduction.

[2] AER, *AusNet Services Preliminary Decision 2016-20, Attachment 16 – Alternative Control Services,* October 2015, p. 40.

8.2.2 Response to Preliminary Decision

AusNet Services accepts the majority of the adjustments made in the Preliminary Decision, including the service classification and the removal of the half-year WACC for 2010 net capex (together, these adjustments reduce AusNet Services' opening RAB by $95 million).

AusNet Services rejects the use of proceeds from sale to value asset disposals, and updates the modelling in this Revised Proposal to reflect new information on the value of these asset disposals. Further detail is included in Section 8.4 below.

AusNet Services rejects the Preliminary Decision methodology for the application of CPI in the RFM. In cutting over to a non-lagged inflation series for the indexation of the opening RAB, the Preliminary Decision approach fails to maintain the real value of the RAB as is required under the Rules. AusNet Services has corrected this issue in its Revised Proposal. Further detail is included in Section 8.3 below.

Metering RAB Allocation

AusNet Services has reallocated $75.3 million of metering assets to the metering RAB, consistent with the Preliminary Decision. AusNet Services does not propose any further amendments to the SCS opening RAB in this Revised Proposal in respect of sunk metering related assets. Chapter 11 – Metering Services of this Revised Proposal sets out AusNet Services' response to the Preliminary Decision with respect to the allocation of costs between network and metering services.

Modelling inputs

AusNet Services disputes the application of inflation, and valuation of asset disposals as set out in the Preliminary Decision.

In relation to other modelling inputs, AusNet Services accepts:

- The removal of the half-year WACC for 2010 net capex.
- The following amendments to the RFM:
    - Applying a half year inflation (rather than full year inflation) to 2011 equity raising costs in PTRM inputs (Capex as incurred), since the source value of $1.46m is in 2010 end of year terms. AusNet Services observes that the same amendment has been made in Powercor's Preliminary Decision.[3]
    - Establishing 2015 closing tax asset values to separate out land assets which are non-depreciable, ensuring that these assets are mapped correctly into the AER's standard tax asset categories. This amendment is discussed further in Chapter 10 (Corporate Income Tax) of this revised proposal.
    - Adjustments to PTRM inputs in relation to prudent additional capex allowed in the previous regulatory period (e.g. 2005 capex). The adjustment involves a $3.2 million transfer between the 'SCADA/Network Control' and 'IT' RAB asset classes which has the effect of setting the 2011 opening RAB value for SCADA/Network Control assets to zero.

In addition, AusNet Services proposes some minor amendments to the RFM consistent with recent amendments implemented in the transmission RFM by the AER.[4] The amendments affect the calculation of the difference between forecast and actual 2010 net capex, as contained in the prior period adjustments section of the RFM. AusNet Services observes that the same amendments have

[3] AER, *Powercor distribution Preliminary Decision 2016-20,* Attachment 2 - Regulatory Asset Base, October 2015, pp. 14-15.

[4] AER, *AusNet Services Preliminary Decision 2016-20,* Appendix A – Transmission roll forward model, October 2015.

been implemented and approved in the Preliminary Decision models for CitiPower and Powercor.[5] The impact of this correction on AusNet Services' 2016 opening RAB is a $5.6 million (nominal) increase compared to the Preliminary Decision opening RAB of $3,423.3 million. These aspects are discussed in further detail in this chapter in section 8.3.

8.2.3 Revised Proposal

AusNet Services' revised proposal for the calculation of the 2016 opening RAB is detailed in the table below.

Table 8.1: Revised proposal – Opening RAB

(Nominal, $M)	2011	2012	2013	2014	2015
Opening RAB	2,093.4	2,278.3	2,563.0	2,858.9	3,180.4
Net Capex	273.8	319.5	379.1	400.5	366.1
Economic Depreciation	(89.0)	(34.7)	(83.1)	(79.1)	(73.0)
Interim closing RAB	2,278.3	2,563.0	2,858.9	3,180.4	3,473.5
2010 true-ups					(28.9)
EDPR RAB at 1 Jan 2016					**3,444.6**
Metering assets roll-in					0.0
Closing RAB					**3,444.6**

Source: AusNet Services' revised proposal RFM

8.3 Actual Inflation Inputs

This section outlines the Preliminary Decision relating to inflation inputs in the calculation of the roll-forward of the RAB as contained in Attachment 2 – Regulatory asset base and Preliminary Decision RFM. This section also outlines AusNet Services' response to the Preliminary Decision and its Revised Proposal.

The key issue in dispute with regard to the application of inflation is whether to lag the inflation series used to index the various components (i.e. the opening RAB, net capex, and depreciation) of the roll forward calculation.

8.3.1 Preliminary Decision

The Preliminary Decision considered AusNet Services had used the wrong CPI inputs in the RFM, stating that AusNet Services should have used actual inflation as the input, rather than a one year lag that was used in the Initial Proposal.

The AER stated that:[6]

> *"Our approach to RAB indexation in the template RFM is to apply a one year lagged inflation rate to net capex and straight-line depreciation consistent with the method of indexation used in the control mechanism. The actual inflation rate for each year is used to index the opening RAB in the RFM."*

5 AER, *CitiPower Preliminary Decision 2016-20, Roll Forward Model,* October 2015.

6 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 2 – Regulatory Asset Base,* October 2015, p. 14.

As described in the above quote, the methodology of the AER's RFM results in two different inflation series being applied within the roll-forward calculation. The opening RAB is indexed using 'unlagged' inflation, while net capex and depreciation are indexed using the inflation series lagged by one year.

The Preliminary Decision therefore found that AusNet Services had erred by using lagged inflation inputs (e.g. the actual index for September 2014 was input for September 2015). The AER stated that this had the result that the opening RAB was indexed using an inflation series with a one year lag, while net capex and depreciation were indexed using an inflation series with a two year lag.[7]

Other Victorian distributors (including CitiPower, Powercor and United Energy) used the same approach as AusNet Services in populating their proposal RFMs in respect of actual inflation values. Jemena Electricity Networks (JEN) applied a slightly different approach which involved making amendments to the standard formulae in the model so that the CPI index used to escalate net capex and depreciation has the same lag (one year) as is applied to the RAB.[8] This approach ensured that the CPI was only lagged by a single year as opposed to a two year lag in the case of the other distributors' proposal models.[9]

The changes to the inflation inputs in the Preliminary Decision have the effect of reducing the 2016 opening RAB by $37.9 million (nominal) compared to AusNet Services' proposed opening RAB of $3,547.2 million.

The AER's amended opening inflation values compared to AusNet Services' Initial Proposal for the period 2011-15 are provided in the table below:

Table 8.2: Opening RAB inflation – 2011 – 2015

(Nominal $M)	2011	2012	2013	2014	2015	Total
Initial Proposal	58.4	80.4	51.4	61.8	73.4	**325.3**
AER Preliminary Decision [a]	**73.7**	**46.0**	**54.9**	**65.6**	**73.1**	**313.3**

[a] *AER preliminary decision is based on non-lagged CPI.*

8.3.2 Response to Preliminary Decision

AusNet Services disputes the application of two inflation series, one lagged and one non-lagged, within the RFM. Specifically, a one-year lagged inflation series should be used for all indexation, including to index the opening RAB, because it is:

- Internally consistent within the RFM (i.e. the same CPI is applied to all model components);
- Consistent with the method of indexation used in the control mechanism[10];
- Consistent with the inflation series applied in previous ESC models that were used by the AER in the 2011-15 Distribution Determination to establish the 2011 Opening RAB.[11] This means that the opening RAB is indexed using an unbroken inflation series and ensures the real value of the RAB is maintained[12]; and

7 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 2 – Regulatory Asset Base,* October 2015, p. 15.

8 Jemena Electricity Network, *Electricity Distribution Price Review - Regulatory Proposal, Attachment 6 – Roll-Forward Model*, April 2015.

9 AER, *Jemena Electricity Network Preliminary Decision 2016-20, Roll Forward Model,* October 2015.

10 Rule 6.5.1(e)(3).

11 AER, *SP AusNet RFM Final Decision*, October 2010 (Amended 18 July 2013).

12 Rule S6.2.3(c)(4)

- Removes the need for a forecast of final year inflation[13].

The above arguments, either individually or collectively, require the roll-forward to be calculated in a manner that reflects the actual change in prices that occurs over time and ensures there are no windfall gains or losses that can occur from periodic shifts being made to the chosen inflation series.

AusNet Services has therefore amended the RFM to apply the same inflation index to all components of the calculation.

Internal consistency within the RFM

There is no clear basis for the Preliminary Decision's use of two inflation series within the RFM (applying unlagged inflation to the opening RAB, and lagged inflation to capex and depreciation) as the change in real prices that has occurred is universally consistent across the RFM inputs (RAB, depreciation and capex). In addition to creating the potential for confusion, inconsistent application of inflation across elements of the model may lead to errors in the annual roll forward calculation. This is because the calculation may reflect differences in the price indexation approach (between that used for the opening RAB and that used for annual depreciation and capex), rather than the change in RAB value that is consistent with the method described in Rule S6.2.1(e).

Consistency with the method of indexation used in the control mechanism

Rule 6.5.1(e)(3) states that the AER's RFM must set out the method for determining the roll forward of the RAB such that:[14]

> *"the roll forward of the regulatory asset base from the immediately preceding regulatory control period to the beginning of the first regulatory year of a subsequent regulatory control period entails the value of the first mentioned regulatory asset base being adjusted for actual inflation,* ***consistently with the method used for the indexation of the control mechanism*** *(or control mechanisms) for standard control services during the preceding regulatory control period." [****emphasis added****]*

The Preliminary Decision's method of indexation which applies non-lagged inflation to the opening RAB is not consistent with the method of indexation used in the control mechanism during the preceding regulatory control period. The method of indexation used in the control mechanism during the preceding regulatory control period was the one-year lagged inflation series (measured September to September), as AusNet Services has applied in its Revised Proposal.

Consistency with ESC methodology

In populating the AER's RFM with lagged inflation inputs for indexation of the opening RAB, AusNet Services has adopted an approach consistent with that used in the ESC approved final decision RFM (2006-10)[15]. That is, the ESC model required actual CPI values (lagged by one year) be used for the purposes of the nominal RAB roll forward process.

When the same inflation series is applied unbroken, it ensures that the value of the RAB is fairly and fully maintained as it is rolled forward to reflect the actual change in prices that occur. If a change is made, such as shifting from a lagged series to a non-lagged one as the Preliminary Decision has done, the value of the RAB is not maintained because one year of actual inflation (in this case, the 2.79% actual inflation rate for 2010) is never included in the indexation process. While an alternative inflation figure is applied, the actual change in prices that occurred in 2010 is never reflected in the RAB indexation.

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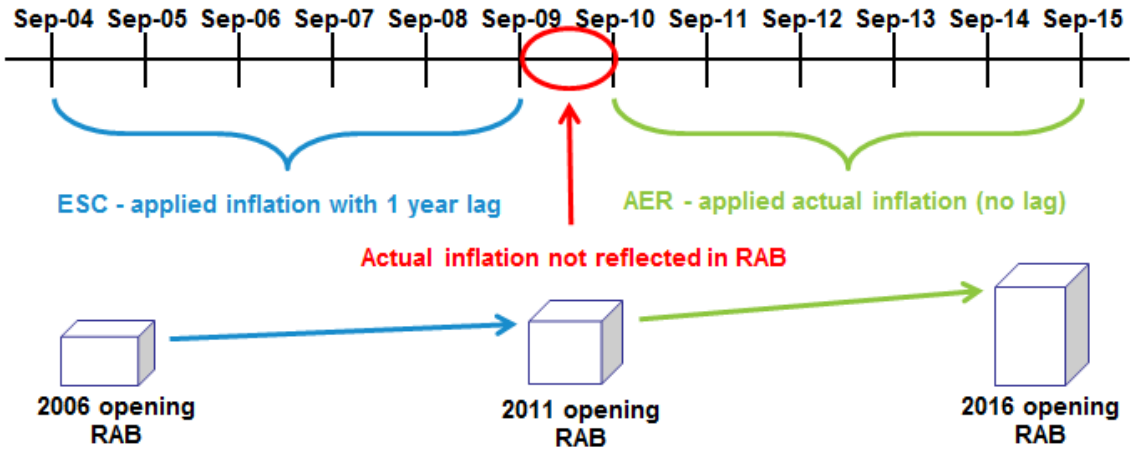
13 Although 2015 actual inflation will be available for the 2016-20 Substitute Decision due to the transitional arrangements that are in place, the timing that would usually apply under Rule 6.11.2 requires the distribution determination to be published at least 2 months before the end of the final year of the regulatory period, making the use of actual inflation for that year impractical.

14 NER, cl. 6.5.1(e)(3).

15 ESC 2006-10 *Electricity Distribution Final Determination*, inclusive of amendments to the 2011 opening RAB made by the AER resulting from Australian Federal Court Orders issued 20 December 2012.

Figure 8.2: ESC and AER method for indexation of opening RAB



AusNet Services' approach applies a consistent time series of CPI values which takes into account those inflation values used in the previous control period (2006-10). By applying a consistent series (with no 12 month break or double up) the indexation of the RAB is maintained as required by Rule S6.2.3(c).

The Preliminary Decision has not addressed the error in its indexation of the RAB which arises because of the transition from one inflation series (lagged) in a previous regulatory control period to another inflation series (non-lagged) in the next control period.

The AER's recent review of the Transmission RFM stated that:[16]

> *"Indexing the opening RAB by actual CPI will ensure that the real value of the RAB is preserved, which aligns with the underlying premise for the PTRM."*

However, the AER's comment only holds if actual CPI is applied continuously. Because the ESC previously applied lagged inflation, changing to use actual (non-lagged) inflation means there is a year of real world price changes that occurred which will never be reflected in the value of the RAB.

The AER's error prevents AusNet Services from maintaining the real value of its RAB, as it is required to do under the NER.[17]

Addressing AER rationale

The Preliminary Decision does not set out a rationale for applying actual (non-lagged) inflation to the opening RAB when all other elements of the regulatory determination are indexed using an inflation measure lagged by one year, other than to say that it is the approach of the AER's current RFM template.[18]

In relation to JEN's Initial Proposal, which employed the same methodology AusNet Services is applying in its Revised Proposal, the AER said only that it did not consider it 'appropriate' for JEN to change the method set out in RFM template. The AER did not provide any reason this was inappropriate or any rationale for why the methodology was inconsistent with the Rules.[19]

However, in its recent review of the Transmission RFM, the AER did provide a rationale for its use of non-lagged inflation. It suggested that using actual inflation to index the opening RAB helps to

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16 AER, *Final Decision (Amendment) Electricity transmission network service providers – Roll forward model* (version 3), 23 October 2015, p. 12.

17 Rule S6.2.3(c)(4).

18 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 2 – Regulatory Asset Base,* October 2015, pp.14-15.

19 AER, *Jemena Electricity Networks Preliminary Decision 2016-20, Attachment 2 – Regulatory Asset Base,* October 2015, p. 14.

minimise distortions that arise in the revenue setting process due to differences between forecast inflation and actual inflation outcomes.[20]

While it is true that the process of annually updating the PTRM for (lagged) actual inflation does not fully correct for the differences between forecast and actual inflation[21], and it is logical for the AER to seek to minimise these distortions, its approach for doing so must be consistent with the NER. The Rules with respect to rolling forward the RAB are prescriptive. Specifically, the indexation method must be consistent with the approach used to index the control mechanism(s)[22] and it must maintain the real value of the RAB from one regulatory year to the next.[23]

Given that there is no evidence that the AER's methodology outperforms the alternative over a longer period of time, that it introduces the prospect of windfall gains and losses, and, that it is inconsistent with the NER, the methodology adopted in AusNet Services' Revised Proposal is clearly preferable.

Prior Period Adjustments

AusNet Services proposes some minor amendments in respect of the calculations contained in the RFM which deal with true-ups for the 2010 regulatory year, being the final year of the 2006-10 regulatory control period. The proposed amendments affect the calculation of the difference between forecast and actual 2010 net capex within the prior period adjustments section of the model. AusNet Services proposes that the formula be amended to be consistent with the Preliminary Decision RFMs for other Victorian distributors[24] and in accordance with amendments contained in the AER's Transmission RFM (version 3)[25] published in October 2015. As the AER has not officially updated the distribution RFM template reflecting this amendment[26], AusNet Services has included the amendment in its revised proposal to ensure consistency across the Victorian distributors.

This change increases the 2016 opening RAB by $5.6 million (nominal), all else being equal, compared to the Preliminary Decision opening RAB value of $3,423.3 million. Further details about this change are contained in AusNet Services' Revised Proposal RFM.[27]

8.3.3 Revised Proposal

Table 8.3: Opening RAB inflation

(Nominal $M)	2011	2012	2013	2014	2015	Total
AER Preliminary Decision [a]	73.7	46.0	54.9	65.6	73.1	**313.3**
AusNet Services Revised Proposal [b]	**58.4**	**80.2**	**51.4**	**61.8**	**73.4**	**325.1**

[a] *AER Preliminary Decision based on non-lagged CPI.*

[b] *AusNet Services' Revised Proposal based on lagged CPI and reflects other aspects included in AusNet Services' Revised Proposal.*

20 AER, *Final decision (Amendment) Electricity transmission network service providers – Roll forward model* (version 3), 23 October 2015, pp. 11-12.

21 If MAR were able to be set with perfect foresight of inflation, it would differ to that which results from the process under the NER which uses a forecast of inflation to set MAR and then updates the MAR for actual inflation on a lagged basis.

22 NER, clause 6.5.1(e)(3).

23 NER, clause S6.2.3(c)(4).

24 AER, *AusNet Services Preliminary Decision 2016-20, Roll Forward Models,* October 2015.

25 Adjustment for previous period' sheet, AER, Appendix A - transmission roll forward model - version 3.xlsm, released October 2015.

26 As at the time of writing our response to the AER's Preliminary Decision.

27 'Adjustment for previous period' sheet, 'AST Distribution RFM Revised Proposal.xlsx'.

Table 8.4: Opening RAB values

(Nominal $M)	2011	2012	2013	2014	2015	2016
AER Preliminary Decision	2,093.4	2,294.4	2,541.5	2,841.7	3,167.3	**3,423.3**
AusNet Services Revised Proposal [a]	**2,093.4**	**2,278.3**	**2,563.0**	**2,858.9**	**3,180.4**	**3,444.6**

[a] *AusNet Services' Revised Proposal based on amended opening 2011 RAB and reflects other aspects included in AusNet Services' Revised Proposal.*

8.4 Asset Disposals

This section summarises the Preliminary Decision regarding asset disposals as contained in Attachment 2 – Regulatory asset base and the AER's Preliminary decision RFM. This section also outlines AusNet Services' response to the Preliminary Decision and its Revised Proposal.

8.4.1 Preliminary Decision

The Preliminary Decision restates the value of actual asset disposals in AusNet Services' Preliminary Decision RFM for regulatory years 2010-14 based on gross proceeds from asset sales rather than their actual written down values. The effect of this amendment is a $4.4 million (nominal) reduction to actual asset disposals from AusNet Services' Initial Proposal of $11.6 million (nominal) for the same period.

In arriving at its decision, the AER stated:[28]

> *"AusNet Services did not apply the approach of recording the gross proceeds from asset sales for the value of asset disposals in its proposed RFM. Instead, AusNet Services proposed to use written down values to represent the amount for asset disposals. We consider the approach of using gross proceeds is appropriate. The approach of using written down value can result in over compensation for the service provider's investment if the proceeds from asset sales exceed their written down value. This is not consistent with the requirements of the NER. For this reason, our preliminary decision is to use the gross proceeds from asset sales for the value of asset disposals in the RFM."*

In response to an information request from the AER, AusNet Services provided the actual gross proceeds from assets sold for the 2010-14 period.[29] AusNet Services also provided the value of total proceeds received in each year but not at the asset class level. The AER has allocated the total value of proceeds down to asset classes on a pro-rata basis relative to the written down values submitted in AusNet Services' Initial Proposal RFM.

8.4.2 Response to Preliminary Decision

AusNet Services does not accept the Preliminary Decision on asset disposals which relies on gross proceeds from sale of assets. AusNet Services considers that the same basis should apply for asset disposals as used in previous Victorian distribution and transmission price reviews.[30] That is, the actual written down values of assets disposed ought to be deducted from the RAB since that represents the estimated remaining value in the RAB.

Under the NER, a distributor is required to reduce the previous value of the RAB by "the disposal value of any asset where that asset has been disposed of during the previous regulatory control

28 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 2 – Regulatory Asset Base,* October 2015, p. 16.

29 AusNet Services, Email response to AER information request Vic. EDPR - AusNet - IR#009, 16 July 2014.

30 Previous Victorian Electricity and Gas Distribution Price Reviews approved by the ESC (former Victorian Economic Regulator).

period".[31] The "disposal value of an asset" is properly interpreted as being the residual or depreciated value of an asset at the time of its disposal. It ensures that the remaining value of assets under SCS that were disposed of during the previous regulatory period are deducted from the previous value of the RAB. This is consistent with AusNet Services' approach for inputting asset disposal values in the RAB RFM in previous distribution price reviews.[32]

Under the AER's approach, the use of gross proceeds from sale of assets in place of their residual values would (in most cases) deduct more than the remaining value of disposed assets in the RAB. The AER justifies this by stating that:[33]

> *"The approach of using written down value can result in over compensation for the service provider's investment if the proceeds from asset sales exceed their written down value. This is not consistent with the requirements of the NER."*

In fact it is the AER's approach which results in the requirements of the NER not being met. This is evident from the context of NER clause 6.5.5(b)(2), which states that:[34]

> *"The sum of the real value of the depreciation that is attributable to any asset or category of assets over the economic life of that asset or category of assets (such real value being calculated as at the time the value of that asset or category of assets was first included in the regulatory asset base for the relevant distribution system) must be equivalent to the value at which that asset or category of assets was first included in the regulatory asset base for the relevant distribution system."*

To use gross proceeds from sale of assets under the AER's approach ultimately means that either too little or too much depreciation is removed from the RAB, with the result that the sum of the real value of depreciation fails to be equivalent to the value at which the original assets were purchased and first included in the RAB. The depreciation schedules in this scenario will therefore be non-compliant with the current rules which govern the calculation of depreciation, i.e., as stipulated under NER clauses 6.5.5(a) and (b).

Finally, the AER's approach removes the incentive for DNSPs to dispose of assets because none of the benefit is retained. Under the approach adopted by AusNet Services, customers and DNSPs share the benefits from asset disposals. Customers benefit from having the written down value removed from the RAB, while DNSPs retain any difference between the written down value and the proceeds from sale.

Amended Disposals 2012-13

Subsequent to lodging the Initial Proposal, AusNet Services found errors in the reported actual 2012 and 2013 disposals that were used to populate the RFM. These errors relate to disposals recorded for 'sub-transmission', 'distribution system assets' and 'Non-network general assets – IT' asset classes in the initial proposal RFM that account for $0.2 million (nominal), $6.2 million (nominal) and $0.05 million (nominal) respectively across 2012 and 2013. These values do not represent the residual values of assets sold but rather residual values of assets retired and/or removed from service.

AusNet Services has therefore amended its actual disposals for 2012 and 2013 in its revised proposal RFM. These amendments result in revised total disposals for 2010-15 of $6.4 million (nominal) compared to $12.8 million (nominal) in the initial proposal.

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31 NER, cl S.6.2.1(e)(6).

32 ESC 2006-10 *Electricity Distribution Final Determination, SP AusNet RFM Final Decision (2006-10) amended 20130718.xls*, Actual Data Inputs.

33 s.2.4.1 - Opening RAB as at 1 January 2016, AER preliminary decision - Attachment 2 - Regulatory asset base (Oct 2015), p. 15.

34 NER clause S.6.5.5(b)(2).

8.4.3 Revised Proposal

AusNet Services' revised actual and forecast disposals for 2010-15 are provided in the table below.

Table 8.5: Asset Disposals

(Nominal $M)	2010	2011	2012	2013	2014	2015*	Total
AER Preliminary Decision	2.3	0.3	3.8	0.4	0.4	1.2	**8.4**
AusNet Services Revised Proposal	**0.8**	**0.1**	**3.0**	**0.8**	**0.5**	**1.2**	**6.4**

** 2015 asset disposals are estimates only.*

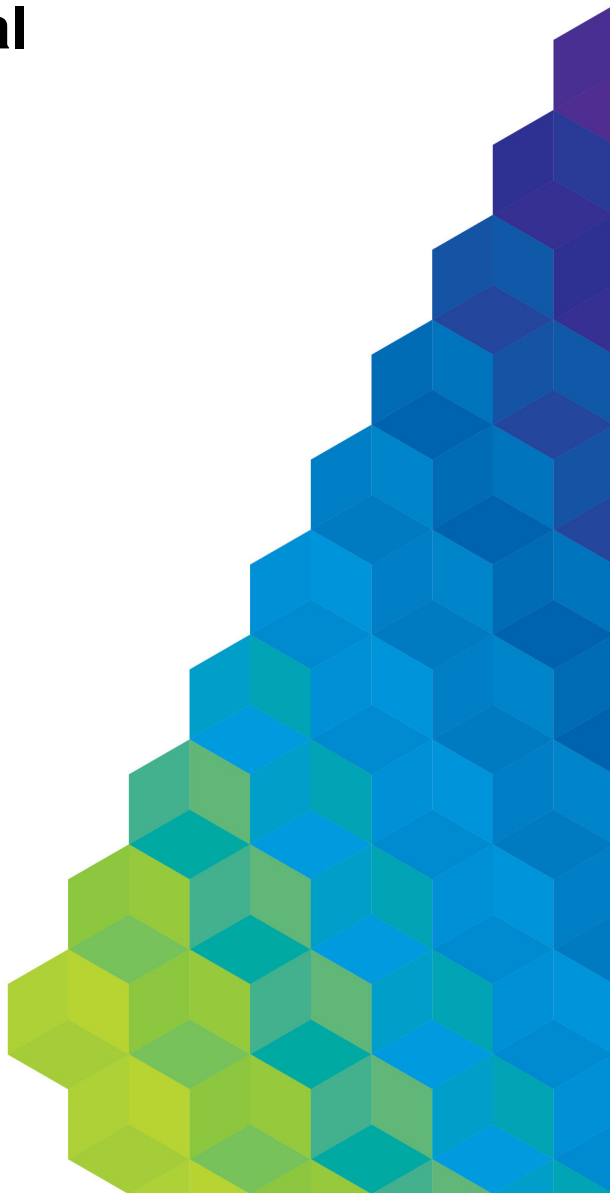
AusNet Electricity Services Pty Ltd

Electricity Distribution Price Review 2016-20

Revised Regulatory Proposal

Chapter 9: Depreciation

Submitted: 6 January 2016



Chapter 9: Depreciation

This chapter sets out AusNet Services' response to the Australian Energy Regulator's (AER's) Preliminary Decision with respect to Regulatory Depreciation as set out in Attachment 5 – Regulatory depreciation. AusNet Services' initial positions were set out in Chapter 15 – Depreciation of the Regulatory Proposal.

In the event of inconsistency between information contained in this chapter and AusNet Services' Initial Proposal, the information contained in this chapter prevails.

9.1 Introduction

The AER approved $368.7 million (nominal) for the depreciation allowance, representing a reduction of $109.6 million, or 22.9% from the depreciation forecast of $478.3 million (nominal) contained in AusNet Services' Initial Regulatory Proposal.

The major differences between the Preliminary Decision and AusNet Services' proposal were due to a lower alternative estimate of the value of assets subject to accelerated depreciation and other aspects of the Preliminary Decision, including a lower opening RAB and reduced capital expenditure forecast.

In summary, AusNet Services' Revised Proposal:

- Accepts the AER's alternative estimate of the value of assets for which accelerated depreciation is being applied. The AER approved $80.4 million of the $109.6 million proposed by AusNet Services, a 26.6% reduction; and
- Proposes a change to the methodology for calculating depreciation, to adopt the year-by-year methodology approved in the Preliminary Decisions for Jemena Electricity Networks (JEN), Powercor and CitiPower.

As a consequence of these positions, and other aspects of the Revised Proposal, AusNet Services' Revised Proposal for the depreciation allowance is $519.2 million (nominal). This Revised Proposal is $40.9 million (nominal) higher than AusNet Services' Initial Proposal and $150.5 million (nominal) higher than the Preliminary Decision.

The remainder of this chapter is structured as follows:

- Section 9.2 sets out AusNet Services' high level considerations in determining the appropriate depreciation allowance for the current regulatory period.[1]
- Section 9.3 outlines the response to the Preliminary Decision with respect to accelerated depreciation.
- Section 9.4 details the change in methodology AusNet Services is proposing for the calculation of the principal depreciation allowance.

The information set out in this chapter accords with all the applicable requirements of the National Electricity Rules (NER).

[1] Current regulatory period' refers to the 2016-20 regulatory period, which commenced on 1 Jan 2016, and to which this Revised Proposal relates.

9.2 Considerations Shaping Revised Proposal for Depreciation Allowance

The NER sets out that depreciation schedules used to determine the annual depreciation allowance should 'reflect the nature of the assets or category of assets over the life of the assets or category of assets'.[2]

The depreciation allowance included in this Revised Proposal reflects consideration of the appropriate timing of the return of value invested in the distribution network over the life of the assets.

As set out in the Initial Proposal, the rate of depreciation is an important determinant of intergenerational equity, for example, if an asset will provide an effective service for 50 years it is important that future generations contribute to the cost of the initial investment. Conversely, future customers should not pay for assets that have been previously retired and no longer provide a service.

9.3 Accelerated Depreciation

9.3.1 Preliminary Decision

The AER has accepted AusNet Services' proposal to accelerate the depreciation of a number of asset types which have been, or are being, removed from the network to lower bushfire risk.

The AER has substituted AusNet Services' forecast of the value of the identified assets with its alternative estimate. The Preliminary Decision included $80.4 million of the $109.6 million proposed by AusNet Services, a 26.6% reduction.

In submissions to the AER, stakeholders expressed concern regarding the risk that customers may be paying accelerated depreciation on assets that remain in service. AusNet Services can confirm that this is not the case. The accelerated depreciation proposal arises from a recommendation made by the VBRC, that certain high bushfire risk assets be replaced to manage the risk of future bushfires. The assets for which AusNet Services has included accelerated depreciation include both assets that were replaced in the 2011-15 regulatory period, and assets that will be replaced during the 2016-20 regulatory period. As such, the assets being replaced, and subsequently appreciated at an accelerated rate, will not be delivering standard control services to customers into the future.

9.3.2 Response to Preliminary Decision

AusNet Services accepts that there are alternative methods to estimating the residual RAB values. The methodology employed by the AER in the Preliminary Decision cannot be said to be more accurate than or materially preferable to the approach used in AusNet Services' Initial Proposal. The AER's reduction in the value of identified assets of $29.2 million is significant, particularly given that the AER and the Victorian Government have recognised that the residual value cannot be verified and that an estimate is required.[3]

Of particular concern is that the AER's approach, which relies on AusNet Services' 2012 Repex model to determine values at 1 January 2011, clearly understates the RAB value for some asset types as it does not recognise that some assets would have been replaced between 2010 and 2012.

Despite this, AusNet Services is satisfied that in combination with the changes to the way remaining asset lives are calculated set out in the next section (9.4), the AER's methodology will provide an appropriate depreciation allowance for the 2016-20 regulatory period.

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2 Rule 6.5.5(b)(1).

3 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 5 – Regulatory Depreciation*, October 2015, p. 13.
Department of Economic Development, Jobs, Transport & Resources, *Submission to Victorian electricity distribution pricing review (2016-20)*, July 2015, p. 9.

9.3.3 Revised Proposal

AusNet Services accepts the AER's alternative estimate of the depreciation allowance for the assets subject to accelerated depreciation. The depreciation values included in AusNet Services' Revised Proposal are shown in the table below.

Table 9.1: Revised Proposal accelerated depreciation allowance

$M Nominal	2016	2017	2018	2019	2020	Total
Accelerated depreciation	52.9	7.5	7.6	7.8	8.0	**83.8**

Source: AusNet Services

9.4 Depreciation Methodology

9.4.1 Preliminary Decision

The AER approved AusNet Services' proposed depreciation methodology, although the approved depreciation allowance is lower due to other aspects of the Preliminary Decision (including forecast capex, opening RAB and forecast inflation rate). Aspects of the Initial Proposal that were accepted in the Preliminary Decision include:

- Asset classes, the straight line depreciation method, and standard lives; and
- The weighted average remaining life (WARL) method for calculating remaining lives for the asset classes.

In its Preliminary Decisions for Powercor, CitiPower and JEN distribution networks the AER accepted another methodology, the year-by-year tracking method, for calculating depreciation.[4] The year-by-year tracking method, which was set out in submissions from the three networks to the AER's Issues Paper for the 2016-20 Victorian Distribution Review, is a more disaggregated approach to the calculation of depreciation, with capex for each year of a regulatory period depreciated separately (with tracking commencing from 2011).[5]

The AER approved the year-by-year tracking methodology as consistent with the Rules, finding that the method:

- Produces depreciation schedules that reflect the nature of the assets and their economic life; and
- Ensures that total depreciation (in real terms) equals the initial value of the assets.

In comparison to the WARL method, the Preliminary Decision noted that the year-by-year tracking methodology is superior with respect to the NER criteria regarding the requirement for depreciation schedules to reflect the nature of the assets and their economic lives.[6]

Despite this, the AER maintained a preference for WARL, stating that the WARL method:

- Meets the requirements of the NER, in that it produces depreciation schedules that align with the economic life of the assets;
- Avoids the additional complexity inherent in year-by-year tracking, which brings with it additional administration costs and increased risk of error; and

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4 AER, *Powercor Preliminary Decision 2016-20, Attachment 5 – Regulatory depreciation,* October 2015, p. 11.
AER, *CitiPower Preliminary Decision 2016-20, Attachment 5 – Regulatory depreciation,* October 2015, p. 6.
AER, *Jemena Electricity Networks Preliminary Decision 2016-20, Attachment 5 – Regulatory depreciation,* October 2015, p. 10.

5 Incenta Economic Consulting, *Calculation of depreciation – Review of the AER's approximate calculation: CitiPower, Powercor and Jemena Electricity Networks*, July 2015.

6 AER, *Powercor Preliminary Decision 2016-20, Attachment 5 – Regulatory depreciation,* October 2015, pp. 5-9.

- Reduces the variability in depreciation schedules that may arise under year-by-year tracking.

9.4.2 Response to Preliminary Decision

AusNet Services has reviewed the year-by-year tracking approach that has been applied in the Preliminary Decisions for Powercor, CitiPower and JEN, and has found that it would more accurately reflect the nature of AusNet Services' assets, and would result in a more appropriate depreciation allowance than that calculated using the WARL method as accepted in the Preliminary Decision for AusNet Services.

The benefits of matching the depreciation allowance more closely to the lives of the assets installed on the network promotes the achievement of the NEO and consistency with the revenue and pricing principles by more accurately calculating AusNet Services' depreciation. Applying year-by-year tracking also promotes consistency amongst the Victorian DNSPs. AusNet Services considers these benefits outweigh the concerns of complexity and volatility identified in the AER's Preliminary Decision for Powercor.

Complexity

While the year-by-year tracking approach does involve a degree of additional complexity than the WARL approach, it also provides a greater degree of transparency that is likely to aid future regulatory decision making. By separately tracking asset values for capex installed each year, future RAB adjustments such as to accelerate depreciation for defunct assets, or to remove capex excluded through the ex post review provisions of the NER, should be more straightforward to implement.

The degree of additional complexity may also be overstated. The year-by-year tracking approach requires maintaining a separate depreciation model and a greater number of asset classes, and a growing number of asset classes over time. However, this is computationally simple, as the same formulation is applied across asset classes. Indeed, an approach similar to the year-by-year tracking method has been successfully in use for AusNet Services' transmission network since 2002.[7]

Volatility

The year-by-year tracking approach will not result in depreciation allowances that are significantly more volatile than the existing WARL approach.

Firstly, the methodology should result in incremental rather than dramatic changes to annual depreciation. Asset categories are dominated by long life assets (lives of 50 years of more). This means that the annual depreciation allowance is made up of depreciation from assets installed over a period of half a century or more. Hence it is unlikely that annual capex volatility would lead to material volatility in depreciation (because the depreciation attributable to one year is a small component of the annual allowance).

Secondly, given that the regulatory framework allows for the AER to apply revenue smoothing within regulatory periods, annual volatility in a particular building block is of negligible practical importance.

9.4.3 Revised Proposal

AusNet Services proposes to adopt the year-by-year tracking approach to calculating depreciation. Specifically, the Revised Proposal:

- Proposes to shift from the WARL depreciation method and implement year-by-year tracking of capex in a separate model that will produce the straight-line depreciation forecasts for 2011 onwards;

[7] Disaggregated approach was first applied by the ACCC in the 2002-07 Victorian Transmission Revenue Reset.

- As part of this proposal, the opening RAB as at 1 January 2011 will be depreciated according to the remaining lives approved at the last reset; and
- The year-by-year tracking of capex will commence from regulatory year 2011, that is, the start of the previous regulatory period.

Under the revised depreciation method information on *remaining asset lives* will no longer be relevant for the purposes of input into the PTRM model.

The depreciation allowance for the non-accelerated components under the year-by-year tracking approach is $438.8 million (nominal).

Table 9.2: Revised Proposal depreciation allowance

$M Nominal	2016	2017	2018	2019	2020	Total
Straight-line depreciation	184.5	175.5	190.1	197.5	211.0	958.6
***Less:* inflation indexation on opening RAB**	75.4	81.2	88.3	94.2	100.3	439.4
Regulatory depreciation	**109.1**	**94.3**	**101.8**	**103.3**	**110.7**	**519.2**

Source: AusNet Services

9.5 Revised Proposal

AusNet Services' revised total depreciation allowance is $519.2 million (nominal) as shown in the table below.

Table 9.3: Revised Proposal depreciation allowance

$M Nominal	2016	2017	2018	2019	2020	Total
Accelerated depreciation	51.1	6.8	7.2	7.5	7.8	80.4
RAB roll forward Depreciation	57.9	87.5	94.7	95.8	102.9	438.8
Total Depreciation	**109.1**	**94.3**	**101.8**	**103.3**	**110.7**	**519.2**

Source: AusNet Services

AusNet Electricity Services Pty Ltd

Electricity Distribution Price Review 2016-20

Revised Regulatory Proposal

Chapter 10: Corporate Income Tax

Submitted: 6 January 2016

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Chapter 10: Corporate Income Tax

This chapter sets out AusNet Services' response to the Australian Energy Regulator's (AER's) Preliminary Decision with respect to Corporate Income Tax as set out in Attachment 8 – Corporate Income Tax. AusNet Services' initial positions were set out in Chapter 16 Corporate Income Tax of the Regulatory Proposal.

In the event of inconsistency between information contained in this chapter and AusNet Services' Initial Proposal, the information contained in this chapter prevails.

10.1 Introduction

The AER approved $138.7 million of $262.0 million (nominal) in net corporate income tax allowance, a reduction of $123.3 million, or 47% from the income tax allowance forecast set out in AusNet Services' Initial Proposal. The Preliminary Decision reflects a reallocation of $47.3 million (nominal) in opening Tax Asset Base (TAB) relating to AMI communications/IT assets from standard control services (as proposed by AusNet Services) into the alternative control services metering TAB. This component accounts for a 2.1% reduction on the opening TAB and 8.0% of the difference between the Preliminary Decision on corporate income tax for standard control services compared with AusNet Services' Initial Proposal.

In summary, AusNet Services:

- Accepts the Preliminary Decision to adjust the opening TAB value for land as at 1 January 2016 by allocating the opening value of land assets into its own non-depreciating asset class as contained in the Preliminary Decision RFM;
- Accepts the Preliminary Decision's amendments to the tax remaining asset lives consistent with the adjustments to the RAB remaining asset lives as at 1 January 2016[1];
- Accepts the AER's amended tax treatment on Efficiency Benefits Sharing Scheme (EBSS) and S-factor revenue adjustments in the PTRM which provides an estimated additional $0.4 million in revenue compared to AusNet Services' proposed approach;
- Adopts the Preliminary Decision to reclassify $47.3 million (nominal) in opening TAB relating to AMI Communications / IT assets from standard control services (as proposed by AusNet Services) back into alternative control services; and
- Does not accept the Preliminary Decision on the value of imputation credits (gamma) of 0.4.

Having regard to the above changes, AusNet Services proposes corporate income tax for the current regulatory control period[2] of $254.7 million (nominal).

The remainder of this chapter is structured as follows:

- Section 1.2 discusses the Preliminary Decision and sets out AusNet Services' Revised Proposal for the corporate income tax allowance; and
- Section 1.3 outlines AusNet Services' Revised Proposal for the AMI communication / IT tax assets under standard control services.

The information set out in this chapter accords with all the applicable requirements of the National Electricity Rules (NER).

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1 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 5 – Regulatory Depreciation*, October 2015, p. 6.

2 Current regulatory control period' refers to the 2016-2020 regulatory period, which commenced on 1 Jan 2016, and to which this Revised Proposal relates.

10.2 Revised Proposal

10.2.1 Preliminary Decision

The following tables compare the Preliminary Decision on corporate income tax with AusNet Services' Initial Proposal for the current period.

Table 10.1: Preliminary Decision on corporate income tax

(Nominal $M)	2016	2017	2018	2019	2020	Total
Tax Payable	57.6	41.7	46.8	43.5	41.6	231.2
Less: value of imputation credits	23.1	16.7	18.7	17.4	16.7	92.5
Net corporate income tax allowance	**34.6**	**25.0**	**28.1**	**26.1**	**25.0**	**138.7**

Source: AER, *AusNet Services Preliminary Decision 2016-20*

Table 10.2: AusNet Services' initial proposed corporate income tax

(Nominal $M)	2016	2017	2018	2019	2020	Total
Tax Payable	82.1	62.6	72.2	71.2	61.2	349.3
Less: value of imputation credits	20.5	15.7	18.0	17.8	15.3	87.3
Net corporate income tax allowance	**61.6**	**47.0**	**54.1**	**53.4**	**45.9**	**262.0**

Source: AusNet Services

As shown in the above tables the AER approved $138.7 million of $262.0 million in net corporate income tax allowance proposed by AusNet Services for the current period. This represents a reduction of $123.3 million or 47% from the initial proposed income tax allowance as set out in Table 10.2 above.

The reduction reflects the AER's amendments to some of AusNet Services' proposed inputs for forecasting the cost of corporate income tax which are discussed in further detail below. It also reflects changes to the proposed tax treatment of revenue adjustments associated with the EBSS and S-factor schemes and the value of imputation credits (gamma), also discussed below. Changes to other building blocks also affect the tax calculation. The AER's changes affecting revenues are discussed in the Preliminary Decision in Attachment 1.

In arriving at its Preliminary Decision on corporate income tax the AER has:

- Adjusted the opening TAB value for land as at 1 January 2016 by allocating the opening value of land assets into its own non-depreciating asset class as contained in the Preliminary Decision RFM. AusNet Services had proposed to depreciate the 2016 opening tax value of land assets under 'Subtransmission' and 'Distribution system assets' asset classes over their respective remaining lives. The AER noted that this is inconsistent with the treatment of the 'Land' asset class under the Essential Services Commission's (ESCV) approach to tax depreciation and with the definition of a 'depreciating asset' within the

income tax assessment act (1997)[3]. The AER has therefore created a new non-depreciating 'Land' asset class to allocate the TAB value of land as at 1 January 2016. The effect of this disaggregation results in a slight reduction to the remaining tax asset lives of the 'Subtransmission' and 'Distribution system assets' asset classes at 1 January 2016;

- Amended the tax treatment on the EBSS and S factor revenue adjustments proposed in the PTRM. The AER considers that the EBSS and S factor revenue adjustments should be given identical income and expense tax status in the PTRM for the reasons set out in both Attachment 8 of its Preliminary Decision[4] and detailed further in the AER's Final Decision for AusGrid;
- Reclassified $47.3 million (nominal) in opening TAB relating to AMI communications / IT assets from standard control services (as proposed by AusNet Services) back into alternative control services. This decision is consistent with the Preliminary Decision on the opening RAB which rejected AusNet Services' proposal to allocate some AMI communications / IT assets into standard control services;
- Determined the value of imputation credits (gamma) to be 0.4 which has the effect of reducing the net tax allowance available to AusNet Services. This compares with a gamma value of 0.25 proposed by AusNet Services;
- Approved AusNet Services' proposal to use the straight-line depreciation approach to calculate the corporate income tax allowance for the 2016–20 regulatory control period, which is consistent with the approach set out in the PTRM;
- Approved the standard tax lives proposed by AusNet Services to be applied over the current period, as contained in Table 10.3 below; and
- Approved AusNet Services' approach to calculating the remaining tax asset lives for each asset class based on a ratio of the RAB remaining asset life to the RAB standard asset life. In accepting this approach the AER has updated the proposed remaining tax asset lives (as shown in Table 10.3 below) consistent with the adjustments to the RAB remaining asset lives as at 1 January 2016, as discussed in Attachment 5 – Regulatory Depreciation.

3 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 8 – Corporate Income Tax*, October 2015, p. 12.

4 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 8 – Corporate Income Tax*, October 2015, pp. 15-16.

Table 10.3: Preliminary Decision on AusNet Services' standard and remaining tax asset lives (years)

Asset class	Standard tax asset life	Remaining tax asset life as at 1 January 2016
Subtransmission	43.0	34.0
Distribution system assets	46.0	31.7
Standard metering	n/a	n/a
Public lighting	n/a	n/a
SCADA/Network control	10.0	6.9
Non-network general assets - IT	4.0	2.6
Non-network general assets - Other	12.0	8.1
Land	n/a	n/a
Accelerated depreciation opening RAB adjustment - Subtransmission	n/a	n/a
Accelerated Depreciation Opening RAB Adjustment - Distribution	n/a	n/a
Accelerated depreciation - Subtransmission (2016–20)	n/a	n/a
Accelerated depreciation - Distribution (2016–20)	n/a	n/a
Equity raising costs	5.0	n/a

Source: AER analysis.
n/a: not applicable.

10.2.2 Response to Preliminary Decision

- AusNet Services accepts the Preliminary Decision to adjust the opening TAB value for land as at 1 January 2016 by allocating the opening value of land assets into its own non-depreciating asset class as contained in the Preliminary Decision RFM.
- AusNet Services accepts the AER's amendments to the tax remaining asset lives consistent with the adjustments to the RAB remaining asset lives as at 1 January 2016, as discussed in Attachment 5 – Regulatory Depreciation.
- AusNet Services accepts the AER's amended tax treatment on EBSS and S factor revenue adjustments in the PTRM which provides an estimated additional $0.4 million in revenue compared to AusNet Services' proposed approach.
- AusNet Services adopts the Preliminary Decision to reclassify $47.3 million (nominal) in opening TAB relating to AMI communications / IT assets from standard control services (as proposed by AusNet Services) back into alternative control services.
- AusNet Services does not accept the Preliminary Decision on the value of imputation credits (gamma) of 0.4. AusNet Services proposes a value for gamma of 0.25 for reasons as set out in Chapter 7 (Rate of Return & Gamma) of this Revised Proposal.

10.2.3 Revised Proposal

Having regard for the other revenue building blocks forming part of AusNet Services' Revised Proposal, together with a proposed gamma value of 0.25, AusNet Services' revised corporate tax allowance is set out in the table below.

Table 10.4: AusNet Services' Revised Proposed Corporate Income Tax

(Nominal $M)	2016	2017	2018	2019	2020	Total
Tax Payable	73.5	63.6	65.9	68.4	68.2	339.5
Less: value of imputation credits	18.4	15.9	16.5	17.1	17.0	84.9
Net corporate income tax allowance	**55.1**	**47.7**	**49.4**	**51.3**	**51.1**	**254.7**

Source: AusNet Services

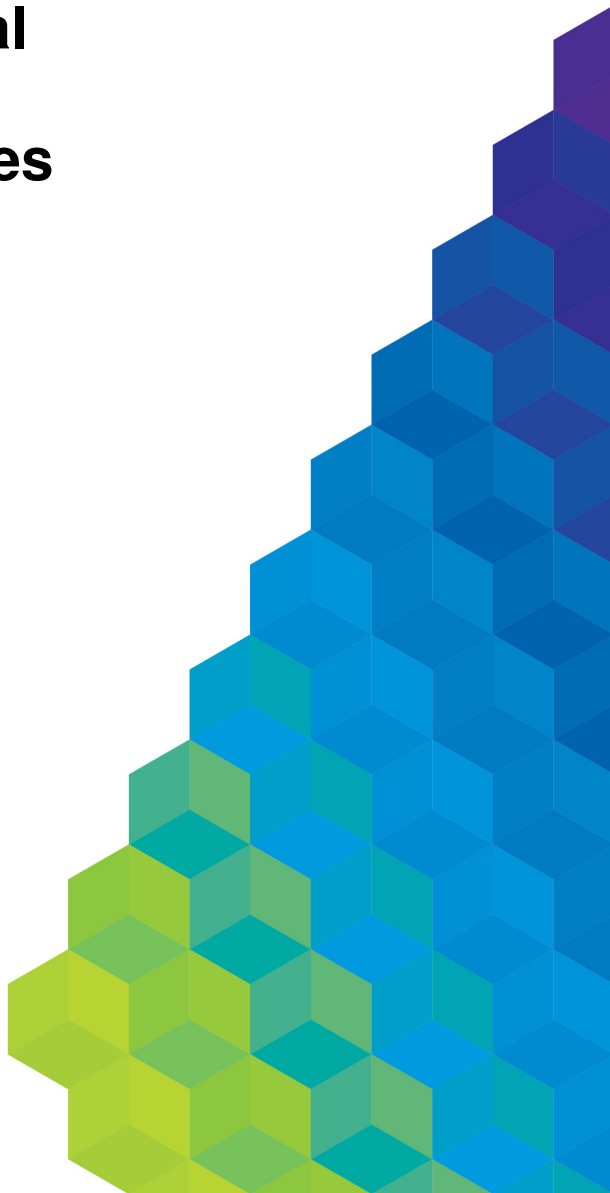
AusNet Electricity Services Pty Ltd

Electricity Distribution Price Review 2016-20

Revised Regulatory Proposal

Chapter 11: Metering Services

Submitted: 6 January 2016



Chapter 11: Metering Services

This chapter sets out AusNet Services' response to the Australian Energy Regulator's (AER's) Preliminary Decision with respect to Metering as set out in Attachment 16 of the Preliminary Decision. AusNet Services' initial positions were set out in Chapter 17 of the Regulatory Proposal.

In the event of inconsistency between information contained in this chapter and AusNet Services' Initial Proposal, the information contained in this chapter prevails.

11.1 Introduction

The AER approved $52.5 million ($2015) of $143 million ($2015) in metering capital expenditure, a reduction of $90.5 million, or 63% from the metering capital expenditure forecast set out in AusNet Services' Initial Proposal. The AER also rejected $10 million ($2015) in metering capital expenditure that AusNet Services proposed to allocate to standard control services. The major cut to metering capex comprises expenditure which the AER characterised as communication technology switching costs.[1]

The metering operating expenditure totalling $139.7 million ($2015) that AusNet Services proposed to be allocated to standard control services and metering alternative control services was approved by the AER.[2]

The AER rejected the allocation of $75.3 million in AMI communication / IT assets from the standard control services regulatory asset base (RAB) to the alternative control services metering RAB.[3]

In summary, AusNet Services:

- accepts the approved type 7 metering services charges, the price control mechanism for alternative control services, and the approved remote services charges;
- does not accept the allocation of costs between standard control services and alternative control services; and
- proposes to increase metering opex and capex as a result of new information available and to be consistent with the assumptions underlying the Preliminary Decision, and to remove meter installation costs of new connections from metering costs.

In light of these changes, AusNet Services proposes a total revenue requirement for the 2016-20 regulatory period of $466.2 million (nominal).

The remainder of this chapter is structured as follows:

- Section 11.2 outlines AusNet Services' concerns regarding the AER's allocation of costs between standard control services and alternative control services;
- Section 11.3 sets out AusNet Services' revised metering capex forecast;
- Section 11.4 sets out AusNet Services' revised metering opex forecast;
- Section 11.5 sets out AusNet Services' revised metering opening RAB as at 1 January 2016;
- Section 11.6 sets out AusNet Services' revised metering revenue requirements; and
- Section 11.7 sets out AusNet Services' revised exit fee.

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1 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 16 – Alternative Control Services*, October 2015, p. 28.

2 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 16 – Alternative Control Services*, October 2015, p. 29.

3 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 16 – Alternative Control Services*, October 2015, p. 28.

The information set out in this chapter accords with all the applicable requirements of the National Electricity Rules (NER).

11.2 Allocation of Costs Between Network and Metering Services

AusNet Services rejects the AER's allocation of costs between network and metering services.

11.2.1 Preliminary Decision

The Preliminary Decision rejected AusNet Services' proposed allocation of the following forecast expenditure and asset values to standard control services and reallocated it to metering alternative control services:

- $86 million in forecast metering opex;
- $10 million in forecast metering communication infrastructure capex; and
- $75.3 million in existing AMI IT / communication assets to standard control services.[4]

The AER considers that some of the key framework issues impacting the metering decision are:

- the transition of governance from the AMI Order in Council (AMI OIC) to the NER; and
- the possibility that metering contestability will be introduced in Victoria.

The AER's view is that until it makes the Distribution Ring Fencing Guidelines setting out how metering costs should be treated, all costs formerly regulated under the AMI OIC should be allocated to alternative control services. The AER sees this approach as being consistent with the status quo whereby AMI costs were recovered separately to most distribution network costs. The AER considers its approach will promote transparency around trends in metering alternative control services expenditure and standard control services expenditure.[5]

The AER also noted that the way it assesses the efficiency of metering costs is not impacted by the way the costs are allocated between alternative control services and standard control services.[6]

11.2.2 Response to Preliminary Decision

AusNet Services accepts the allocation of sunk AMI costs (i.e. those costs incurred before 1 January 2016) to the opening metering RAB for metering alternative control services.

AusNet Services does not accept the AER's allocation of ongoing costs associated with core distribution systems that were modified as part of the roll-out of AMI to metering alternative control services. By allocating these costs to metering alternative control services, the Preliminary Decision is inconsistent with:

- Clause S2.6 of the AMI OIC, which distinguishes between the activities required to establish the metering service and those required after its establishment;
- The long-standing approach to cost treatment in Victoria;
- The DNSP's responsibilities set out in the NER; and
- AusNet Services' approved Cost Allocation Methodology (CAM).

These inconsistencies are explained in the sections below.

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4 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 16 – Alternative Control Services*, October 2015, p. 28

5 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 16 – Alternative Control Services*, October 2015, p. 40.

6 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 16 – Alternative Control Services*, October 2015, p. 40.

Intent of the AMI OIC

The AMI OIC recognises that the roll-out requires distributors to establish new or modify existing IT systems, including systems, applications and infrastructure used to provide standard control services ("Distribution IT Systems"). The affected systems include billing systems, B2B systems, meter data management systems and customer information systems.

The AMI OIC expressly permits AusNet Services to recover the costs of modifying its Distribution IT Systems through the charges set by the AER under the AMI OIC. It does this by identifying the costs as being for activities which are "within scope"; that is, the costs for activities which are "reasonably required for the provision of metering services under the AMI OIC, and to comply with a metering regulatory obligation or requirement."[7]

The fact that cost recovery for AMI-related modifications to Distribution IT Systems was regulated by the AMI OIC rather than the NER does not alter the fundamental character of the systems (i.e. that they are used to provide standard control services). Prior to the AMI OIC, the Distribution IT Systems were regulated as standard control services and their asset values rolled into the RAB. Indeed, the costs of modifying these systems during the term of the AMI OIC for non-AMI reasons continued to be allocated to standard control services.

AusNet Services submits that the appropriate approach for the 2016-20 period is to return to the status quo; namely, to allocate Distribution IT Systems-related costs to standard control services, and assign the accompanying asset values to the RAB. This approach is consistent with the structure of the AMI OIC, which recognises that these systems may require modifications in the establishment phase of the AMI roll-out[8] but not the business as usual phase.[9] For example, distribution (as opposed to AMI) IT systems are defined in clause S2.6(b)(2)(vii)(E), reproduced below:

> *"(E) include any modifications to:*
>
> *(1) Distribution IT Systems affected by the introduction of AMI Technology; or*
>
> *(2) Distribution IT Systems arising from the introduction of AMI Technology and needed in order to make the Distribution IT Systems effective for the distribution or supply of electricity by the distributor under its licence.*
>
> *Examples of the Distribution IT Systems that might need modification are an outage management system, a geospatial information system, application-to-application interfaces, business-to-business interfaces."*

For the Preliminary Decision to allocate the costs of distribution system changes during the 2016-20 period to metering alternative control services is inconsistent with the service classifications assigned to those systems and with the structure of the AMI OIC itself.

AusNet Services accepts that the "business as usual" costs of IT systems purpose-built for the AMI program (and which are not used by the distribution network to provide standard control services) should remain in the metering alternative control service. This is consistent with clause S2.6(c) of the AMI OIC.

Previous allocations in Victoria

The Preliminary Decision's approach to cost allocation does not accord with the way metering and distribution costs have been allocated in Victoria in previous regulatory determinations.

Prior to the roll-out of smart meters, the Distribution IT Systems were treated as distribution services and all costs were recovered via the distribution use of system (DUoS) charges.

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7 AMI OIC, clauses S2.6(b)(2)(vii)(E) and 2.9.

8 AMI OIC, clause S2.6(b)(2)(vii)(E).

9 AMI OIC, clause S2.6(c).

For example, in the 2005 EDPR Final Decision, the Essential Services Commission stated:[10]

> *"The prescribed metering services that these new arrangements will apply to include:*
>
> - *meter provision (the supply, installation and maintenance of metering equipment); and*
> - *metering data services (the collection, processing, storage of, and provision of access to, metering data)."*

In particular, in relation to IT systems, the Final Decision said:[11]

> *"In assessing a reasonable capital expenditure for IT systems allocated to the metering price control, the Commission has adopted the principle that the costs of those IT systems that are required for all customers, regardless of whose meter is installed, should be recovered through the DUoS price control ... The costs of those IT systems that are required only for customers who have the distributor's meter installed should be recovered through the metering price control."*

The way distribution costs incurred because of the AMI roll-out were to be allocated did not arise during the 2011-15 EDPR because those costs were recoverable under the AMI OIC.[12] However, with regulation of metering services reverting to the NER from 1 January 2016, the issue now arises.

The treatment AusNet Services proposes simply restores the operating costs for the Distribution IT Systems to the allocation that existed prior to the AMI OIC.

Consistency with NER Responsibilities

The NER sets out the responsibilities of both the DNSP and the Responsible Metering Provider in the contestable metering environment.[13]

AusNet Services already operates an integrated suite of core applications which provide various functions necessary to manage the electricity distribution network and metering activities. These applications underpin AusNet Services' capabilities to accurately bill customers on the basis of metering data, provide essential market services (including the provision of metering data to customers and their representatives) and enable key functions in the monitoring of the electricity distribution network.

The end-to-end metering systems, developed by AusNet Services, focus on delivering metering data to the market for its AMI meters. Metering data is validated and, where required, substituted, in AusNet Services' capacity as a Metering Data Provider.

The AEMC recently made major changes to the NER and NERR to expand competition in metering and related services.[14] In the contestable regime, a DNSP could, in theory, cease to be a metering data provider. This is instructive because the resulting changes to its responsibilities and obligations are such that a DNSP would still require core distribution systems regardless of whether it continued to be the metering data provider.

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10 *Electricity Distribution Price Review 2006-10, October 2005 Price Determination as amended in accordance with a decision of the Appeal Panel dated 17 February 2006 Final Decision Volume 1 Statement of Purpose and Reasons*, p. 503.

11 Ibid, p. 533.

12 NER, clause 11.17.6. See also Australian Energy Regulator, *Final Decision, Victorian electricity distribution network service providers, Distribution determination 2011-2015*, October 2010, p. 5.

13 NER, Chapter 7.

14 *National Electricity Amendment (Expanding competition in metering and related services) Rule 2015 No. 12*; *National Energy Retail Amendment (Expanding competition in metering and related services) Rule 2015 No. 1*.

In particular, metering contestability will result in DNSPs being:

- Receivers of metering data rather than providers, which will affect the way AusNet Services interacts with customers and provides market services that enable access to retailer of choice;[15]
- Responsible for the provision of metering data to customer and customers and their authorised representatives (from 1 March 2016);[16]
- Responsible for supporting the retailer contestable roll-out (1 December 2017);[17] and
- Responsible for registering life support equipment (1 December 2017).[18]

Even if a distributor did not own a single meter, in order for it to fulfil these regulatory obligations it would require:

- A stand-alone billing system;
- A meter data management system (MDMS), capable of receiving multiple metering providers' data;
- A Customer Information System to record customer details, including life support information, and to ensure the accuracy and completeness of its register and its availability to AEMO and retailers.

Therefore, it is appropriate that all systems and assets required to provide the standard control network service, and particularly the Local Network Service Provider (LNSP) function currently contained in the NER, are included in a DNSP's DUoS charges. Even in the contestable metering environment, a DNSP will remain responsible for network billing, maintaining systems capable of interfacing with other businesses, maintaining systems that could incorporate metering data from other providers and customer management systems.

This is entirely consistent with AusNet Services' proposed cost allocation, which retains the costs associated with these core distribution systems in standard control services.

This discussion demonstrates that AusNet Services' proposed cost allocation approach is appropriate regardless of the introduction of metering contestability. Therefore, the AER's concern about the uncertainty of the Victorian Government's approach to metering contestability is not a sound basis for rejecting AusNet Services' proposed cost allocation. It is not good regulatory practice to allow decisions to be guided by policy where the timeframe for its implementation is no more certain than "at some point in time."[19]

Consistency with Economic Efficiency Principles

The AER's allocation of metering services costs solely to alternative control services does not promote efficient investment in electricity services and is not, therefore, in the long term interests of consumers. Accordingly, the AER's decision does not, and is not likely to, contribute to the achievement of the National Electricity Objective (NEO).

From an allocative and dynamic efficiency perspective, the revenue caps for standard control services and alternative control services should reflect the costs of providing the relevant services, without any cross subsidy between the two categories. This approach promotes economic efficiency

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15 NER 7.8 (d): The LNSPs must: (1) issue a unique NMI for each metering installation to the financially responsible Market Participant; and (2) register the NMI with AEMO in accordance with procedures from time to time specified by AEMO.

16 *NER 7.14(a)-(d).*

17 NERR 99A and 91A.

18 NERR 125(2)(a) and Electricity Distribution Code section 5.6.

19 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 16 – Alternative Control Services*, October 2015, p. 40.

by providing cost-reflective price signals to consumers and producers, consistent with the NEO[20] and the revenue and pricing principles.[21]

The AER expresses concerns that an incorrect cost allocation approach has the potential to affect competition in Victoria.[22]

However, the highly skewed (and incorrect) cost allocation advocated by the AER realises these concerns by severely penalising incumbent DNSPs. It forces the DNSPs to try to recover a substantial proportion of their distribution costs in a competitive metering environment against competitors who do not face equivalent costs. This denies the DNSP a reasonable opportunity to recover efficient costs it incurs in providing direct control services, which is inconsistent with the revenue and pricing principles.[23] Further, the AER's approach creates an unequal playing field which is both anti-competitive and economically inefficient. Such biased competition encourages inefficient outcomes including the likely premature loss of AMI network services and data as competitor meters are unlikely to offer these services. It also introduces distortions and cross subsidies into a competitive market. Therefore, not only does the AER's cost allocation approach not contribute to the achievement of the NEO, it produces outcomes which undermine it.

Consistency with the CAM

AusNet Services submitted its proposed revised Cost Allocation Method (CAM) to the AER for approval on 8 September 2014 and it was approved on 19 December 2014.[24] AusNet Services must comply with its approved CAM.[25]

AusNet Services' CAM adopts the service classifications for direct control services from 1 January 2016 set out in the AER's Framework and Approach Paper.[26] This includes the classification of ongoing business-as-usual (BAU) metering services as alternative control services.

The approved CAM continues AusNet Services' long-standing incremental costing approach to alternative control services. As described in the preceding section, the incremental costing approach is also consistent with the NER metering contestability provisions.

The CAM also requires that all overheads be returned to standard control services. This is consistent with AusNet Services' distribution determination for the 2011-15 regulatory control period, which explicitly recognised that overheads would cease to be recovered from the metering service once the roll-out was complete.

From 1 January 2016, the cost allocation approach in the AMI OIC ceases to apply as services are regulated under the NER. Accordingly, it is appropriate that the cost allocation method which applies is the one provided for in the NER; that is, AusNet Services' approved CAM. For the AER to purport to set aside AusNet Services' CAM in favour of "a consistent approach across Victorian service providers"[27] gives rise to two undesirable results:

- It forces AusNet Services to allocate costs other than in accordance with its CAM and prevents it from complying with its obligations under the NER.

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20 NEL, section 7.

21 NEL, section 7A.

22 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 16 – Alternative Control Services*, October 2015, p. 40.

23 NEL, section 7A(2).

24 AER, *Final decision, AusNet Services, Revised Cost Allocation Method*, 19 December 2014.

25 NER, clause 6.15.1.

26 AER, *Final Framework and approach for the Victorian Electricity Distributors Regulatory control period commencing 1 January 2016*, 24 October 2014.

27 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 16 – Alternative Control Services*, October 2015, p. 40.

- AusNet Services' actual direct control services costs are allocated using a method which is different from the method used to establish its cost allowances.

Permitting either outcome compromises the effectiveness of the incentive regimes and is at odds with the revenue and pricing principles and the NEO.

Ring Fencing Guidelines

The Preliminary Decision assumes the AER can defer its decision on the appropriate allocation of metering services costs until after it develops the Ring Fencing Guidelines. The AER's preference is to allocate all costs formerly regulated under the AMI OIC to metering alternative control services in the interim.[28]

The development of the Ring Fencing Guidelines is not relevant to the AER's present cost allocation task and is a distraction. The timing of the distribution determination process requires the AER to make its substitute determination by the end of April 2016, but it has until December 2016 to finalise the guidelines. There is no basis for the AER deferring its decision on the appropriate cost allocation approach until the guidelines are made, particularly in circumstances where it is considering an allocation approach which is inconsistent with AusNet Services' CAM.

It is of great concern that the AER is even considering an allocation approach that would allocate the costs of core DNSP systems and services to the metering service. However, regardless of the approach that is adopted in the Ring Fencing Guidelines, it is poor regulatory practice to hold all the costs in metering. If the AER is uncertain about how to resolve potential cost allocation issues in preparation for metering services contestability, it is more appropriate to hold all distribution costs in DUoS until there is clear guidance about what metering services are contestable and the division of responsibilities between the DNSP and the metering provider.

Finally, AusNet Services does not agree that the Victorian DNSPs have equal opportunity to recover their efficient costs irrespective of whether the costs are allocated to standard control services or to metering (alternative control) services.[29] Unlike standard control services, metering services do not benefit from the incentives offered by the EBSS or the CESS. The different treatment that metering services (as alternative control services) receive in the regulatory framework underscores the importance of allocating costs appropriately at the outset, rather than deferring the analysis and adopting a sub-optimal interim position.

11.2.3 Revised Proposal

For the reasons set out above and consistent with its Initial Proposal, AusNet Services' Revised Proposal allocates future metering services costs consistently with the evidence referred to above. That is, AusNet Services' opex costs associated with distribution services are allocated to standard control services, while costs associated with the ongoing metering service are allocated to the metering alternative control services.

In practice, this means that many distribution business systems (as opposed to dedicated metering systems) that were upgraded as part of the AMI roll-out will now be subsumed into the distribution service. These include billing and B2B (data to market) systems that are required to fulfil distribution services and which AusNet Services would be required to operate and maintain even in the absence of a metering service.

As detailed in the Initial Proposal, the AMI communications network provides numerous network management services, and many additional services have been identified for future implementation. These network services will be utilised in the future, irrespective of whether AusNet Services' provides a metering service, therefore these costs are properly allocated to standard control services.

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28 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 16 – Alternative Control Services*, October 2015, p. 40.

29 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 16 – Alternative Control Services*, October 2015, p. 40.

In accordance with AusNet Services' approved CAM and long-standing practice, metering charges for the 2016-20 regulatory control period will be calculated on an incremental costs basis.

AusNet Services' position results in the following allocation of ongoing operating expenditure post 31 December 2015:

- The inclusion of forecast communication and IT (ex-MMS) opex in the standard control IT opex (see section 4.7 of chapter 4); and
- Overheads that were previously allocated to the AMI project now being recovered as part of the core distribution network service (see section 4.7 of chapter 4).

11.3 Metering Capex

11.3.1 Preliminary Decision

The Preliminary Decision on metering capex approved the following:

- Meter volume;
- Meter hardware costs for all meter types except the single phase single element meters;
- Business as usual communication technology costs including communication infrastructure and communication modules;
- Meter installation costs including the cost of a new connection installation; and
- IT costs excluding communication technology switching costs.

The AER rejected the communication technology switching costs, recognising that AusNet Services may have to replace the existing communication technology and doing so will incur costs in the 2016-20 regulatory control period.[30]

11.3.2 Response to Preliminary Decision

AusNet Services has revised its capital expenditure to be consistent with the Preliminary Decision assumptions. In addition, AusNet Services has new information that became available after the Initial Proposal was submitted and this is incorporated into AusNet Services' revised capex forecast. Further details regarding the revised capex forecast are contained in the Addendum to Metering Asset Management Strategy and a summary is provided below.

Communication technology switching costs

AusNet Services disagrees with the AER's conclusion[31] that the cost of the staged replacement of the existing communication technology is a switching cost. As explained in the documentation supporting the Initial Proposal, AusNet Services proposes to replace the communication technology because it is reaching the end of its life and is becoming obsolete.[32]

Nonetheless, AusNet Services has revised its metering case to be consistent with the Preliminary Decision's benchmark capex assumptions. As the Preliminary Decision does not fund the original capex replacement program, the revised proposal assumes the existing communication technology solution will be used throughout the 2016-20 regulatory period.

However, should any element of the communication technology fail during the regulatory period, AusNet Services will need to replace the communication technology. Consistent with

30 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 16 – Alternative Control Services*, October 2015, p. 41.

31 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 16 – Alternative Control Services*, October 2015, pp. 28, 49.

32 AusNet Services, *Electricity Distribution Price Review - Regulatory Proposal, Metering Asset Management Strategy*, April 2015.

AusNet Services' approved CAM, new communication infrastructure costs will be incurred as standard control services costs by the DNSP.

Continuing to use the existing communication technology throughout the regulatory period heightens the risk of failure and instability. As the communication modules have a design life of seven years, AusNet Services forecasts that the fault rates will progressively increase during the 2016-20 regulatory period. Consequently, AusNet Services is expecting it will be required to purchase more replacement communication modules.

The assumptions underpinning the Preliminary Decision also have implications for opex which are explained in the following section.

Meter volume

The Victorian Government's residential (household) growth forecasts have increased from 1.75% per annum to 1.99% per annum in the period 2016 to 2021. Accordingly, AusNet Services has increased the forecast for new connections.

Meter hardware costs

AusNet Services accepts the AER's meter hardware cost for single phase single element meters. No changes are proposed for the meter hardware costs of the remaining meter types.

Business as usual communication modules

Due to the increase in the volume forecast for new connections, AusNet Services is proposing a corresponding increase in the costs of the communication modules (comprising of communication cards and antennas).

Meter installation costs

In the Initial Proposal, AusNet Services included the installation costs of new connections in the forecast capex for the regulatory period. As these costs are recovered directly from customers through a separate charge, AusNet Services now proposes to remove these costs from metering capex. This approach is now consistent with the other Victorian DNSPs.

11.3.3 Revised Proposal

AusNet Services' revised metering capex is shown in the table below:

Table 11.1: Metering capex

Real $2015 ($M)	2016	2017	2018	2019	2020	Total
Meters (including communication modules)	13.1	13.7	15.5	16.7	17.9	**76.9**
Communication infrastructure	4.6	0.2	0.2	0.2	0.2	**5.4**
IT (MMS)	-	-	0.3	0.3	0.3	**0.9**
Total	**17.7**	**13.9**	**16.0**	**17.2**	**18.4**	**83.2**

Source: AusNet Services

11.4 Metering Opex

The Preliminary Decision approved all of AusNet Services' proposed metering opex, including the amounts allocated to standard control services.

However, the opex forecast put forward in the initial proposal represented BAU costs predicated on a capital expenditure program that replaced the obsolete communication technology. The Preliminary Decision has not allowed for this capital expenditure. Without that program, the efficiency gains reflected in the opex forecast in the Initial Proposal can no longer be achieved.

Therefore, AusNet Services cannot accept the Preliminary Decision on metering opex. AusNet Services must now propose the BAU opex costs required to continue to operate the existing metering communication technology over the 2016-20 period. AusNet Services' revised opex position is now consistent with the Preliminary Decision on metering capex.

AusNet Services' approach reflects NER clause 6.5.6(e)(7), which states that when the AER is considering the forecast operating expenditure for the regulatory control period of a prudent and efficient business, the AER must have regard of the substitution possibilities between opex and capex.

11.4.1 Preliminary Decision

The Preliminary Decision approved all of AusNet Services' proposed metering opex, including the amounts AusNet Services allocated to standard control services.

11.4.2 Response to Preliminary Decision

AusNet Services does not accept the Preliminary Decision because it does not take into account the fact that AusNet Services will be maintaining the existing communication technology over a longer period during the 2016-20 regulatory period. As the AER acknowledges, there is a trade-off between the levels of capex and opex because opex efficiencies and savings can only be achieved by having an assumed level of capex.

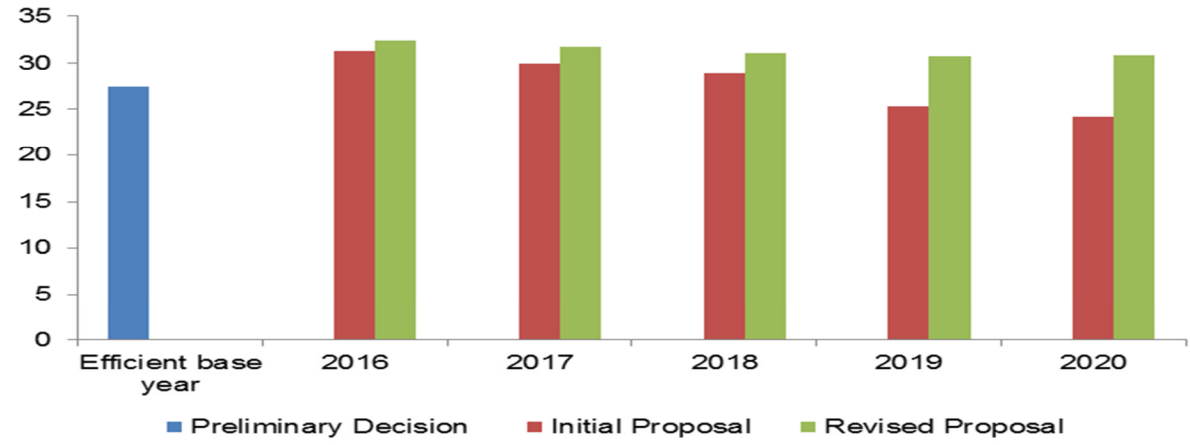
- As noted in section 11.3.2 above, AusNet Services expects an increased fault rate in the communication modules the longer the modules remain in service. This necessitates additional resources to maintain and repair these communication modules during the regulatory period, and thus an increased opex forecast of $1.1 million (real $2015).
- Furthermore, new information that became available after the Initial Proposal was submitted means additional opex is required to maintain and support the communication technology throughout the regulatory period. The additional costs are due to contracts subsequently entered into with vendors that were not included in the forecast submitted as part of the Initial Proposal, which accounts for approximately $6.3 million (real $2015).
- Consistent with the Preliminary Decision on metering capex, certain elements of opex will increase due to the continued use of the existing communication technology for a longer period. This amounts to $10 million (real $2015).
- Further information about these updated costs are contained in the Addendum to Metering Asset Management Strategy. The proposed IT and communication infrastructure costs are not related to the meter management system (MMS) and therefore, consistent with the arguments above, AusNet Services has reallocated these costs to standard control services (see section 4.7 of Chapter 4).
- AusNet Services' approved CAM specifies that no overheads are applied to alternative control services based on an incremental costing approach. Therefore, consistent with the CAM, AusNet Services has reallocated overheads from metering alternative control services to standard control services, using updated labour escalators for the regulatory period. This resulted in a decrease of $0.3 million (real $2015).

The figure below shows an assessment of the efficient opex level across the regulatory period based on the total metering opex allocated to both standard control services as well as metering alternative control services. In its Initial Proposal, AusNet Services proposed an efficient level of BAU opex based on the forecast capex that replaced the obsolete communication technology.

AusNet Services had forecast opex to decrease during the regulatory period as opex efficiencies would be gained from its capex program. As the AER rejected the communication technology that was proposed to be replaced, the opex efficiencies originally forecasted have been substantially reduced. In contrast, certain elements of opex will increase as a result of the AER's Preliminary Decision because AusNet Services will now continue to use the existing communication technology throughout the regulatory period where possible. This includes the costs of radio licences, and rental and tower maintenance which have to be continually incurred throughout the use of the existing communication technology. It should be noted that these costs were previously found to be efficient by the AER.

Costs to maintain an obsolete communication technology increases as systems, processes and support need to be maintained for a longer period. Furthermore, AusNet Services lacks bargaining power over proprietary vendors of the obsolete communication technology. AusNet Services reiterates that opex efficiencies and savings can only be achieved by having an assumed level of efficient capex.

Figure 11.1: Efficient opex ($M, real $2015)



Source: AusNet Services

11.4.3 Revised Proposal

AusNet Services is proposing opex revisions to:

- Opex allocated to standard control services: IT and communication infrastructure maintenance and support (non-MMS) and overheads (see section 4.7 of Chapter 4); and
- Opex allocated to metering alternative control services: meter maintenance.

This represents an increase of $17 million from the Preliminary Decision, with $15.9 million being allocated to standard control services and $1.1 million being allocated to metering alternative control services in accordance with the approved CAM. These costs reflect the efficiency gains lost as a result of the capex forecast being rejected.

AusNet Services' revised metering alternative control services opex is shown in the table below:

Table 11.2: Metering opex

Real $2015 ($M)	2016	2017	2018	2019	2020	Total
Meter reading	1.4	1.4	0.8	0.8	0.8	**5.2**
Meter data management	4.2	3.4	3.6	3.8	3.9	**18.9**
Meter maintenance	2.5	2.4	2.2	2.3	2.5	**11.9**
Metering management	0.3	0.3	0.3	0.3	0.3	**1.5**
IT (MMS) & communication infrastructure maintenance & support	3.4	3.5	3.5	3.5	3.5	**17.4**
Total	**11.8**	**11.0**	**10.4**	**10.7**	**11.0**	**54.9**

Source: AusNet Services

11.5 Metering RAB

The opening metering RAB as at 1 January 2016 in the Preliminary Decision is based on AusNet Services' forecast capex for 2014 and 2015 from its AMI Charges Model (contained in its 2015 Charges Application), updated for CPI. The AER has also adjusted AusNet Services' proposed forecast capex for the 2016-20 regulatory period, and reallocated costs from standard control services to alternative control services.[33]

11.5.1 Preliminary Decision

The AER's Preliminary Decision approved an opening metering RAB as at 1 January 2016 of $380.4 million (nominal). This includes $75.3 million in AMI communication/IT assets which was reallocated from the standard control RAB to the metering RAB. The AER also substituted AusNet Services' 2014 actual and 2015 forecast capex with the forecast capex for 2014 and 2015 from the AMI Charges Model (2015 Charges Application), updated for CPI.[34]

In relation to depreciation, the AER accepted standard asset lives of 15 years for metering assets and 7 years for communication and IT assets.[35]

Consistent with standard control services, the AER approved an allowed rate of return of 6.1% (nominal vanilla) instead of AusNet Services' proposed 7.19% rate of return for the 2016 regulatory year.[36]

11.5.2 Response to Preliminary Decision

AusNet Services does not accept the Preliminary Decision's opening metering RAB because using AusNet Services' forecast capex for 2014 and 2015 from the AMI Charges Model does not provide a true reflection of the opening metering RAB as the amounts in the AMI Charges Model are lower than the actual costs incurred and forecast to be incurred.

33 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 16 – Alternative Control Services*, October 2015, p. 47.

34 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 16 – Alternative Control Services*, October 2015, p. 47.

35 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 16 – Alternative Control Services*, October 2015, p. 47.

36 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 16 – Alternative Control Services*, October 2015, p. 39.

AusNet Services proposes to calculate the opening metering RAB using its actual 2014 capex and its 2015 forecast capex as these figures constitute the latest information available.

AusNet Services proposes to use the same rate of return as for standard control services.

11.5.3 Revised Proposal

AusNet Services' revised metering RAB is shown in the table below.

Table 11.3: Metering RAB

Nominal $M	2016	2017	2018	2019	2020
Opening RAB	424.1	386.4	341.1	294.8	270.1
Net Capex	18.7	15.0	17.6	19.4	21.1
Economic Depreciation	-56.4	-60.3	-63.9	-44.1	-26.5
Closing RAB	386.4	341.1	294.8	270.1	264.7

Source: AusNet Services

11.6 Metering Revenue Requirements

Metering services is subject to a revenue cap and an annual adjustment will be made to clear (or true-up) any under or over recovery of actual revenue collected.

11.6.1 Preliminary Decision

The AER's Preliminary Decision approved a total revenue requirement of $442.5 million (nominal) over the regulatory period. The Preliminary Decision does not set prices over the regulatory period as metering services is subject to a revenue cap. The AER will approve actual metering prices during the annual pricing process.[37]

11.6.2 Response to Preliminary Decision

AusNet Services rejects the Preliminary Decision on metering revenue requirements for the reasons set out in the preceding sections. AusNet Services proposes an annual revenue requirement based on the same inputs for inflation and rate of return as for standard control services.

11.6.3 Revised Proposal

AusNet Services' revised metering annual revenue requirement is shown in the table below.

Table 11.4: Metering Revenue Requirement

Nominal ($M)	2016	2017	2018	2019	2020
Depreciation	56.4	60.3	63.9	44.1	26.5
Return on capital	36.8	33.1	28.6	23.8	21.0
Opex[38]	12.2	11.7	11.2	11.8	12.2

[37] AER, *AusNet Services Preliminary Decision 2016-20, Attachment 16 – Alternative Control Services*, October 2015, p. 29.

[38] Including debt raising costs.

Nominal ($M)	2016	2017	2018	2019	2020
Tax	-	-	-	7.2	5.4
Unsmoothed revenue requirement	105.4	105.1	103.7	86.9	65.1
X factor (%)[39]	35.57	7.81	7.81	7.81	7.81
Smoothed revenue requirement	105.4	99.3	93.5	88.1	83.0

Source: AusNet Services

The annual metering charges based on the metering annual revenue requirement are shown in the table below. The actual metering charges will be subject to the AER's annual pricing approval process.

Table 11.5: Annual Metering Charges ($ nominal)

Meter type	2016	2017	2018	2019	2020
Single phase single element	132.23	121.83	112.25	103.42	95.29
Single phase two element with contactor	151.95	140.00	128.99	118.84	109.50
Multiphase	183.58	169.14	155.84	143.58	132.29
Multiphase with contactor	203.64	187.62	172.87	159.27	146.74
Multiphase CT connected	262.12	241.51	222.51	205.01	188.89

Source: AusNet Services

11.7 Exit Fee

Clause 11.17.6(b) of the NER requires the exit fee to be determined and regulated during the 2016-20 regulatory control period in accordance with the requirements of the AMI OIC.

11.7.1 Preliminary Decision

The Preliminary Decision impliedly accepted the mechanism for the exit fee in accordance with the AMI OIC methodology.[40] The exit fee in the Preliminary Decision incorporated adjustments to reflect the AER's assessment of AusNet Services' 2016 opening RAB, the reallocation of costs from standard control services, and the AER's capex forecast assessment. The AER accepted as reasonable and efficient AusNet Services' proposed costs for removing the metering installation.[41]

[39] The X factor assumed the annual return on debt is the same during the regulatory control period. In reality, the X factor from 2017 to 2020 will be revised to reflect the updated annual return on debt.

[40] AER, *AusNet Services Preliminary Decision 2016-20, Attachment 16 – Alternative Control Services*, October 2015, p. 47.

[41] AER, *AusNet Services Preliminary Decision 2016-20, Attachment 16 – Alternative Control Services*, October 2015, pp. 47-48.

11.7.2 Response to Preliminary Decision

AusNet Services agrees with the AER's method for calculating the exit fee. However, AusNet Services rejects the inputs used to calculate the fee, specifically the inclusion of costs reallocated from standard control services to metering alternative control services, and the capex forecast used to calculate the fee. AusNet Services also proposes to revise the meter removal costs.

Consistent with AusNet Services' arguments set out above regarding the allocation of costs between alternative control services and standard control services, AusNet Services proposes that the forecast capex is comprised of metering assets which are not, in whole or in part, related to providing standard control services. AusNet Services also proposes that the opening RAB be based on the actual metering capex for 2014 and the forecast metering capex for 2015. The metering capex forecast has also been updated as per section 11.3 above.

Reasonable and efficient costs of removing the metering installation

The AMI OIC allows the exit fee to reflect the "reasonable and efficient costs of removing the metering installation for which the distributor was the responsible person." In the Initial Proposal, AusNet Services had used incorrect standard labour rates. The standard labour rate used in the revised proposal has been increased to $69.61 per hour which is within the AER's maximum allowed total labour rate for an administration role.

AusNet Services also notes that there have been instances in AusNet Services' contestable metering division (meter types 1 to 4) in which the new metering provider failed to return the churned meter. Similar to Jemena Electricity Networks' proposal[42], AusNet Services proposes that a site visit be allowed for in 20% of cases to rectify any issues that may occur and a further site visit is also allowed to locate the missing meters. These additional costs represent the reasonable and efficient costs of removing the metering installation for which AusNet Services was the responsible person.

As a result of the above, the reasonable and efficient costs of removing the metering installation have increased from $21.80 per meter to $97.51 per meter.

11.7.3 Revised Proposal

AusNet Services' revised exit fee is shown in the table below.

Table 11.6: Exit fee by meter type ($ nominal)

Meter type	2016	2017	2018	2019	2020
Single phase single element	602.68	541.12	477.58	429.92	409.19
Single phase two element with contactor	648.66	575.03	498.72	437.93	403.33
Multiphase	696.65	621.61	537.88	463.23	407.40
Multiphase with contactor	695.97	639.14	579.64	536.24	520.11
Multiphase CT connected	763.58	716.19	665.35	629.96	621.42

Source: AusNet Services

[42] Jemena Electricity Network, *Electricity Distribution Price Review – Regulatory Proposal, Attachment 11 – Metering Exit Fee*, April 2015, p. A-4.

11.8 Support Documentation

In addition to the Metering PTRM and Exit Fees and relevant parts of the RIN templates submitted with this proposal, the following documentation is provided in support of this chapter:

- Appendix 11A – Metering cost model (Confidential).
- Appendix 11B – Opening Metering RAB.
- Addendum to Metering Asset Management Strategy (Confidential).

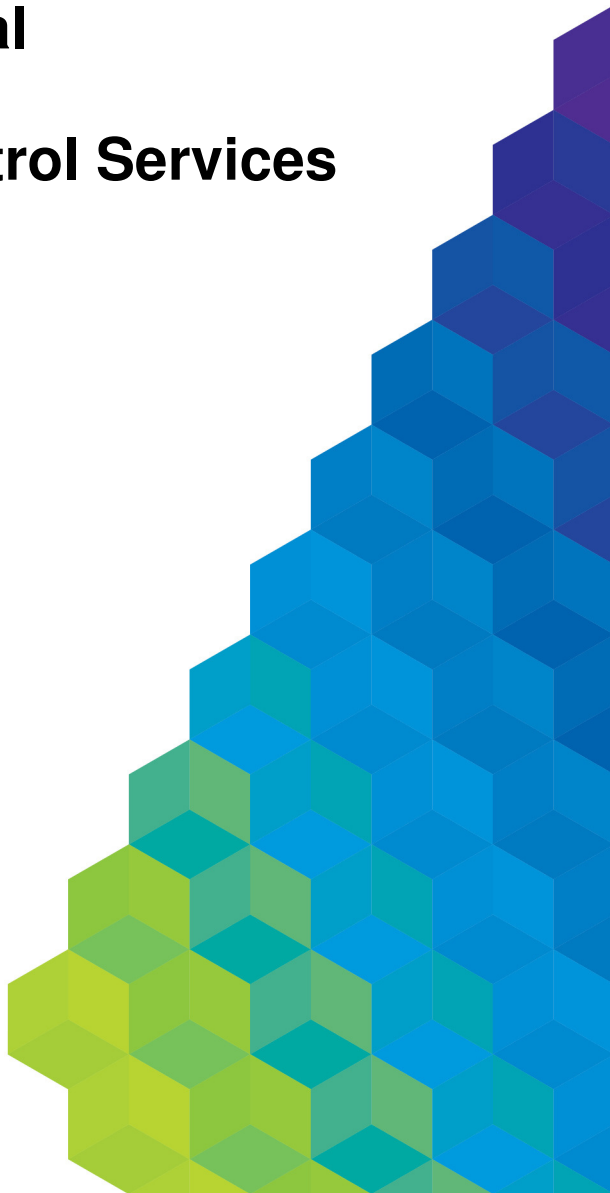
AusNet Electricity Services Pty Ltd

Electricity Distribution Price Review 2016-20

Revised Regulatory Proposal

Chapter 12: Alternative Control Services

Submitted: 6 January 2016



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Chapter 12: Alternative Control Services

This chapter sets out AusNet Services' response to the Australian Energy Regulator's (AER's) Preliminary Decision with respect to Alternative Control Services (ACS), other than metering, as set out in Attachment 16 of the Preliminary Decision. AusNet Services' initial positions were set out in Chapter 18 of the Initial Proposal.

In the event of inconsistency between information contained in this chapter and AusNet Services' Initial Proposal, the information contained in this chapter prevails.

12.1 Fee Based and Quoted Services

12.1.1 Preliminary Decision

The Preliminary Decision approved revenue of approximately $11.1 million for 2016, a reduction of $0.6 million of the revenue forecast set out in AusNet Services' Initial Proposal.

The major cuts are due to AER's rejection of AusNet Services' methodology for establishing the opening year's price, in particular, including forecast labour price growth in the Net Present Value calculation. The Preliminary Decision has accepted:

- meter equipment test prices;
- that contractor rates used in the calculations are market tested; and
- the base internal labour rates for the majority of services.

12.1.2 Revised Proposal

AusNet Services accepts the changes that the AER has made with respect to labour rate escalation and the opening prices for the Fee Based Services and the labour rates to be applied for Quoted Services.

AusNet Services does not propose any changes to these prices or services.

12.2 Public Lighting

12.2.1 Preliminary Decision

The Preliminary Decision reversed the decision in the final Framework and Approach Paper to classify dedicated public lighting services as negotiated services rather than ACS and included additional light types in the public lighting model.

Taking account of these changes the Preliminary Decision has approved revenue of approximately $7.5 million for 2016, a reduction of $0.4 million of the revenue forecast set out in AusNet Services' Initial Proposal.

The cut is entirely due to the rejection of AusNet Services' proposed nominal (vanilla) WACC of 7.19% and its replacement with 6.1%. In addition, the AER has included the following lights in the model as regulated lights:

- Light Emitting Diode 18W;
- Compact Fluorescent 32W and 42W;
- Metal Halide 70W, 100W 150W 700W;
- Mercury Vapour 700W.

12.2.2 Response to Preliminary Decision

AusNet Services accepts the change in classification in relation to public lighting and inclusion of additional light types as ACS as this approach maintains the services as a single service delivered across the network. AusNet Services' revised Service Classification is included as Appendix 2A of this Revised Proposal.

While AusNet Services accepts the Preliminary Decision's inclusion of the additional light types for regulation, AusNet Services does not accept the AER's determination on the WACC as detailed in Chapter 7 of this Revised Proposal.

Since AusNet Services' Initial Proposal was submitted in April 2015, VicRoads has requested that frangible poles be included as standard poles.

12.2.3 Revised Proposal

AusNet Services has prepared a Revised Proposal for the Public Lighting OM&R that includes the dedicated public lighting services, additional light types, takes account a proposed nominal (vanilla) WACC of 8.66% and the adoption of frangible poles as a standard pole type from 1 January 2017. Included with this resubmission is a revised Public Lighting model that uses the Revised Proposal WACC rate and includes the additional capital expenditure that will be incurred as a result of the adoption of frangible poles as standard from 2017. The result is a very small increase to revenue of $764 in 2017 which increases to an additional $5,547 in 2020.

Table 12.1: Public Lighting Annual OM&R Rates ($ Nominal)

	Central				
Light Type	2016	2017	2018	2019	2020
Mercury Vapour 80W	40.62	42.82	44.89	46.65	48.31
HP Sodium 150W	96.93	100.55	104.05	107.24	110.34
HP Sodium 250W	97.87	101.53	105.08	108.30	111.44
HP Sodium 50W	42.97	44.58	46.13	47.54	48.92
Mercury Vapour 50W	62.15	65.51	68.69	71.38	73.92
Mercury Vapour 125W	59.71	62.94	65.99	68.58	71.02
Mercury Vapour 250W	102.76	106.61	110.33	113.72	117.01
Mercury Vapour 400W	106.68	110.67	114.53	118.05	121.47
HP Sodium 100W	103.71	107.58	111.33	114.74	118.06
HP Sodium 400W	138.97	144.17	149.21	153.79	158.24
T5 2X14W	37.75	37.65	37.95	38.30	38.77
T5 2X24W	44.22	44.12	44.46	44.89	45.45
Compact Fluorescent 32W	33.51	33.42	33.68	33.99	34.41
Compact Fluorescent 42W	33.51	33.42	33.68	33.99	34.41

Central					
Light Type	2016	2017	2018	2019	2020
Metal Halide 70W	177.30	186.91	195.96	203.65	210.89
Metal Halide 100W	231.43	240.07	248.44	256.05	263.45
Metal Halide 150W	262.92	272.74	282.24	290.89	299.30
LED 18W	21.22	20.08	19.56	19.19	19.01
North & East					
Light Type	2016	2017	2018	2019	2020
Mercury Vapour 80W	46.05	48.48	50.78	52.74	54.60
HP Sodium 150W	110.24	114.25	118.15	121.72	125.20
HP Sodium 250W	109.02	113.01	116.89	120.44	123.89
HP Sodium 50W	50.13	51.95	53.73	55.35	56.93
Mercury Vapour 50W	68.16	71.75	75.15	78.06	80.81
Mercury Vapour 125W	68.16	71.75	75.15	78.06	80.81
Mercury Vapour 250W	113.38	117.53	121.56	125.25	128.85
Mercury Vapour 400W	116.65	120.92	125.07	128.87	132.57
HP Sodium 100W	117.96	122.25	126.42	130.24	133.96
HP Sodium 400W	154.81	160.48	165.98	171.02	175.93
T5 2X14W	42.44	42.46	42.88	43.35	43.94
T5 2X24W	49.69	49.72	50.21	50.77	51.48
Compact Fluorescent 32W	37.76	37.78	38.16	38.57	39.10
Compact Fluorescent 42W	37.76	37.78	38.16	38.57	39.10
Metal Halide 70W	175.21	184.45	193.18	200.66	207.74
Metal Halide 100W	233.50	242.00	250.25	257.81	265.18
Metal Halide 150W	265.27	274.93	284.30	292.89	301.26
LED 18W	21.63	20.51	20.01	19.67	19.51

Source: AusNet Services

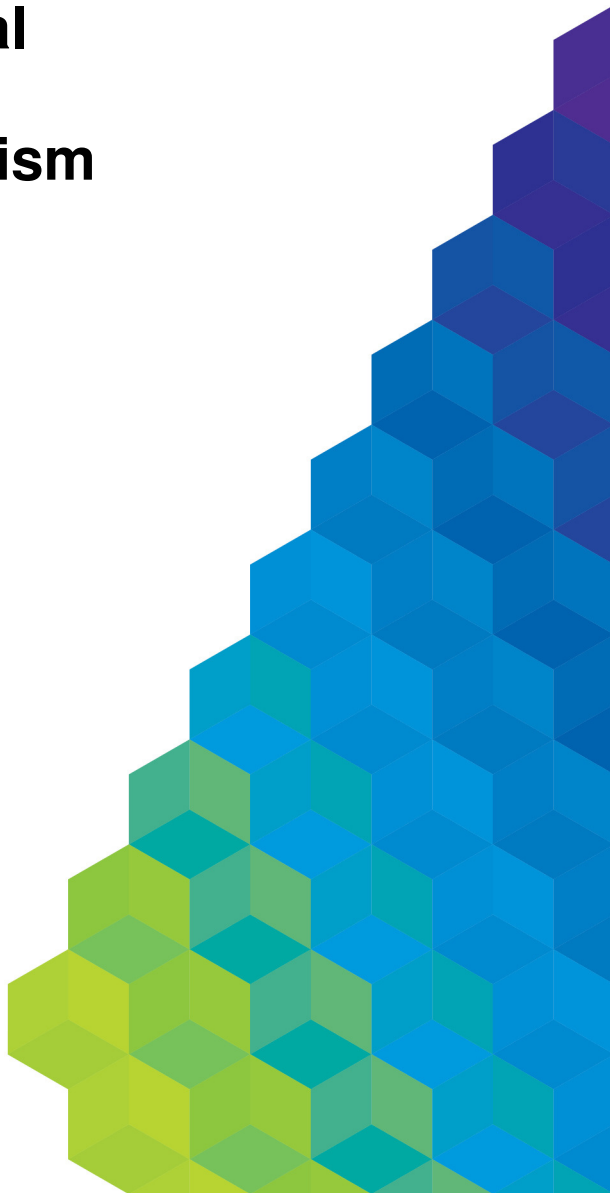
AusNet Electricity Services Pty Ltd

Electricity Distribution Price Review 2016-20

Revised Regulatory Proposal

Chapter 13: Control Mechanism

Submitted: 6 January 2016



Chapter 13: Control Mechanism

This chapter sets out AusNet Services' response to the Australian Energy Regulator's (AER's) Preliminary Decision with respect to the Control Mechanism as set out in Attachment 14. AusNet Services' initial positions were set out in Chapter 17 of the Initial Proposal.

In the event of inconsistency between information contained in this chapter and AusNet Services' Initial Proposal, the information contained in this chapter prevails.

13.1 Introduction

The AER approved the Control Mechanism formulae similar to that outlined in the Framework and Approach Paper. The formulae provide a mechanism that supports a cap on Revenues for Prescribed Distribution Services.

In summary, AusNet Services:

- accepts the Control Mechanism for Ancillary Services;
- accepts the intent of the Revenue Cap formulae for Standard Control Services;
- does not accept that the specific AAR_t formula for the T=1 year correctly defines the value for S_t to ensure an appropriate transition between the STPIS schemes for the previous regulatory period and the current regulatory period;
- does not agree that the proposed true-up mechanism for pass through items such as Transmission costs and Jurisdictional costs minimises volatility of these price components by excluding any form of true-up for the T-1 year.

Having regard to the above changes, AusNet Services proposes changes to the formulae for the 2016-20 regulatory period as outlined in the following section of this chapter.

The information set out in this chapter accords with all the applicable requirements of the National Electricity Rules (NER).

13.2 Revenue Cap Formulae

13.2.1 Preliminary Decision

The following formulae have been set out in the preliminary decision:

1. $TAR_t \geq \sum_{i=1}^{n} \sum_{j=1}^{m} p_t^{ij} q_t^{ij}$ i=1,..,n and j=1,..,m and t=1,..,5
2. $TAR_t = AAR_t + I_t + T_t + B_t$ t = 1,2,…,5
3. $AAR_t = AR_t(1 + S_t)$ t = 1
4. $AAR_t = AAR_{t-1}(1 + \Delta CPI_t)(1 - X_t)(1 + S_t)$ t = 2,…,5

where;

TAR_t is the total annual revenue in year t.

p_t^{ij} is the price of component j of tariff i in year t.

q_t^{ij} is the forecast quantity of component j of tariff i in year t.

AAR_t is the adjusted annual smoothed revenue requirement for year t.

I_t is the annual adjustment f–factor scheme amount in year t. This amount will be calculated as per the method set out in the relevant f–factor scheme.

T_t is the final carryover amount from the application of the DMIS from the 2011–15 regulatory control period. This amount will be calculated using the method set out in the DMIS and will be deducted from/added to allowed revenue in the 2017 pricing proposal.

B_t is the sum of:

- the recovery of license fee charges by the Victorian Essential Services Commission indexed by one and a half years of interest, calculated using the following method:

  $$L_{t-1}(1+WACC_{t-1})(1+WACC_{t-2})^{1/2}$$

  where:

  L_{t-1} are the licence fees paid by AusNet Services to the Victorian Essential Services Commission in the financial year ending in June of regulatory year t–1,

  $WACC$ is the approved nominal weighted average cost of capital (WACC) for the relevant regulatory year,

- any under or over recovery of actual revenue collected through DUoS charges in regulatory year t–2 as calculated using the method outlined in the AER's Preliminary Decision[1],
- the AER approved pass through amounts (positive or negative) with respect to regulatory year t.

AR_t is the annual smoothed revenue requirement as stated in the Post Tax Revenue Model (PTRM) for year t (when year t is the first year of the 2016–20 regulatory control period).

S_t is the s-factor determined in accordance with the service target performance incentive scheme (STPIS) for regulatory year t.

ΔCPI_t is the annual percentage change in the ABS CPI All Groups, Weighted Average of Eight Capital Cities from the June quarter in year t–2 to the June quarter in year t–1, calculated using the following method:

The ABS CPI All Groups, Weighted Average of Eight Capital Cities for the June quarter in regulatory year t–1

divided by

The ABS CPI All Groups, Weighted Average of Eight Capital Cities for the June quarter in regulatory year t–2

minus one.

For example, for the 2017 regulatory year, t–2 is June quarter 2015 and t–1 is June quarter 2016 and for the 2018 regulatory year, t–2 is June quarter 2016 and t–1 is June quarter 2017 and so on.

X_t is the X factor for each year of the 2016–20 regulatory control period as determined in the PTRM, and annually revised for the return on debt update in accordance with the formula specified in the AER's Preliminary Decision, calculated for the relevant year.[2]

1 AER, *AusNet Services Preliminary Decision 2016-20, Appendix A – Rate of Return*, October 2015.

13.2.2 Response to Preliminary Decision

AusNet Services proposes the following formulae to more accurately state the intent in particular in reference to the definition of the term S_t for year T=1. The AER's Preliminary Decision makes no differentiation between the definition of S_t for the T=1 year and S_t for the T=2 to 5 years. However because the value of S_t for the T=1 year deals with the transition of the previous STPIS scheme to the revised STPIS scheme it is important for clarity and future certainty that the formulae document this change. By clearly documenting the transition arrangements within the formulae by differentiating $S_t^{"}$ for the T=1 year and S_t for the remaining T=2 to 5 years there is a clear explanation for all stakeholders on the appropriate and correct arrangements for Revenue calculations. The following formulae are proposed:

1. $TAR_t \geq \sum_{i=1}^{n} \sum_{j=1}^{m} p_t^{ij} q_t^{ij}$ i=1,..,n and j=1,..,m and t=1,..,5
2. $TAR_t = AAR_t + I_t + T_t + B_t$ t = 1,2,…,5
3. $AAR_t = AR_t(1 + S^{"}_t)$ t = 1
4. $AAR_t = AAR_{t-1}(1+\Delta CPI_t)(1-X_t)(1+S_t)$ t = 2,…,5

where;

TAR_t is the total annual revenue in year t.

p_t^{ij} is the price of component j of tariff i in year t.

q_t^{ij} is the forecast quantity of component j of tariff i in year t.

AAR_t is the adjusted annual smoothed revenue requirement for year t.

I_t is the annual adjustment f–factor scheme amount in year t. This amount will be calculated as per the method set out in the relevant f–factor scheme.

T_t is the final carryover amount from the application of the DMIS from the 2011–15 regulatory control period. This amount will be calculated using the method set out in the DMIS and will be deducted from/added to allowed revenue in the 2017 pricing proposal.

B_t is the sum of:

- the recovery of license fee charges by the Victorian Essential Services Commission indexed by one and a half years of interest, calculated using the following method:

  $$L_{t-1}(1+WACC_{t-1})(1+WACC_{t-2})^{1/2}$$

  where:

  L_{t-1} are the licence fees paid by AusNet Services to the Victorian Essential Services Commission in the financial year ending in June of regulatory year t–1,

  $WACC$ is the approved nominal weighted average cost of capital (WACC) for the relevant regulatory year,

2 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 3 – Rate of Return*, October 2015.

- any under or over recovery of actual revenue collected through DUoS charges in regulatory year t–2 as calculated using the method in appendix A[3],
- the AER approved pass through amounts (positive or negative) with respect to regulatory year t.

AR_t is the annual smoothed revenue requirement as stated in the Post Tax Revenue Model (PTRM) for year t (when year t is the first year of the 2016–20 regulatory control period).

$S^{"}_t$ is the sum of the s-factors for all parameters after application of the s-bank adjusted for the change in the annual revenue requirement between the last year of the 2011-2015 regulatory control period to 2016 for regulatory year t where t=1.

S_t is the s-factor determined in accordance with the service target performance incentive scheme (STPIS) for regulatory year t where t=2,…,5.

ΔCPI_t is the annual percentage change in the ABS CPI All Groups, Weighted Average of Eight Capital Cities from the June quarter in year t–2 to the June quarter in year t–1, calculated using the following method:

The ABS CPI All Groups, Weighted Average of Eight Capital Cities for the June quarter in regulatory year t–1

divided by

The ABS CPI All Groups, Weighted Average of Eight Capital Cities for the June quarter in regulatory year t–2

minus one.

For example, for the 2017 regulatory year, t–2 is June quarter 2015 and t–1 is June quarter 2016 and for the 2018 regulatory year, t–2 is June quarter 2016 and t–1 is June quarter 2017 and so on.

X_t is the X factor for each year of the 2016–20 regulatory control period as determined in the PTRM, and annually revised for the return on debt update in accordance with the formula specified in the AER's Preliminary Decision, calculated for the relevant year.[4]

13.3 True-Up Mechanism

13.3.1 Preliminary Decision

In the Preliminary Decision the AER has adopted an approach that trues up actual costs to actual revenues for the T-2 year with no provision to make a partial true-up for the T-1 year.

13.3.2 Response to Preliminary Decision

Reserving the true-up until the T-2 year will contribute to more volatile prices for the recovery of both the Designated Pricing Proposal component and the Jurisdictional Pricing component. Furthermore, by delaying the true-up the general movement of customers connected to the network changes over time, the payments and recoveries increasingly relate to a different group of customers from those that caused the charges in the first instance. Therefore, a process that captures the true-up as close as possible to the time that the difference has occurred provides a better result for network customers and distributors.

3 AER, *AusNet Services Preliminary Decision 2016-20, Attachment 3 – Rate of Return*, October 2015.

4 Ibid.

A process that includes the true-up of the T-1 year is also more consistent with the NER, in particular the requirement of rule 16.18.2(b)(6) to include the "previous regulatory year" as follows:[5]

> "set out how *designated pricing proposal charges* are to be passed on to customers and any adjustments to tariffs resulting from over or under recovery of those charges in the previous *regulatory year*.."

AusNet Services proposes that the True-Up Mechanism for DUoS, Designated Pricing Proposal and Jurisdictional Pricing components include the estimated T-1 costs and revenues and then for T-2 the residual differences to complete the True-Up. The following table provides a Designated Pricing Proposal example.

Table 13.1: Designated Pricing Proposal example

	Years t -1 & t-2	Year t (forecast)
(A) Revenue from designated pricing proposal charges (DPPC)	40077	33241
+ DPPC Revenue t-2	41000	n/a
- DPPC Revenue t-2 estimated in t-1	40300	n/a
+ DPPC Revenue estimate t-1	39377	n/a
(B) Less DPPC related payments for regulatory year =	34846	33241.45
+ DPPC charges paid to TNSP t-2	33693	38000
- DPPC charges t-2 estimate to TNSP in t-1	33689	n/a
+ DPPC charges estimat to TNSP t-1	33789	n/a
+ Avoided TUoS payments t-2	558	700
- Avoided TUoS payments t-2 estimate in t-1	557	n/a
+ Avoided TUoS payments estimate t-1	559	n/a
+ Inter–distributor payments t-2	13	34
- Inter–distributor payments t-2 estimate in t-1	11	n/a
+ Inter–distributor payments estimate t-1	10	n/a
+ DPPC revenue under/over recovery approved t-1	481	-5492.55
(A minus B) Under/over recovery of revenue for regulatory year	5231	0
DPPC unders and overs account		
Nominal WACC t–1 (per cent)	5.00%	
Opening balance	n/a	-5492.55
Under/over recovery of revenue for regulatory year	5231	5492.55
Interest on under/over recovery for 2 regulatory years	262	n/a
Closing balance	5493	0c

Source: AusNet Services

5 Rules, Clause 16.18.2(b)(6).