



Final decision

SP AusNet transmission determination

2008-09 to 2013-14

January 2008

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Overview

Under the National Electricity Law (NEL) and the National Electricity Rules (NER), the Australian Energy Regulator (AER) is responsible for the economic regulation of monopoly transmission services in the National Electricity Market (NEM).

SP AusNet submitted its revenue proposal, proposed negotiating framework and proposed pricing methodology for the 1 April 2008 to 31 March 2014 regulatory control period on 28 February 2007, seeking revenues of \$2 951.18m.¹

The AER's draft decision, published on 31 August 2007, allowed revenues for SP AusNet of \$2 762.26m increasing from \$410.56m in 2008-09 to \$513.25m.

This final decision allows revenues for SP AusNet that increase from \$453.35m in 2008-09 to \$541.82m in 2013-14. The revenues allowed in this final decision provide for increasing investment in SP AusNet's transmission network as assets reach the end of their useful lives and their condition declines, so that reliability and security of supply can be maintained throughout the forthcoming regulatory control period. The revenues also reflect a significant increase in the cost of capital (particularly debt) since SP AusNet lodged its proposal in early 2007. This reflects prevailing conditions in financial markets stemming from the sub-prime crisis in the US and other factors.

The main areas of difference between the AER's draft decision and this final decision result from a significant quantity of new analysis presented by SP AusNet in support of its revised capex and opex forecasts. While the AER is unable to approve the proposed forecasts in total, this additional information has to some extent allayed the AER's concerns in relation to SP AusNet's original proposal. The AER is now satisfied that at least some elements of the forecasts originally proposed but rejected in the draft decision meet the requirements of the NER.

Past capital expenditure (past capex) – The draft decision approved past capex of \$476.8m, and noted that the AER expected observable improvements in project management and documentation going forward. SP AusNet's revised proposal includes past capex of \$464.4m, reduced to reflect actual levels of expenditure in 2006-07 which were not available when its original proposal was submitted, and additional efficiencies captured in the remaining months of the current regulatory control period. The AER has accepted this lower amount. The approved past capex has been rolled into SP AusNet's regulatory asset base (RAB).

Forecast capital expenditure (forecast capex - \$2007-08) - The draft decision approved a total capex forecast of \$679.04m. SP AusNet's revised proposal includes a total capex forecast of \$860.42m over the regulatory control period, almost equivalent in total to that in its original proposal. The AER has rejected this forecast and approved a lower capex forecast of \$771.07m. This is a reduction of \$89.35m, or 10.4%, from the revised proposal, but an increase of \$86.88m from the draft decision.

Operating expenditure (opex - \$2007-08) – The draft decision approved a total opex forecast of \$929.49m. SP AusNet's revised proposal included a total opex forecast of

¹ All figures in this Overview are in nominal dollars unless stated otherwise.

\$1082.36 over the regulatory period. The AER has rejected this forecast and approved a lower opex forecast of \$979.29m. This is a reduction of \$103.08m, or 9.52%, from the revised proposal, but an increase of \$49.79m (5.36%) from the draft decision.

This final decision provides for a higher cost of capital than was evident at the time of SP AusNet's original submission in February 2007, as certain WACC parameters are only determined at the final decision stage. In particular, a debt risk premium of 2.11%, has been determined which is relatively high compared to past regulatory decisions. The AER notes that the debt risk premium has increased by 78% from the time SP AusNet submitted its original proposal in February 2007. This significant increase appears driven by the repricing of financial risk that has occurred in many financial markets around the world following the 'sub-prime crisis' in the US. This higher regulatory cost of debt is reflective of the higher cost of borrowing which currently prevails, and which would be faced by a benchmark TNSP. This is the basis on which the WACC is determined.

The increase in the cost of debt (and equity) subsequent to SP AusNet lodging its original proposal is reflected in the MAR approved in this final decision, which is around \$127.9m (nominal) higher, in total, over the six year (2008-14) regulatory control period, than it would have been using a WACC determined at the time SP AusNet submitted its original proposal.

The transmission price impact of the MAR for SP AusNet approved in this final decision is expected to be a nominal per MWh "price" of \$7.54 in 2007-08, increasing by an average of 5.08% per year to \$10.15 in 2013-14. In terms of real end user prices, the average residential customer is expected to face an increase of around 0.88% in 2008-09, and increases of 0.07% per year thereafter as a result of this decision. For a typical larger user, these increases are expected to be approximately 2.89% in 2008-09, and 0.23% each year thereafter.

Summary

The Australian Energy Regulator (AER) is responsible for the economic regulation of monopoly transmission services in the National Electricity Market (NEM). These functions were conferred on the AER by the National Electricity Law (NEL) and the National Electricity Rules (NER) on 1 July 2005.

The AER must make transmission determinations for Transmission Network Service Providers (TNSPs) in accordance with the NER in respect of prescribed and negotiated transmission services. This report provides the AER's final decision on the transmission determination that will apply to SP AusNet for the forthcoming regulatory control period.

Introduction

The ACCC determined SP AusNet's current revenue cap for the period from 1 January 2003 to 31 March 2008 in accordance with its responsibilities under the National Electricity Code (NEC). The AER assumed responsibility for regulating electricity transmission services provided by SP AusNet on 1 July 2005. SP AusNet's proposal and this final decision are the first to be made in accordance with chapter 6A of the NER, which took effect on 16 November 2006.

Part E of chapter 6A sets out the procedure that applies for the purposes of the AER making a transmission determination. The key stages of the process leading to the release of this final decision are:

- **Proposal** - SP AusNet submitted its original revenue proposal, proposed negotiating framework and pricing methodology, and supporting information to the AER on 28 February 2008, 13 months prior to the end of its current regulatory control period. The information contained in SP AusNet's proposal was assessed against the requirements of chapter 6A of the NER and the first proposed submission guidelines, and found to be non-compliant in a number of respects. On 30 April 2007, additional information was provided in response to a formal notice issued by the AER under cl. 6A.11.1 of the NER.
- **Consultation** - The AER requested submissions on SP AusNet's proposal and the proposed negotiated transmission service criteria for SP AusNet prior to the release of its draft decision. Submissions on SP AusNet's proposal were received, from Transend, the Energy Users Coalition of Victoria and the Energy Users Association Australia. Submissions on the proposed negotiating criteria were received from VENCORP and the Southern Generators.
- **Draft decision** - The AER released its draft decision on 31 August 2007. The AER held a pre-determination conference on Tuesday 11 September 2007 for the purposes of explaining the AER's draft decision and hearing oral submissions from interested parties.
- **Revised proposal** - On 12 October 2007 SP AusNet submitted a revised revenue proposal, revised proposed negotiating framework and revised proposed pricing methodology in response to the AER's draft decision.

- **Consultation** - The AER requested submissions on its draft decision and on SP AusNet's revised proposal. Submissions were received from Transend, TransGrid, ElectraNet, the Energy Users Coalition of Victoria, and the Energy Users Association of Australia.

The AER engaged technical consultants to provide independent advice on SP AusNet's revised revenue proposal:

- PB Strategic Consulting (PB) was engaged to provide independent engineering advice on SP AusNet's forecast capex, forecast opex and service performance targets. PB has worked extensively with Australian regulatory bodies, providing strategic management services in the utility, infrastructure and energy sectors, focusing on areas of industry and regulatory reform, energy economics, strategic planning, project finance, valuations, and advice on mergers and acquisitions.
- Nuttall Consulting was engaged to provide expert engineering advice on SP AusNet's forecast capex. Nuttall Consulting specialises in regulation and business strategy in the energy and utility sector, and offers over 10 years of consultancy experience in this field, having worked with governments, industry regulators and competition authorities, industry participants and investors, in numerous countries.

The consultants' reports have been published with this final decision.

This final decision takes into account information and submissions provided in each stage of the process outlined above.

Components of final decision

The key components of this final decision are:

- a revenue determination for SP AusNet in respect of prescribed transmission services
- a determination relating to SP AusNet's negotiating framework for negotiated transmission services
- a determination specifying the negotiated transmission service criteria that apply to SP AusNet and
- a determination specifying the pricing methodology for prescribed transmission services to apply to SP AusNet.

The AER's consideration of each of these components is summarised below. Further detail is provided in the chapters that follow.

Revenue determination – prescribed transmission services

Past capex

The current transmission determination applying to SP AusNet provides that an ex post prudency assessment of capex was to be conducted at the conclusion of the

current regulatory control period. The tests to be applied in this ex post assessment are those set out in Appendix B of the Statement of Regulatory Principles (SRP) approved by the ACCC, and adopted by the AER in 2005, which provide that only expenditure which is determined by the AER to be prudent and efficient will be rolled into SP AusNet’s RAB at the commencement of the forthcoming regulatory control period.

In its draft decision, the AER accepted most of SP AusNet’s past capex as prudent and efficient, and determined that an amount of \$476.8m would be rolled into the opening RAB.

The AER made two minor downward adjustments to SP AusNet’s proposed past capex allowance of \$478.5m:

- the removal of a \$0.43m contingency allowance on the Redcliffs Terminal Station (RCTS) refurbishment and
- a reduction of \$1.34m to adjust for incorrect cost allocation across categories of non-network capex identified in the course of PB’s review.

SP AusNet’s revised proposal submits that \$464.4m (nominal) of capex from the current regulatory control period should be rolled into its RAB. SP AusNet states that its revised proposal, in effect, implements the AER’s draft decision with updated capex forecasts, and contains a full year of audited costs for 2006–07. SP AusNet also adjusted figures for non network capex. With the revised calculations for past capex, SP AusNet has reduced its overall past capex by \$4.5m, from \$478.5m (the figure contained in SP AusNet’s original proposal) to \$464.4m.

The AER considers that SP AusNet’s revised proposed past capex of \$464.4 meets the regulatory requirements for incorporation into its RAB at the commencement of the forthcoming regulatory control period.

Table S.1 AER’s final decision – Total prudent past capex (\$m, nominal)

	2003 [^]	2003-04	2004-05	2005-06	2006-07	2007-08*	WIP	Total
SP AusNet’s revised proposal	29.3	49.5	66.3	96.1	102.5	103.8	17.0	464.4
AER’s final decision	29.3	49.5	66.3	96.1	102.5	103.8	17.0	464.4

Source: SP AusNet; AER analysis

Notes: [^] stub period from 1 January to 31 March 2003

* forecasts

Capex is as-commissioned (excluding WIP), including FDC

Capex includes half-WACC adjustment.

Regulatory asset base (RAB)

The AER’s draft decision determined the value of SP AusNet’s RAB as at 1 April 2008 to be \$2 203.5m. This was 0.88% less than SP AusNet’s proposed opening RAB of \$2 222.9m.

In its draft decision the AER made the following adjustments to SP AusNet's original proposed RAB calculations:

- minor reductions in the amount of prudent capex claimed as a result of an ex post prudency review
- adjustments to the CPI measure used to index the RAB over the period
- a small reduction to the amount of non-contestable assets to be rolled into the RAB
- removal of the benefit (i.e. the return on capital) associated with capex overestimated for the nine months to 31 December 2002
- addition of the return on prudent overspend for the period (which was previously combined with the benefits of the capex overestimate for 2002).

SP AusNet accepted each element of the AER's draft decision in relation to the calculation of its opening RAB, but has provided revised claims for prudent net capex in 2006-07 and 2007-08 (which are \$1.0m and \$5.0m lower than the AER's draft decision, respectively), and work in progress (\$5.2m lower). SP AusNet proposes an opening RAB of \$2 190.8m.

The AER has reviewed SP AusNet's revised capex data for the current regulatory period and finds this to be prudent. The AER found a minor omission in SP AusNet's capex data for 2007-08, which, when corrected, results in a \$0.4m increase to its opening RAB value. The AER's calculation of SP AusNet's RAB is contained in table S.2.

Table S.2: AER's final decision – RAB as at 1 April 2008 (\$m, nominal)

Year (1 April to 31 March)	1 Jan to 31 Mar 2003	2003-04	2004-05	2005-06	2006-07	2007-08
Opening RAB	1,788.3	1,813.0	1,831.0	1,867.2	1,935.0	2,013.8
Indexation	13.3	43.7	48.9	53.9	63.5	52.1
Actual prudent net capex	29.6	51.7	69.1	100.3	107.0	109.1
Inflation adjusted depreciation	-18.1	-77.4	-81.8	-86.3	-91.7	-97.6
Closing RAB	1,813.0	1,831.0	1,867.2	1,935.0	2,013.8	2,077.3
Roll in of non-contestable assets						115.8
Add compounded return on estimated capex						8.1
Removal of benefit associated with estimated capex						-27.1
Work in progress						17.0
Opening RAB 1 April 2008						2,191.2

Forecast capex

The AER's draft decision rejected SP AusNet's proposed forecast capex of \$855.26m (as incurred, \$2007-08), and substituted an allowance of \$679.04m (as incurred, \$2007-08) – a reduction of \$176.23m or around 21%.

In its revised proposal SP AusNet has included a significant volume of additional information in response to matters raised in the draft decision. In doing so it seeks to justify the reinstatement of the majority of its originally proposed forecast capex allowance, and in particular to address the concerns raised by the AER in relation to the lack of economic analysis underpinning its proposed capex forecast. The AER has assessed this new and updated information in conjunction with the information provided by SP AusNet in and as part of its original revenue proposal.

This final decision rejects SP AusNet's revised proposed capex allowance of \$860.42m (as incurred, \$2007-08), and substitutes an allowance of \$771.07m (as incurred, \$2007-08) – a reduction of \$89.35m or 10.4%.

The increase of \$86.88m from the AER's draft decision is mainly attributable to new and updated information provided to the AER by SP AusNet. In several instances, the new and updated information presented by SP AusNet in its revised proposal substantially contradicts, or seeks to correct, information provided in its original proposal – information upon which the AER relied in making its draft decision. In particular the AER notes that its draft decision on the Richmond terminal station

(RTS) redevelopment and transformer replacements were both, in part, based on erroneous or incomplete information from SP AusNet which has subsequently been corrected and incorporated into this final decision.

SP AusNet has in its revised proposal prepared economic analysis, of varying detail, to support the reinstatement of elements of its original proposed forecast capex allowance. Notwithstanding that this should have been provided by SP AusNet as part of its original proposal, the AER in most instances supports the approach and methodology now adopted by SP AusNet in the economic analysis used to support its revised proposal. However, in some cases the results presented by SP AusNet are highly questionable. A number of proposed projects are still not supported by a robust and conclusive economic analysis, with all alternatives considered. It appears that in these cases SP AusNet has adopted a philosophy of identifying the least cost option to undertake its pre-defined work program, without first seeking to justify the proposed work program on its merits as prudent and efficient. In such cases, the AER has not accepted SP AusNet's revised proposed capex.

SP AusNet's revised proposal implements the AER's draft decision in relation to a number of forecast capex projects, including the replacement of SCADA systems, the Geelong terminal station (GTS) refurbishment, and vehicle replacements. SP AusNet also accepts the AER's draft decision on labour and materials cost escalations.

By far the most significant change from the AER's draft decision relates to SP AusNet's proposed RTS redevelopment project. This final decision approves an allowance that is around \$62m higher than that approved in the AER's draft decision. On the basis of the significant amount of new and updated information presented in SP AusNet's revised proposal – particularly regarding the risks posed by subsidence within the 66kV switchyard and the condition of the transformers – the AER accepts PB's advice that an integrated RTS redevelopment project reasonably reflects prudent and efficient capex in accordance with the NER.

As in the draft decision, the key issue impacting SP AusNet's forecast capex proposal relates to the efficient timing of asset replacements based on their condition. Despite additional information provided by SP AusNet in its revised proposal, the AER is unable to accept SP AusNet's arguments regarding 'fleet management' of its large 66kV LG4C fleet of circuit breakers. In the AER's view, this amounts to an age-based replacement strategy, and does not appear to be adequately informed by the current condition of the assets. Notwithstanding this assessment, taking into account advice from Nuttall Consulting, the AER is now satisfied that there is a justifiable need to replace at least some 66kV assets as part of a number of station rebuild projects, predominantly for construction sequencing and compliance reasons.

On the basis of the additional information provided by SP AusNet, the AER maintains its draft decision to reject a number of elements of SP AusNet's revised proposal.

The AER has made a downward adjustment of \$25.90m to SP AusNet's proposed forecast capex for its transformer replacement program, to remove an allowance for the replacement of transformers at Bendigo, Dederang and in the Melbourne metropolitan area. The AER accepts PB's view that SP AusNet has not properly considered the opportunities to efficiently utilise spare assets released from elsewhere

on its network, which can significantly reduce the consequences of failure and therefore the benefits of replacement capex.

The AER has also rejected SP AusNet's proposed targeted replacement of post-type current transformers (CTs). SP AusNet's revised proposal presented a significant amount of economic analysis to justify replacement of CTs with a life expectancy of ten years or less. However after correcting for some errors and incorporating some reasonable assumptions into the analysis, the AER is not satisfied of either the efficiency or prudence of such early replacement of CTs. The AER has made a downward adjustment of \$7.12m to reflect this assessment.

In response to the AER's draft decision, SP AusNet engaged consultants Evans & Peck (E&P) to identify and quantify risks associated with each of its station rebuild projects, and recommend an appropriate contingency allowance. After considering the views of E&P, and on the basis of PB's advice, the AER is not satisfied that SP AusNet's proposed contingency allowance reasonably reflects capex likely to be incurred by a prudent and efficient TNSP in the circumstances of SP AusNet. The AER, however, accepts in principle that certain unquantifiable risks need to be captured in SP AusNet's forecast capex allowance for complex station rebuild/refurbishment projects, and has approved a contingency allowance \$9.52m (around 2.7%) to reflect this assessment. However, the AER reiterates that the total forecast capex approved is an allowance only, and is not tied to a fixed, project-specific, work program. Within the approved allowance, SP AusNet retains the discretion regarding the allocation and expenditure of capex, and is expected to be responsive to changing conditions in order to meet the prescribed capex objectives.

SP AusNet's original and revised capex proposals, and the AER's draft and final decisions on capex are summarised in the table below.

Table S.3: AER's draft and final decisions – forecast capex (\$m, 2007-08)*

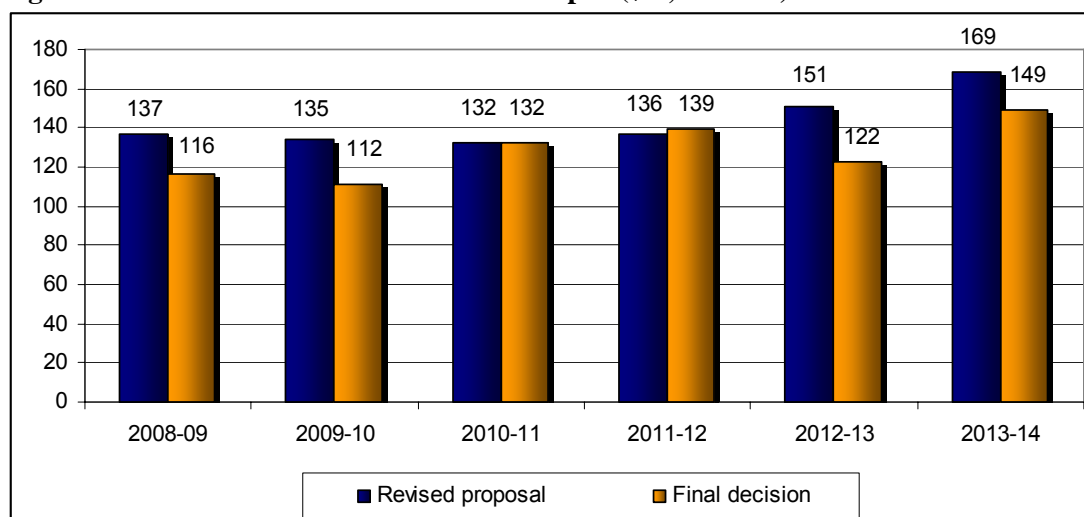
	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's original proposal	128.02	147.70	140.14	140.85	139.69	158.87	855.26
AER's draft decision	104.95	116.68	131.40	109.39	92.97	123.67	679.04
SP AusNet's revised proposal	137.18	134.53	132.47	136.35	151.05	168.85	860.42
<i>AER's project-specific adjustments</i>							
Refurbishment of HWPS	-0.01	-0.75	-0.02	-0.01	-0.01	0.00	-0.81
Redevelopment of RTS	-1.87	-2.86	0.00	-2.07	-12.89	-10.82	-30.50
Transformer replacements	-3.50	-5.40	-1.00	-3.60	-7.90	-4.50	-25.90
Replacement of SCADA systems	2.26	2.01	1.51	0.48	-0.59	1.53	7.20
Response capability undefined works	-0.92	-0.92	-0.92	-0.92	-0.92	-0.90	-5.50
Replacement of CTs	-1.68	-3.28	-2.48	-1.04	-0.09	1.45	-7.12
Replacement of 500kV CBs	-1.40	-0.70	0.00	0.00	0.00	0.00	-2.10
Replacement of 66kV switch-bays	-1.27	-1.56	-0.14	-0.02	0.00	0.00	-2.98
Redevelopment of BLTS	0.00	0.00	-0.43	-2.43	-1.37	0.00	-4.23
Refurbishment of TTS	-0.49	-3.04	-2.01	0.00	0.00	0.00	-5.54
Redevelopment of RWTS	-0.39	-0.30	-0.02	-0.04	-0.07	-0.22	-1.03
Refurbishment of GNTS	0.00	0.00	0.00	-0.02	-2.66	-0.66	-3.34
Refurbishment of KTS	-0.55	-4.10	-0.02	-0.25	-0.52	0.00	-5.45
Refurbishment of GTS	-1.48	2.43	2.62	0.00	0.00	0.00	3.56
Refurbishment of HWTS	0.00	-0.02	-0.35	-0.73	0.00	0.00	-1.11
<i>AER's other adjustments</i>							
Unexplained template discrepancies	-1.50	0.00	0.00	0.00	0.00	-0.07	-1.57
Modelling adjustments**	-7.89	-4.53	2.73	13.69	-1.73	-5.21	-2.94
AER's total adjustment – final	-20.69	-23.03	-0.52	3.04	-28.76	-19.40	-89.35
AER's final decision	116.49	111.50	131.95	139.39	122.29	149.45	771.07

Source: SP AusNet; AER analysis

* Capex as incurred

** These final adjustments (including for the AER's labour & materials escalations and actual 2006-07 CPI) have been confirmed by SP AusNet.

Figure S.1: AER’s final decision – forecast capex (\$m, 2007-08)*



Source: SP AusNet; AER analysis

* Capex as incurred

Cost of capital

WACC

The NER prescribes the value of the equity beta (1.00), market risk premium (6.00%), and the level of gearing (60%). For the two remaining parameters, the nominal risk free rate and the debt risk premium, no value is set, but the methodology that the AER must follow is prescribed by the NER.

Following the prescribed methodology for the nominal risk free rate, and using the agreed averaging period (10 day moving average ending 14 December 2007), the AER determines the nominal risk free rate applicable to SP AusNet’s revenue determination to be 6.09%.

The AER considers, and SP AusNet agrees, that the debt risk premium should be calculated over the same averaging period as the nominal risk free rate (10 day moving average ending 14 December 2007). The AER disagrees with SP AusNet’s suggestion of calculating the debt risk premium by averaging data from multiple sources (Bloomberg and CBA Spectrum – adjusted for an alleged bias). Previously the AER has relied on the 10 year BBB fair yield published by Bloomberg. This benchmark is currently unavailable. In its absence, the AER considers extrapolating the 8 year Bloomberg BBB fair yield out to a 10 year benchmark, by adding the spread between the 8 and 10 year Bloomberg A fair yields, complies with the requirements of the NER and provides the best available estimate of a 10 year BBB+ benchmark. Using these inputs and the methodology prescribed by the NER, the AER determines the debt risk premium applicable to SP AusNet’s revenue determination to be 2.11%.

Using these derived parameter values and the prescribed parameter values outlined above, the AER determines the nominal vanilla WACC applicable to SP AusNet’s revenue determination to be 9.76%.

The relatively high cost of debt provided for in this final decision, and its impact on SP AusNet's maximum allowed revenue, is discussed in chapter 8 of this final decision, and below in the MAR section of this summary.

Table S.4 AER's final decision – Cost of capital

Parameter	Prescribed value	SP AusNet's revised proposal	AER's final decision
Nominal risk free rate	-	6.09%	6.09%
Equity beta	1.00	-	1.00
Market risk premium	6.00%	-	6.00%
Equity funding	40.00%	-	40.00%
Debt risk premium	-	Unavailable*	2.11% (211 basis points)
Debt funding (i.e. gearing)	60.00%	-	60.00%
Nominal cost of equity	-	12.09%	12.09%
Nominal cost of debt	-	Unavailable*	8.20%
Nominal vanilla WACC	-	Unavailable*	9.76%

Source: SP AusNet², AER analysis

*The debt risk premium stated in SP AusNet's revenue proposal was provided on an indicative basis and solely for the purposes of the revenue proposal. SP AusNet's suggestion was for the debt risk premium to be calculated based partly on a 10 year Bloomberg BBB fair yield cannot not be implemented, as this index has been suspended.

Forecast inflation

The AER does not agree with SP AusNet's suggested inflation forecast of 2.5%.

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, which extend out two years, and to adopt the mid-point of the RBA's target inflation band beyond that period (i.e. 2.5%). An implied 10 year forecast has been derived, consistent with past regulatory practice, from the RBA's inflation forecasts for 2008 and 2009 and an assumption of the 2.5% mid point for a further 8 years. This produces a best estimate of 10 year forecast inflation of 2.59%, based on a simple average.

Forecast opex

The AER's draft decision rejected SP AusNet's proposed forecast opex of \$1034.34m (\$2007-08), and substituted an allowance of \$929.49m (\$2007-08) – a reduction of \$104.84m or 10.14%.

² SP AusNet, *Electricity transmission revised proposal 2008-09 – 2013-14*, 12 October 2007.

SP AusNet's revised proposal implements some of the adjustments from the AER's draft decision. In other areas SP AusNet has either reinstated its original proposal, or submitted a new or revised proposal with new supporting information. This final decision rejects SP AusNet's revised proposed opex allowance of \$1082.36m (\$2007-08), and substitutes this with an allowance of \$979.29m (\$2007-08) – a reduction of \$103.08m or 9.52%.

The increase of \$49.79m (\$2007-08) in this final decision from the AER's draft decision is mainly attributable to new information provided to the AER by SP AusNet, which includes, in several instances, corrections to erroneous information SP AusNet had provided to the AER in its original proposal, and on which the AER had relied in making its draft decision. In particular, the AER notes that its draft decision on management fees and self-insurance was, in part, based on erroneous information from SP AusNet which has subsequently been corrected, and incorporated in this final decision.

SP AusNet's revised proposal essentially implements the AER's draft decision in relation to asset works, the capex / opex trade-off (routine maintenance), insurance (routine maintenance), equity raising costs associated with its forward capex program, and debt raising costs. Whilst accepting these components of SP AusNet's revised proposal, the allowances for these components in this final decision differs from those in SP AusNet's revised proposal in some instances, due to interdependencies between these allowances and other areas of this final decision where the AER has not accepted SP AusNet's revised proposal.

On the basis of new information provided to the AER in SP AusNet's revised proposal, the AER now accepts SP AusNet's (non-easement) land tax forecast (routine maintenance), which SP AusNet reinstated in its revised proposal with an updated base year. The AER also accepts SP AusNet's revised maintenance forecasts for its north west region, and (subject to the correction of a minor error) the revised allowance for equity raising costs associated with its initial capital base, which were both supported by new information.

However, the AER does not accept a number of elements of SP AusNet's revised proposal.

The AER is not satisfied that that portion of the management fees (corporate) paid by SP AusNet to its management company, a related party, that are in turn paid as management fees to Singapore Power International, are efficient or prudent costs required to meet the opex objectives prescribed in the NER. The AER has made a corresponding downwards adjustment of \$4.17m to SP AusNet's proposed allowance for management fees, to provide an allowance of \$43.74m.

The AER has also rejected SP AusNet's revised self-insurance proposal, which does not reflect an efficient and prudent level of self-insurance for power and current transformer failure risk when SP AusNet's forecast capex program, risk modelling and historical failure rates are taken into account. The AER has made a corresponding downwards adjustment of \$2.57m to SP AusNet's proposed allowance for self-insurance, to provide an allowance of \$12.55m.

The AER does not consider that SP AusNet's revised proposed forecast of rebates payable under the availability incentive scheme (AIS) in its network services agreement with VENCORP reflects a realistic expectation of the likely level of rebates SP AusNet will incur in the forthcoming regulatory control period. Taking into account SP AusNet's past performance and forecast capex program, the AER has made a downwards adjustment of \$4.35m to provide a substitute allowance of \$16.74m.

The main difference between this final decision and SP AusNet's revised proposal is in regard to easement tax. The AER's final decision on the easement tax forecast is \$520.85m (\$2007-08), or \$90.55m less than SP AusNet's revised proposal of \$611.40m (\$2007-08), which SP AusNet increased significantly between its original and revised proposals.

Excluding easement tax, this final decision provides for an opex allowance of \$458.44m (\$2007-08). This allowance is \$12.53m (\$2007-08) less than the total opex, excluding easement tax, in SP AusNet's revised proposal, and \$45.20m (\$2007-08) more than that in the AER's draft decision (excluding easement tax).

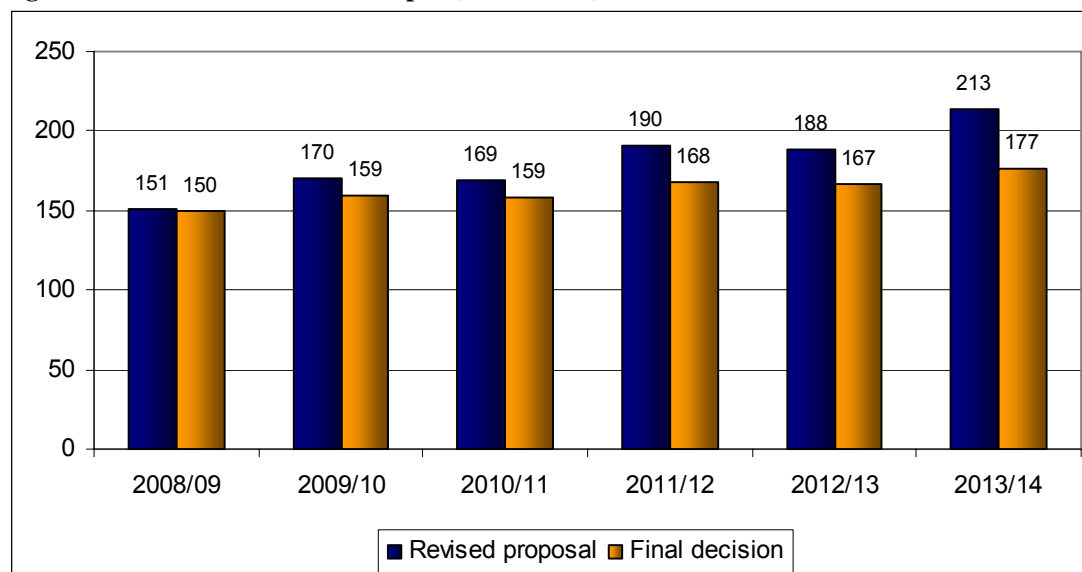
SP AusNet's original and revised opex proposals, and the AER's draft and final decisions on opex are summarised in the table below.

Table S.5 AER's draft and final decisions – Opex (2007-08 \$m)

	SP AusNet's original proposal	AER's draft decision	SP AusNet's revised proposal	AER's adjustment	AER's final decision
Asset works	90.26	85.56	84.86	-0.12	84.74
Routine maintenance	206.63	194.96	208.8	-0.14	207.94
Corporate	117.71	102.52	117.71	-4.34	113.37
Rolled-in assets opex	11.40	6.48	7.81	-0.83	6.99
Inventory	-	0.24	0.24	Nil	0.24
Controllable opex	426.00	389.76	418.70	-5.43	413.27
Self-insurance	15.24	8.37	15.13	-2.57	12.55
Equity raising costs	11.81	0.00	9.31	-0.07	9.24
Debt raising costs	10.30	6.58	6.75	-0.10	6.64
Rebates	40.13	8.52	21.09	-4.35	16.74
Easement land tax	530.85	516.25	611.40	-90.55	520.85
Other opex	608.34	516.25	663.67	-97.65	566.02
Total	1 034.34	929.49	1082.36	-103.08	979.29

Source: SP AusNet, AER analysis

Figure S.2 AER's final decision – Opex (2007-08 \$m)



Source: SP AusNet, AER analysis

Service target performance incentive scheme

The AER's draft decision rejected a number of elements of SP AusNet's proposed application of the service target performance incentive scheme (STPIS):

- Necessary adjustments were made to SP AusNet's proposed service performance targets to reflect the impact of SP AusNet's forecast capex on expected service performance.
- The AER rejected SP AusNet's application of asymmetric caps and collars to performance targets, as this provided a greater benefit for exceeding the target than penalty for falling short of the service performance target, and applied symmetric caps and collars to prevent variations in performance resulting in significant revenue swings due to the cap/collar being exceeded. For parameters where applying symmetric caps and collars would result in the cap being above 100% performance, the AER set the cap at one standard deviation above the target.
- Of the eight exclusions from the scheme proposed by SP AusNet the AER accepted two, amended one, and rejected five.

The AER's draft decision accepted the weightings proposed by SP AusNet, which place half of the revenue at risk against parameters related to security of supply and allocate the remainder equally to parameters related to reliability of supply and operational response.

SP AusNet's revised proposal implements the AER's draft decision in relation to targets for loss of supply parameters and average outage duration parameters. A cap of one week (168 hours) will apply to individual events for the purpose of calculation of performance against average outage duration targets. The revised proposal also recognises the AER's approval of SP AusNet's proposed weightings, and makes no further changes to these. These elements of the revised proposal have been approved in this final decision.

However, SP AusNet has varied the allocation of outage hours into peak, intermediate and off-peak periods in the draft decision calculation of availability parameter targets by calculating the percentage split between peak, intermediate and off-peak outages as a percentage of historical capex outages only. SP AusNet's revised proposal also challenges the AER's draft decision on caps and collars and exclusions, maintaining in each instance the position taken in its original proposal.

The AER accepts SP AusNet's revised availability parameter targets, subject to a minor adjustment to include outage hours associated with SP AusNet's proposed exclusion of line up-ratings, interconnector upgrades and switchyard busbar up-ratings, which has been rejected by the AER.

As in its draft decision, the AER rejects SP AusNet's proposal to apply asymmetric caps and collars to its performance targets, and maintains the position taken in the draft decision that both caps and collars be set as far as practicable at two standard deviations from the target. This methodology allows for natural variations in performance that will balance incentives and encourage improvement without risking large losses or gains due to statistical outliers.

The AER maintains the position taken in its draft decision on exclusions, and does not consider that SP AusNet's revised proposal presented any new information that would cause the AER to alter its position.

Table S.6 below sets out the STPIS values and weightings that will apply to SP AusNet for the forthcoming regulatory control period.

Table S.6 AER's final decision — SP AusNet's service target performance incentive scheme values and weightings

Parameters	Collar	Target	Cap	Weighting
Availability parameters	%	%	%	%MAR
Total circuit	98.41	98.73	99.05	0.20
Peak critical	98.62	99.39	99.78	0.20
Peak non-critical	98.83	99.40	99.69	0.05
Intermediate critical	97.29	98.67	99.36	0.25
Intermediate non-critical	97.57	98.73	99.31	0.25
Loss of supply events		No.		%MAR
>0.05 min per annum	9	6	3	0.125
>0.3 min per annum	4	1	0	0.125
Average outage duration		Minutes		%MAR
Lines	667	382	98	0.125
Transformers	556	412	268	0.125

Maximum allowed revenue

SP AusNet's revised proposal included an X factor of -4.34% and an expected total revenue cap of \$2 999.51m (nominal). SP AusNet's proposed building block requirement and maximum allowed revenue (MAR) are outlined in table S.7.

Table S.7: SP AusNet's revised proposal – building block calculation and expected MAR (\$m, nominal)

Year ending 31 March	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Return on capital	193.88	201.91	209.41	216.50	223.83	232.57
Economic depreciation	53.94	60.60	66.73	72.00	77.04	70.87
Opex (in cl. easement land tax)	155.26	178.61	181.98	209.97	213.07	247.46
Glide-path	8.66	7.06	5.46	3.73	1.91	0.00
Tax liability	15.39	16.04	16.53	16.70	17.04	15.94
Building block requirement	427.14	464.21	480.11	518.90	532.88	566.84
MAR	419.90	449.06	480.25	513.60	549.28	587.43

Source: SP AusNet PTRM submitted 12 October 2007 with amendments by the AER.

As a result of various changes detailed above, particularly to SP AusNet’s proposed capex and opex forecasts, the AER has determined the following annual building block revenue requirement, estimated total revenue cap and indicative MAR for each year of the regulatory control period as shown in table S.8. The AER has applied an X factor of -12.55% in 2008-09 and -1.01% for 2009-10 to 2013-14, which results in an expected total revenue cap of \$2 979.21m (nominal).

Table S.8: AER’s final decision: building block calculation and expected MAR (\$m, nominal)

Year ending 31 March	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Return on capital	213.84	220.79	226.82	234.81	243.47	250.10
Economic depreciation	52.15	59.40	65.23	70.70	75.47	69.50
Opex (incl. easement land tax)	153.86	167.44	171.23	186.01	189.65	206.13
Glide-path	8.66	7.07	5.47	3.74	1.92	-
Tax liability	15.69	16.29	16.73	16.92	17.32	16.10
Building block requirement	444.20	470.98	485.48	512.19	527.82	541.82
MAR	453.35	469.80	486.86	504.53	522.84	541.82

Source: AER

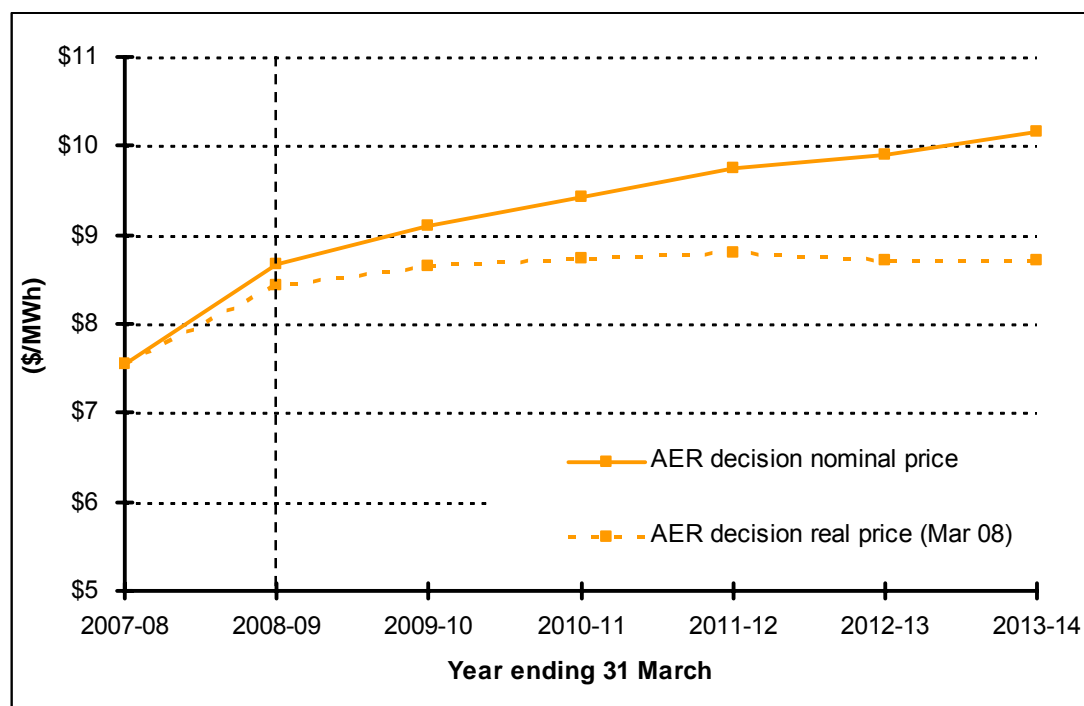
The similarities between the total revenue cap in SP AusNet’s revised proposal and the AER’s final decision mainly reflect the following offsetting factors:

- the reductions made by the AER to SP AusNet’s proposed allowances for capex and opex
- increases in the return on capital allowance due to changes in the risk free rate and cost of debt since SP AusNet’s original proposal.³

The AER’s determination results in a nominal MAR per MWh “price” of \$7.54 in 2007-08, increasing by an average of 5.08% per year to \$10.15 in 2013-14. This compares to SP AusNet’s proposal which resulted in an annual average nominal price increase of 6.50% equating to a per MWh price of \$11.00 in 2013-14. In real terms, the expected MAR per MWh resulting from this determination increases at an average annual rate of 2.42% over the period, compared to 3.90% under SP AusNet’s revenue proposal. The real and nominal price paths implied by the AER’s final decision, are illustrated in figure S.3.

³ The relevant WACC parameters were not updated in the AER’s draft decision in August 2007 as these components are finalised only at the final decision stage.

Figure S.3 AER's final decision – implied transmission price path from 2007-08 to 2013-14 (\$/MWh)



Source: AER.

Comments on cost of debt

The AER notes that the cost of debt in this final decision, which comprises the risk free rate and debt risk premium, is significantly higher than that applied in SP AusNet's revised proposal. The estimates in SP AusNet's original and revised proposals were provided on a purely indicative basis, with the intent that these would be updated by the AER. Standard regulatory practice is to base the risk free rate and debt risk premium on financial data released as close as practicably possible to the start of the regulatory control period, and that practice has been applied in this final decision.

Using the methodology prescribed in the NER, from the time SP AusNet submitted its original proposal in February 2007 the debt risk premium has increased from 1.18% to 2.11% – an increase of close to 100 basis points, or 78%. This significant increase appears driven by the repricing of financial risk that has occurred in many financial markets around the world following the 'sub-prime crisis' in the US.

Over the same period the risk free rate has increased from 5.78% to 6.09% - an increase around 30 basis points or 5.52%. This smaller increase in the risk free rate appears driven by the increase in the official cash rate determined by the RBA, which has increased by 50 basis points (6.25%-6.75%) since SP AusNet's original proposal. The increase in the risk free rate has also increased the cost of equity.

The combined effect of these increases, particularly the increase in the debt risk premium, has resulted in a cost of debt, and subsequently a WACC, that is materially higher than that allowed in previous regulatory decisions. This higher regulatory cost of debt is reflective of the higher cost of borrowing which currently prevails, and

which would be faced by a benchmark TNSP. This is the basis on which the NER require the WACC to be determined.

The increase in the cost of debt (and equity) subsequent to SP AusNet lodging its original proposal is reflected in the MAR approved in this final decision, which is in total around \$127.9m (nominal) higher over the six year (2008-14) regulatory control period than it would have been using a WACC determined at the time SP AusNet submitted its original proposal.

Comments on impact on average end user bill

In terms of the real price of electricity paid by the average residential customer, the AER estimates that this determination will result in annual increases of around 0.88% in 2008-09 and 0.07% per year from 2009-10 to 2013-14. These increases reflect the fact that transmission costs contribute a relatively small proportion of electricity costs for smaller customers.

For typical large users, where the cost of transmission represents between 20% to 25% of electricity costs, these increases are expected to be around 2.89% in 2008-09, and 0.23% each year thereafter.

The relatively large increase in the first year of the period reflects the AER's decision to set X factors of -12.55% in 2008-09 and of -1.01% in each subsequent year. This decision reflects the desirability of aligning SP AusNet's revenues and costs over the regulatory period as closely as possible. The AER considers that the resulting increase in prices in 2008-09, while significant for some users, is still manageable and allows for much smaller increases for the remainder of the period.

Negotiating framework determination – negotiated transmission services

The negotiating framework sets out the procedure to be followed by SP AusNet and service applicants while negotiating for a negotiated transmission service. The minimum requirements for a negotiating framework are set out in cl. 6A.9.5(c) of the NER.

The AER determined in its draft decision that SP AusNet's proposed negotiating framework was not wholly consistent with the requirements of the NER, and specified changes necessary to make the proposed framework compliant with the minimum requirements of the NER.

SP AusNet has accepted and implemented the amendments required by the AER in its draft decision of 31 August 2007. No other changes have been made to its revised proposed negotiating framework.

The AER is satisfied that SP AusNet's revised proposed negotiating framework is consistent with cl. 6A.14.3 (h) of the NER, and approves the proposed framework without further amendment.

Negotiated transmission service criteria determination – negotiated transmission services

The AER must determine the NTSC to be applied by SP AusNet in negotiating the terms and conditions of access, including price, for negotiated transmission services. A commercial arbitrator must also apply the NTSC when resolving a dispute between SP AusNet and a service applicant.

The NTSC determined by the AER must give effect to, and be consistent with, the negotiated transmission services principles set out in cl. 6A.9.1 of the NER.

The NTSC set out in the AER's draft decision gave full effect to the requirements prescribed in the NER, under the umbrella of a requirement that the negotiated terms and conditions of access, including the price to be charged for provision of the service and any access charges, promote the achievement of the national electricity market objective. The draft NTSC were not challenged by SP AusNet in its revised proposal, or in submissions on the draft decision.

The NTSC approved in this final decision are those set out in the AER's draft decision, without further amendment.

Pricing methodology determination – prescribed transmission services

In its draft decision, the AER determined that SP AusNet's proposed pricing methodology did not comply with the NER and the AER's agreed interim requirements in a number of respects. The AER required amendments to be made to ensure the SP AusNet's pricing methodology was compliant with the minimum requirements of the NER.

SP AusNet's revised proposal includes a revised proposed pricing methodology that implements the amendments required in the AER's draft decision in full and without further amendment. SP AusNet has made no changes to its revised pricing methodology other than those specified by the AER.

The AER is satisfied that SP AusNet's revised proposed pricing methodology is fully compliant with the requirements of the NER and the agreed interim arrangements, and approves the revised proposed methodology without further amendment.

Comments on the determination process

Quality of proposals and supporting information

As noted above, this final decision is the first made by the AER under the new framework for economic regulation of transmission services set out in chapter 6A of the NER. SP AusNet's original proposal was the first under the new rules, submitted less than three months after their commencement. In accordance with transitional arrangements in the NER, the proposal was submitted under the requirements of the AER's first proposed submission guidelines. These were published by the AER in January 2007 after consultation with TNSPs including SP AusNet.

Chapter 6A requires the AER to assess revenue proposals within statutory timeframes that are considerably tighter than those previously available for this kind of review. These shorter timeframes do not accommodate the more iterative process of information exchange that has characterised these reviews in the past. A TNSP is required to provide the AER with all information it wishes the AER to consider in support of its proposal at the time the proposal is submitted. It is not the AER's role to investigate a TNSP's proposal by seeking information until it is satisfied that it can be approved.

While recognising that SP AusNet had relatively limited time in which to familiarise itself with chapter 6A and the AER's first proposed submission guidelines, its original proposal did not, in a number of respects, comply with the requirements of the NER and the AER's first proposed submission guidelines. In most instances the requirements were addressed in part, but not adequately. In a number of cases requirements had been completely overlooked. The need to wait for further information following issuing a notice of non-compliance and request for additional information under cl. 6A.11 of the NER limited the time available for assessment of, and consultation on, SP AusNet's proposal for the purposes of the draft decision.

In support of its revised proposal, SP AusNet submitted a significant amount of new information that had not been made available for the AER's consideration prior to the draft decision. In a number of cases this new information contradicted SP AusNet's original proposal and the information provided to support it. In others it sought to correct errors SP AusNet identified in its original proposal after the release of the draft decision. While this information was ostensibly provided to address matters raised in the AER's draft decision, the differences between the original and revised proposals are significant and difficult to reconcile. Compounding this is a series of unexplained discrepancies between SP AusNet's original and revised capex cost information templates, and between its revised proposal document and the templates that accompanied it. This would suggest a lack of due diligence on the part of SP AusNet in the preparation of both its initial proposal and revised proposal.

The proposal and supporting information submitted to the AER by a TNSP are the key inputs to the transmission determination process. It is this information on which the views and submissions of interested parties are based, and on which the AER's assessment and determination are made. The integrity and transparency of the process are therefore dependent on an appropriate level of diligence on the part of a TNSP in preparing its proposal. To minimise the risk of inadequate due diligence in future proposals, the AER will consider mechanisms to ensure the accuracy of information provided as part of determination processes.

The AER accepts that SP AusNet had relatively limited opportunities for engagement prior to submission of its proposal in relation to the AER's requirements and those of the new rules, and that this has potentially contributed to these issues. Questions in relation to the interpretation of the AER's submission (or other transmission) guidelines are best addressed in pre-lodgement discussions, such as those currently taking place with other TNSPs whose resets are pending. It is not acceptable for these questions to be debated after a proposal has been submitted, or indeed left until a draft decision provides an indication of where further information is required.

Assessment of total forecast capex

The AER's draft decision emphasised that reviews of the planning and investment decision making processes, asset management strategies and cost accumulation processes that are presented as governing actual capex within a regulatory control period will play an increasing role in informing the AER's decisions going forward. Under an ex ante incentive framework the AER will place increasing weight on the extent to which a TNSP's forecasts of capex reflect the implementation of those strategies and processes. The detailed review of individual forecast capex 'projects', selected by the AER from those identified by a TNSP in its forecast capex proposal, is a valuable tool in this assessment. These detailed project reviews, however, are not limited to the specific projects that were initially selected. The selected projects are intended to be indicative of other projects included in the capex forecast, and of the practical implementation of the business's overarching strategies and decision making processes. The AER's findings will therefore have implications for its decision on the total forecast capex proposed.

Although SP AusNet has prepared its forecast capex proposal on a detailed project-by-project basis, and the AER has for the most part assessed expenditure in this way, the AER's conclusions relate to a total forecast capex allowance. The AER has considered the proposed replacement capex program that has informed SP AusNet's forecast of the capex it will require over the forthcoming regulatory control period. The primary objective of the AER's assessment of specific projects has been to test the efficiency and prudence of SP AusNet's policies, procedures, replacement strategies and cost estimates, as they relate to the entire forecast capex proposal.

Although the adjustments made by the AER in deriving the substitute forecast capex approved in this final decision are for the most part set out on a project-specific basis, the AER notes that the total capex is an allowance. The AER's project-specific conclusions should not be taken to bind SP AusNet to a particular set of project-specific capex budgets – SP AusNet has the ultimate discretion in how it allocates its capex allowance.

AER's use of consultants

The AER notes views from interested parties regarding the appropriate use of consultants in undertaking its review of a TNSP's revenue proposal.

While not commenting on the validity of the AER's conclusions, Transend has questioned the efficacy of the AER's approach in conducting its own review of elements of SP AusNet's forecast capex and engaging Nuttall Consulting to assist, in addition to PB's review for the AER. Transend suggests that:

“[s]takeholders may be concerned to note that the AER's further analysis produced an overall capital expenditure forecast that is below that recommended by PB. Specifically, the concern is that using a combination of consultants encourages the application of inconsistent or overlapping approaches, with the concomitant risk of forecasting error”

and that

“it would be more appropriate for the AER to ensure that all its consultants are engaged to conduct a comprehensive review of expenditure requirements in accordance with the Rules requirements [,which] would provide all

stakeholders with comfort that issues are addressed properly, comprehensively and consistently”.

SP AusNet has itself noted that it fully appreciates and supports the AER’s right to revisit and test the recommendations and conclusions of the AER’s consultants. The reports of the AER’s consultants are published for scrutiny by interested parties along with the AER’s draft and final decisions. As contemplated by the NER, SP AusNet and other interested parties have identified in their responses to the draft decision those areas in which they question or do not accept the conclusions drawn by the AER and its consultants. Although the AER has regard to expert advice from consultants, it is stressed that external advice is one input into the AER’s decision making process. It should be clear the decision, and all elements of it, lie with the AER and not its consultants. Underpinning the NER is the principle that the proper, comprehensive and consistent treatment of issues within determinations, and indeed across determinations, is best ensured by placing that decision making power in a single, national regulator, tasked with considering all inputs to the determination process.

Separation of rule-making and regulatory functions

In the course of the AER’s assessment of SP AusNet’s proposal, SP AusNet and users have identified areas of the NER which they consider could be improved, or areas where better outcomes could be achieved if the AER was to adopt an approach other than that prescribed in the NER. The AER’s role in making these determinations is to apply the NER as they exist at the relevant point in time. A transmission determination made by the AER can not override or alter the application of the NER. Such matters should be appropriately raised with the AEMC, and addressed through focussed consultation in the context of a rule change proposal.

1 Introduction

1.1 Background

The Australian Energy Regulator (AER) is responsible for the economic regulation of monopoly transmission services in the National Electricity Market (NEM). These functions are conferred on the AER by the National Electricity Law (NEL) and the National Electricity Rules (NER).

The AER must make transmission determinations for Transmission Network Service Providers (TNSPs) in accordance with the NER in respect of prescribed and negotiated transmission services.

The ACCC determined SP AusNet's current revenue cap for the five year period from 2003 to 2008 in accordance with its responsibilities under the National Electricity Code. The Code has now been superseded by the NER.

The AER released its draft decision on SP AusNet's transmission determination on 31 August 2007. On 12 October 2007, SP AusNet submitted a revised proposal in response to the draft decision. This report presents the AER's final decision on the transmission determination for SP AusNet for the forthcoming six-year regulatory period (2008-2014).

1.2 Regulatory requirements

The requirements for SP AusNet's transmission determination are found in the National Electricity Law and the National Electricity Rules.

The detailed provisions underlying the AER's economic regulatory functions for electricity transmission networks are set out in chapter 6A of the NER.

Chapter 6A required the AER to publish several transmission guidelines in September and October 2007. SP AusNet's proposal was submitted on 28 February 2007, before the AER's final guidelines were developed. Transitional provisions in chapter 11 of the NER provide that, for the purposes of this determination, anything that must be done in accordance with a guideline is instead to be done in accordance with the corresponding proposed guideline. In particular:

- the Post-Tax Revenue Model that applies to SP AusNet is the First Proposed PTRM released by the AER on 31 January 2007
- the Roll-Forward Model that applies to SP AusNet is the First Proposed Roll Forward Model released by the AER on 31 January 2007
- the Efficiency Benefit Sharing Scheme (EBSS) that applies to SP AusNet is the First Proposed EBSS released by the AER on 31 January 2007
- the Service Target Performance Incentive Scheme that applies to SP AusNet is the First Proposed Scheme released by the AER on 31 January 2007
- the Submission Guidelines that apply to SP AusNet are the First Proposed Submission Guidelines released by the AER on 31 January 2007

- the Cost Allocation Guidelines that apply to SP AusNet are the First Proposed cost allocation guidelines released by the AER on 31 January 2007
- SP AusNet’s proposed pricing methodology is to be assessed against the AER’s agreed interim requirements, released 16 February 2007.

The proposed guidelines will apply to SP AusNet until the end of the 2008-2014 regulatory control period covered by the AER’s 2008 transmission determination.

1.2.1 Components of transmission determination

The AER must make a transmission determination for a TNSP that includes:

- a revenue determination for the service provider in respect of prescribed transmission services
- a determination relating to the provider’s negotiating framework
- a determination specifying the negotiated transmission service criteria that apply to the provider and
- a determination specifying the pricing methodology for prescribed transmission services to apply to the service provider.

The nature of each of these determinations is outlined in broad terms below.

1.2.1.1 Revenue determination

The AER must use a building blocks approach to set a CPI-X revenue cap for SP AusNet. A revenue determination for SP AusNet is to specify, for a regulatory control period of not less than five years, the following matters:

- the amount of the estimated total revenue cap for the regulatory control period or the method of calculating that amount
- the annual building block revenue requirement for each regulatory year of the regulatory control period
- the amount of the maximum allowed revenue for each regulatory year of the regulatory control period or the method of calculating that amount
- appropriate methodologies for the indexation of the regulatory asset base
- the values that are to be attributed to the performance incentive scheme parameters for the purposes of the application to the provider of any service target performance incentive scheme that applies in respect of the regulatory control period
- the values that are to be attributed to the efficiency benefit sharing scheme parameters for the purposes of the application to the provider of any efficiency benefit sharing scheme that applies in respect of the regulatory control period.

A revenue determination must also specify the commencement and length of the regulatory control period to which it applies. The regulatory control period must not be less than five regulatory years. The AER must approve the commencement and length of the regulatory control period as proposed by the TNSP on its revenue

proposal if the length proposed is five regulatory years, but is not precluded from approving a longer period if that is proposed by the TNSP.

SP AusNet proposed a six-year regulatory control period commencing on 1 April 2008, and ending on 31 March 2014, as a way to smooth the future workload of SP AusNet by separating its electricity transmission and gas distribution reviews.

The AER has accepted the proposed regulatory control period as a once-off measure to address the issues of regulatory burden identified by SP AusNet.

The AER's final decision on SP AusNet's revenue proposal is set out in chapters 2 to 8 and in detailed appendices A and B.

The revenue determination for SP AusNet in respect of prescribed transmission services for the regulatory control period 1 April 2008 to 31 March 2014 is set out in Attachment 1.1 to this final decision.

1.2.1.2 Negotiating framework

SP AusNet must prepare a negotiating framework setting out the procedure to be followed during negotiations between SP AusNet and any person who wishes to receive a negotiated transmission service from SP AusNet, as to the terms and conditions of access for provision of the service.

The AER's final decision on SP AusNet's proposed negotiating framework is set out in chapter 9.

The AER's determination relating to SP AusNet's negotiating framework for the regulatory control period 1 April 2008 to 31 March 2014 is set out in Attachment 1.2 to this final decision.

1.2.1.3 Negotiated transmission service criteria

The Negotiated Transmission Service Criteria (NTSC) that form part of SP AusNet's transmission determination are the criteria that are to be applied:

1. by SP AusNet in negotiating:
 - the terms and conditions of access for negotiated transmission services, including the prices that are to be charged for the provision of those services by SP AusNet for the relevant regulatory control period;
 - any access charges which are negotiated by SP AusNet during that regulatory control period; and
2. by a commercial arbitrator in resolving any dispute, between SP AusNet and a person who wishes to receive a negotiated transmission service, in relation to:
 - the terms and conditions of access for the negotiated transmission service, including the price that is to be charged for the provision of that service by SP AusNet
 - any access charges that are to be paid to or by SP AusNet.

The NTSC determined by the AER must give effect to and be consistent with the Negotiated Transmission Service Principles set out in the NER.

The AER's final decision on the NTSC that will apply to SP AusNet is set out in chapter 10.

The AER's determination specifying the negotiated transmission service criteria that apply to SP AusNet for the regulatory control period 1 April 2008 to 31 March 2014 is set out in Attachment 1.3 to this final decision.

1.2.1.4 Pricing methodology

When setting the prices that may be charged for the provision of prescribed transmission services, SP AusNet must comply with the pricing methodology approved by the AER as part of its transmission determination, and other applicable requirements in the NER.

The pricing methodology is the methodology, formula, process or approach that, when applied by SP AusNet:

3. allocates the aggregate annual revenue requirement for prescribed transmission services provided by SP AusNet to:
 - the categories of prescribed transmission services for SP AusNet; and
 - transmission network connection points of Transmission Network Users; and
4. determines the structure of the prices that SP AusNet may charge for each of the categories of prescribed transmission services for that provider.

The pricing methodology proposed by SP AusNet and approved by the AER must give effect to and be consistent with the pricing principles for prescribed transmission services set out in part J of the NER, and comply with the requirements of, and contain or be accompanied by such information as is required by, the pricing methodology guidelines made for that purpose by the AER.

As noted above, the transitional provisions in chapter 11 of the NER provide that SP AusNet's proposed pricing methodology is to be assessed against the AER's agreed interim requirements, released 16 February 2007. Transmission determination processes for ElectraNet and VENCORP have permitted those TNSPs, by election, to submit a revised proposed pricing methodology under the final pricing guidelines published on 29 October 2007. However, the timing of the AER's final decision and transmission determination for SP AusNet is such that submission of a revised proposed methodology following the release of the final guidelines and public consultation on that methodology was not possible. The AER's final decision has therefore been made in accordance with the agreed interim requirements.

The AER's final decision on SP AusNet's proposed pricing methodology is set out in chapter 11.

The AER's determination specifying the pricing methodology for prescribed transmission services to apply to SP AusNet for the regulatory control period 1 April 2008 to 31 March 2014 is set out in Attachment 1.4 to this final decision.

1.2.2 Draft decision and revised proposal

The AER's draft decision was released on 31 August 2007 in accordance with the requirements of part E of chapter 6A. The pre-determination conference required by

the NER⁴ was held on 11 September 2007, and oral submissions from interested parties were recorded.

SP AusNet elected to submit a revised revenue proposal, negotiating framework and pricing methodology to the AER under cl. 6A.12.3 on 12 October 2007, in which it states that it has incorporated the substance of changes required by the draft decision, and addressed the matters raised therein. SP AusNet's revised proposal, together with the information accompanying it, was published on the AER's website and via a notice to interested parties.

The AER sought written submissions on its draft decision and on SP AusNet's revised proposal within 45 business days from the pre-determination conference.⁵

Submissions were received from Transend, TransGrid, ElectraNet, the Energy Users Coalition of Victoria and the Energy Users Association Australia.

1.2.3 Final decision

The AER's final decision on SP AusNet's transmission determination is made with regard to the same criteria as its draft decision. In that respect, the basis for consideration of each of the determinations above does not change between draft and final decision.

However, certain additional requirements apply to the AER's final decision:

- The AER must consider any submissions made on the draft decision or the revised proposal⁶, but is not required to consider any submission made after the time specified for making the submission has expired⁷
- If SP AusNet's revised revenue proposal includes an amount of total forecast capex or opex for the regulatory control period that is the same as that estimated by the AER in its draft decision then, except to the extent that either or both of the following apply:
 - other changes have been made in the revised revenue proposal, or
 - the information contained in or accompanying the revised proposal differs from that contained in or accompanying the previous revenue proposal, andthe changes are such that the AER is no longer satisfied that the forecasts reasonably reflect the capex or opex criteria, the AER must, in its final decision, accept the forecast of capex or opex that is included in the revised proposal.⁸
- If SP AusNet's revised revenue proposal, negotiating framework or pricing methodology contains the changes required in the AER's draft decision, or in

⁴ NER, cl. 6A.12.2(b)

⁵ NER, cl. 6A.12.2(c)

⁶ NER, cl. 6A.13.1(a)

⁷ NER, cl. 6A.16(a)

⁸ NER, cl. 6A.14.3(c)

the AER's view addresses the matters which prompted the AER to require those changes, then except to the extent that either or both the following apply:

- other changes have been made by SP AusNet to the revised revenue proposal, negotiating framework or pricing methodology, or
- the information contained in or accompanying the revised revenue proposal, negotiating framework or pricing methodology differs from that contained in or accompanying the previous proposal, and

the changes would justify the AER, in its final decision, in refusing to do so, the AER's decision must be to approve the proposal.⁹

- If the AER's final decision is to refuse SP AusNet's proposed total revenue cap, MAR, performance scheme parameters or efficiency benefit sharing scheme parameters, or length of the regulatory control period, the AER must include in its final decision a substitute amount which is determined on the basis of the revised revenue proposal, and amended from that basis only to the extent necessary to enable it to be approved in accordance with the NER.¹⁰ If the AER refuses to approve one of these amounts or values because it has rejected SP AusNet's revised total forecast capex or opex, the AER must include in its final decision the forecast capex or opex for each year of the regulatory control period which the AER is satisfied reasonably reflects the capex and opex criteria, with regard to the capex and opex factors.¹¹

The AER released this final decision on 31 January 2008. In making its final decision the AER has considered all written submissions made in response to the AER's draft decision and SP AusNet's revised proposal as well as oral submissions made at the pre-determination conference.

The AER engaged technical consultants to provide independent, objective advice on SP AusNet's revised revenue proposal:

- PB Strategic Consulting (PB) was engaged to provide independent engineering advice on SP AusNet's proposed capex, opex and service performance target values. PB has worked extensively with Australian regulatory bodies, providing strategic management services in the utility, infrastructure and energy sectors, focusing on areas of industry and regulatory reform, energy economics, strategic planning, project finance, valuations, and advice on mergers and acquisitions.
- Nuttall Consulting was engaged to provide expert engineering advice on SP AusNet's forecast capex. Nuttall Consulting specialises in regulation and business strategy in the energy and utility sector, and offers over 10 years of consultancy experience in this field, having worked with governments, industry

⁹ NER, cl. 6A.14.3(h). Note that this clause only applies to those amounts or values in SP AusNet's revenue proposal that could not be determined before the submission of the revenue proposal, or which are required to be estimated, approved or otherwise determined before the submission of the revenue proposal, so that amounts, values or inputs must be used in their place for the purposes of the proposal – see cl. 6A.14.3(h)(4), 6A.14.1(5), 6A.10.2(b)(9).

¹⁰ NER, cl. 6A.13.2(a)

¹¹ NER, cl. 6A.13.2(b)

regulators and competition authorities, industry participants and investors, in numerous countries.

The reports prepared by PB and Nuttall Consulting are available on the AER's website.

1.2.3.1 Revocation of revenue determination or amendment of pricing methodology for wrong information or error

The AER may, at any time within the forthcoming regulatory period, revoke SP AusNet's revenue determination or amend its pricing methodology if it appears to the AER that:

- the total revenue cap was set or the pricing methodology was approved on the basis of information provided by or on behalf of SP AusNet to the AER that was false or misleading in a material particular¹², or
- there was a material error in the total revenue cap or in the pricing methodology¹³.

If the AER revokes SP AusNet's revenue determination or pricing methodology, it will make a new revenue determination, or amended methodology, that will apply to SP AusNet for the remainder of the regulatory control period.¹⁴

The AER will conduct such consultation on any revocation and substitution of SP AusNet's revenue determination or pricing methodology as it considers appropriate.¹⁵

¹² NER, cl. 6A.15(a)

¹³ NER, cl. 6A.15(a)(2)

¹⁴ NER, cl. 6A.15(b) – (e)

¹⁵ NER, cl. 6A.15(f)

2 Past capital expenditure

2.1 Introduction

This chapter sets out the AER's determination of the prudent amount of capex from the current regulatory control period to be included in SP AusNet's opening regulatory asset base (RAB).

SP AusNet's current transmission determination¹⁶ provides that an ex post prudency assessment of capex is to be conducted at the conclusion of the current regulatory control period. This is preserved in the transitional and savings provisions in chapter 11 of the NER. The tests applied to this ex post assessment are those set out in appendix B to the Statement of Regulatory Principles (SRP), which allow only prudent capex to be rolled into the RAB.

2.2 AER's draft decision

SP AusNet's original proposal identified net capex of \$478.5m from the current regulatory control period to be rolled into its RAB. In its draft decision, the AER accepted the majority of SP AusNet's past capex as prudent, and determined that \$476.8m (inclusive of finance during construction and work in progress) would be included in SP AusNet's RAB at the commencement of the forthcoming regulatory control period.

In determining this prudent level of expenditure, the AER made two minor adjustments to SP AusNet's proposed roll in amount:

- the removal of a \$0.43m contingency allowance for the Redcliffs Terminal Station (RCTS) refurbishment and
- a reduction of \$1.34m intended to adjust for incorrect cost allocation across categories of non-network capex identified in the course of PB's review.

In reaching its conclusion the AER commented that both the review conducted by PB, and the AER's own assessment of SP AusNet's past capex indicated that in several instances SP AusNet's implementation of its asset management strategy and internal policies and procedures over the current regulatory control period could have been improved, especially in terms of documentation. Despite this, the AER was satisfied that, subject to the adjustments above, the capex incurred by SP AusNet over the current period was not beyond the efficient level that would have been incurred by a prudent operator in similar circumstances, and that the majority of SP AusNet's capex in the current regulatory control period was prudent.¹⁷

¹⁶ ACCC, Victorian Transmission Network Revenue Caps 2003-08, 11 December 2002.

¹⁷ AER, Draft decision – SP AusNet transmission determination 2008-09 – 2013-14, 31 August 2007, p.30.

2.3 SP AusNet’s revised proposal

SP AusNet’s revised proposal identifies past capex of \$464.4m¹⁸ from the current regulatory control period that it submits should be rolled into its RAB.

SP AusNet states that its revised proposal, in effect, implements the AER’s draft decision with updated capex forecasts,¹⁹ and notes that it contains a full year of audited costs for 2006–07, whereas the initial proposal for that year included only nine months of actual expenditure, and three months of forecast expenditure.

SP AusNet’s revised proposal also provides updated forecasts for 2007–08 and the WIP component of that forecast where it states that better data has become available. SP AusNet submits that these updates render the adjustments made in the AER’s draft decision obsolete.²⁰ In particular, SP AusNet states that in its revised proposal it has:

- provided a new 2007–08 capex forecast for IT and
- provided updated forecasts for the RCTS refurbishment project that no longer include a contingency factor, as final costs are more certain.²¹

Table 2.1 SP AusNet revised proposal — Past capex, year-on-year (\$m, nominal)

Stub [^]	2003-04	2004-05	2005-06	2006-07	2007-08	WIP	Total
29.3	49.5	66.3	96.1	102.5	103.8	17.0	464.4

Source: SP AusNet roll forward model and AER analysis.

Notes: ^ Stub period from 1 January to 31 March 2003.

2.4 Submissions

The EUCV, in its submission on PB’s report, expresses “doubt regarding the veracity of the conclusions reached by PB”²² in making recommendations for past capex, and in particular PB’s view that all past capex is prudent and efficient, despite PB’s criticism that documentation supporting past capex projects was inadequate. The EUCV states that:

¹⁸ In its revised proposal (p.39) SP AusNet provides capex data for the 6 year period 1 April 2002 to 31 March 2008, indicating a past capex figure of \$474m. However, for the purposes of this chapter and final decision, and as reflected in table 2.1, the AER considers the relevant period for ex post assessment of capex is 1 January 2003 to 31 March 2008 (i.e. excluding the 9 month period prior to the commencement of the current regulatory control period). The AER has also calculated this past capex figure excluding the half WACC component, but including the WIP component. In contrast to this, the past capex figures contained in SP AusNet’s revised proposal include the half WACC but exclude the WIP component.

¹⁹ SP AusNet, Electricity transmission revised proposal, 2008/09-2013/14, p.18.

²⁰ *ibid.*

²¹ *ibid.*

²² EUCV, AER Victorian electricity transmission revenue reset: AER consultants reports – A response by the EUCV, November 2007, p.18.

On the balance of probabilities, EUCV is of the view that PB has recommended inclusion of past capex into the RAB that should not be accepted.²³

The EUCV submits that whilst PB has applied a high standard in assessing future capex programs, it appears to have applied a lower standard in its analysis of past capex projects.²⁴

The EUCV, in its submission on the AER's draft decision, again expresses concern that:

Too much past capex might have been accepted without demonstrating the rigour that is needed to assess the veracity of the detail. The very fact that the AER uses the term "not imprudent" provides some disquiet.²⁵

The EUCV also express concern that the neither the AER nor its consultants have carried out a post project verification of assumptions that have been applied by SP AusNet in calculating past capex to be rolled into the RAB.²⁶

2.5 Regulatory requirements

In making its final decision, the AER has applied the same regulatory requirements that were applied in its draft decision.

2.5.1 NER requirements

Clause 11.6.9 of the NER provides that:

In making a revenue determination for the first regulatory control period, the value of the regulatory asset base at the beginning of the first regulatory year of that period calculated in accordance with clause S6A.2.1(f), may be adjusted having regard to an existing revenue determination and any other arrangements agreed between the AER and the Transmission Network Service Provider.

In practical terms, cl. 11.6.9 allows the AER to take into account the terms under which the ACCC made SP AusNet's (then SPI PowerNet) current transmission determination in 2002.

2.5.2 Statement of regulatory principles (SRP)

The process for reviewing capex undertaken by SP AusNet in the current period is set out in the SRP, which was released by the ACCC on 8 December 2004 and adopted by the AER in 2005. Appendix B of the SRP sets out the ex post prudency test to be applied for transmission determinations (including SP AusNet's current determination) made under the ACCC's 1999 Draft Statement of Principles for the Regulation of Transmission Revenues (DRP).

A key element of SP AusNet's current transmission determination — as determined under the DRP — is the requirement for the AER to undertake an ex post prudency

²³ *ibid*, p.21.

²⁴ EUCV, *op cit* p.20.

²⁵ EUCV, AER Victorian electricity transmission revenue reset: AER draft determination – A response by the EUCV, November 2007, p.14

²⁶ *ibid*.

assessment of capex undertaken in the current regulatory control period, prior to including it in the RAB.

The DRP states that capex may only be rolled into the RAB provided that “the amount does not exceed the amount that would be invested by a prudent TNSP acting efficiently in accordance with good industry practice and to achieve the lowest sustainable cost of delivering services”.

2.6 Issues and AER considerations

The EUCV submits that the AER has permitted past capex that is not necessarily prudent and efficient to be included in SP AusNet’s RAB for the forthcoming regulatory control period, and questions the rigour of the AER’s assessment of past capex. In particular, the EUCV points to the identified weaknesses in project documentation. The AER considers that SP AusNet’s expenditure in the current period has on balance been prudent and efficient. The AER does note, however, that there is some scope for improvement in the documentation provided by SP AusNet.

Although the EUCV consider that there is a lack of rigour in the assessment of SP AusNet’s past capex, both the AER and PB have closely scrutinised the prudence and efficiency expenditure of SP AusNet against the criteria set out above in 2.5.2.2.

The EUCV also points to a perceived contradiction in the AER’s draft decision between its acceptance of SP AusNet’s past capex, and the significant inefficiencies in the indicative forecast capex program underlying SP AusNet’s revenue proposal. The AER does not consider its conclusions in regards to past capex and forecast to be contradictory.

When regard is had to the circumstances at the time expenditure decisions were made, it cannot be said that the expenditure incurred by SP AusNet in the current period is beyond that which would have been incurred by a prudent operator without the benefit of hindsight. It was also apparent to the AER and its consultants that SP AusNet’s project management had improved throughout the period, reflecting a learning process that captures the lessons learnt from past projects. The significant downward adjustments to SP AusNet’s forecast capex in the AER’s draft decision are more appropriately viewed as a product of SP AusNet’s failure to justify, in economic terms, the revenue it now seeks in the forthcoming period than a reflection of inefficient and imprudent expenditure in the current period.

SP AusNet has updated the information provided in its original proposal with full-year audited costs for 2006-07, and more recent data in relation to forecast works for the remainder of 2007-08. As noted above, these updates have resulted in a reduction in the amount of capex from the final two years of the current regulatory control period that SP AusNet seeks to roll into its RAB. SP AusNet has reduced its overall past capex to \$464.4m.

2.6.1 Redcliffs Terminal Station upgrade

The AER’s draft decision rejected the \$0.43m contingency component of SP AusNet’s estimate of expenditure for the remaining six months of the RCTS upgrade project.

SP AusNet’s revised proposal provides an updated expenditure figure of \$14.1m for RCTS, which is lower than both SP AusNet’s initial proposal and the AER’s draft decision.

This reduction results from the application of actual 2006-07 expenditure and updated forecasts for the remaining works. The AER is satisfied that the revised proposal of \$14.1m is reflective of an efficient level of expenditure for this project, and notes SP AusNet’s continued capture of efficiencies as the project has progressed.

2.6.2 Non network capex

In its revised revenue proposal, SP AusNet identifies an error in the AER’s draft decision, whereby rejection of the reallocation of IT non system costs into vehicles, tools and equipment categories resulted in a reduction of \$1.34m to forecast non-system capex. This error has been corrected by SP AusNet in its revised proposal.

The AER accepts SP AusNet’s reinstatement of the \$1.34m.

2.7 AER’s conclusion

The AER considers that SP AusNet’s revised proposed past capex of \$464.4m (nominal) meets the regulatory requirements for incorporation into its RAB at the commencement of the forthcoming regulatory control period.

SP AusNet has updated its capex proposal to include actual expenditure for 2006-07, and refined forecasts for 2007-08. No new information has come to light that gives the AER cause to depart from its initial conclusion that SP AusNet’s past capex is not inconsistent with that which would be invested by a prudent TNSP, acting efficiently in accordance with good industry practice, and to achieve the lowest sustainable cost of delivering services. The AER therefore accepts SP AusNet’s proposed past capex of \$464.4m over the current period.

Table 2.2 – AER’s final decision – Total prudent past capex (\$m, nominal)

	2003 [^]	2003-04	2004-05	2005-06	2006-07	2007-08*	WIP	Total
SP AusNet revised proposal	29.3	49.5	66.3	96.1	102.5	103.8	17.0	464.4
AER’s final decision	29.3	49.5	66.3	96.1	102.5	103.8	17.0	464.4

Source: SP AusNet²⁷; AER analysis

Notes: [^] stub period from 1 January to 31 March 2003

* forecasts

Capex is as-commissioned (excluding WIP), including FDC

Capex includes half-WACC adjustment.

²⁷ SP AusNet, Electricity transmission revised proposal, 2008/09-2013/14, p.39

3 Regulatory asset base

3.1 Introduction

This chapter sets out the AER's final determination of SP AusNet's regulatory asset base (RAB) as at 1 April 2008.

3.2 AER's draft decision

The AER's draft decision determined the value of SP AusNet's RAB as at 1 April 2008 to be \$2 203.45m. This was 0.88% less than SP AusNet's proposed opening RAB of \$2 222.93m. The AER's RAB roll forward calculation is set out in table 3.1.

Table 3.1: AER draft decision of SP AusNet's RAB as at 1 April 2008 (\$m, nominal)

Year (1 April to 31 March)	1 Jan to 31 Mar 2003	2003-04	2004-05	2005-06	2006-07	2007-08
"Locked in" RAB	1,835.60					
Adjustment for capex estimated for 1 Apr to 31 Dec 2003	-47.34					
Opening RAB	1,788.26	1,812.96	1,830.98	1,867.20	1,935.03	2,014.75
Indexation	13.25	43.72	48.92	53.85	63.46	52.09
Actual prudent net capex	29.56	51.67	69.05	100.26	107.98	114.07
Inflation adjusted depreciation	-18.11	-77.37	-81.76	-86.28	-91.72	-97.62
Closing RAB	1,812.96	1,830.98	1,867.20	1,935.03	2,014.75	2,083.29
Roll in of non-contestable assets						115.85
Add compounded return on estimated capex						8.17
Removal of benefit associated with estimated capex						-27.06
Work in progress						23.21
Opening RAB 1 April 2008						2,203.45

In its draft decision the AER made the following adjustments to SP AusNet's original proposed RAB calculations:

- minor reductions in the amount of prudent capex claimed as a result of an ex post prudency review
- adjustments to the CPI measure used to index the RAB over the period
- a small reduction to the amount of non-contestable assets to be rolled into the RAB
- removal of the benefit (i.e. the return on capital) associated with capex overestimated for the nine months to 31 December 2002
- addition of the return on prudent overspend for the period (which was previously combined with the benefits of the capex overestimate for 2002).

The AER also ensured that the value of contracts for non-contestable assets rolled into SP AusNet's RAB was removed from VENCORP's calculation of forecast committed augmentation charges for the purposes of VENCORP's revenue determination.

3.3 SP AusNet's revised proposal

SP AusNet accepted each element of the AER's draft decision in relation to the calculation of its opening RAB, but has provided revised claims for prudent net capex in 2006-07 and 2007-08 (which are \$1.0m and \$5.0m lower than the AER's draft decision, respectively), and work in progress (\$5.2m lower). These proposed revisions result in a lower opening RAB of \$2 190.8m, \$12.7m less than the AER's draft decision. SP AusNet's revised proposal is summarised in table 3.2.

Table 3.2: SP AusNet revised proposal- RAB as at 1 April 2008 (\$m, nominal)

Year (1 April to 31 March)	1 Jan to 31 Mar 2003	2003-04	2004-05	2005-06	2006-07	2007-08
Opening RAB	1,788.3	1,813.0	1,831.0	1,867.2	1,935.0	2,013.8
Indexation	13.3	43.7	48.9	53.9	63.5	52.1
Actual prudent net capex	29.6	51.7	69.1	100.3	107.0	108.6
Inflation adjusted depreciation	-18.1	-77.4	-81.8	-86.3	-91.7	-97.6
Closing RAB	1,813.0	1,831.0	1,867.2	1,935.0	2,013.8	2,076.9
Roll in of non-contestable assets						115.8
Add compounded return on estimated capex						8.1
Removal of benefit associated with estimated capex						-27.1
Work in progress						17.0
Opening RAB 1 April 2008						2,190.8

Source: SP AusNet Electricity Transmission Revised Proposal, 12 October 2007, p. 177.

3.4 Submissions

The Energy Users Coalition of Victoria (EUCV) asked the AER to publish information relating to the assessment of the roll-in of non-contestable assets, which it considered particularly important given the prevalence of errors found in the information examined by Nuttall Consulting.²⁸ It also requested that the AER:

- ensure that the value of non-contestable assets rolled into SP AusNet's RAB is removed from VENCORP's RAB
- remove the benefit received by SP AusNet associated with depreciation of the amount of capex that was estimated but not spent between April and December 2002
- explain (to SP AusNet) that any similar benefits received by SP AusNet from overestimated capex for 2007-08 will be excluded at the next reset.²⁹

²⁸ EUCV, Submission on consultants reports, p. 16.

²⁹ EUCV, Submission on AER draft determination, pp. 15-16.

3.5 Regulatory requirements

The relevant provisions of the NER relating to the roll forward of SP AusNet's RAB over the 2003-08 regulatory control period are contained in schedule 6A.2, cl. 11.6.9 and cl. 11.6.21.

Schedule 6A.2 prescribes RAB values for transmission systems owned by certain TNSPs, including SP AusNet, at a particular point in time. For SP AusNet, this value is \$1 835.60m as at 1 January 2003 as determined by the ACCC.

Clause S6A.2.1(c)(2) provides for the locked in value to be adjusted for the difference between:

- (i) any estimated capital expenditure that is included in those values for any part of a previous regulatory control period; and
- (ii) the actual capital expenditure for that part of the previous regulatory control period.

This clause also requires the AER to remove any associated benefit or penalty to the TNSP when making this adjustment.

Clause S6A.2.1(f) outlines how the opening RAB established in accordance with cl. S6A.2.1(c) is to be rolled forward to calculate the value of the RAB at the beginning of the first year of the forthcoming regulatory control period. This requires that the previous value of the RAB must be:

- increased by adding all actual capex incurred over the period
- adjusted for the difference between any estimated capex included in the opening RAB and the actual capex that was incurred for a particular part of a previous control period, while removing any benefits or penalties of such an adjustment
- reduced by the amount of actual depreciation over the period, calculated in accordance with the methods and rates used in the determination for that period
- reduced by the amount of disposals for the period.³⁰

The transitional provision in cl. 11.6.9 provides that the value of the opening RAB for the first regulatory control period under chapter 6A may also be adjusted having regard to an existing revenue determination and any other arrangements agreed between the AER and the TNSP. This provision allows the AER to take into account incentive arrangements agreed under the old chapter 6 that give rise to different roll forward methodologies than that outlined in cl. S6A.2.1(f).

In addition, cl. 11.6.21(c) requires that the previous value of SP AusNet's RAB be increased by the amount of capex incurred over the previous regulatory control period under agreements made by SP AusNet for the provision of prescribed services, adjusted for depreciation and inflation as provided in those agreements.

³⁰ NER, cl. S6A.2.1(f)(1-8))

3.6 Issues and AER considerations

SP AusNet has accepted the adjustments made in the AER's draft decision. These adjustments have again been applied in this final determination.³¹

As explained in chapter 2, the AER has reviewed SP AusNet's revised capex data for the current regulatory period and finds this to be prudent. The AER found a minor omission in SP AusNet's capex data for 2007-08, which, when corrected, results in a \$0.4m increase to its opening RAB value. The AER's calculation of SP AusNet's RAB is contained in table 3.3.

Table 3.3: AER final determination - RAB as at 1 April 2008 (\$m, nominal)

Year (1 April to 31 March)	1 Jan to 31 Mar 2003	2003-04	2004-05	2005-06	2006-07	2007-08
Opening RAB	1,788.3	1,813.0	1,831.0	1,867.2	1,935.0	2,013.8
Indexation	13.3	43.7	48.9	53.9	63.5	52.1
Actual prudent net capex	29.6	51.7	69.1	100.3	107.0	109.1
Inflation adjusted depreciation	-18.1	-77.4	-81.8	-86.3	-91.7	-97.6
Closing RAB	1,813.0	1,831.0	1,867.2	1,935.0	2,013.8	2,077.3
Roll in of non-contestable assets						115.8
Add compounded return on estimated capex						8.1
Removal of benefit associated with estimated capex						-27.1
Work in progress						17.0
Opening RAB 1 April 2008						2,191.2

The AER shares the EUCV's concern over the accuracy of SP AusNet's claims regarding the roll-in value of non-contestable assets and notes that the EUCV has not been able to scrutinise these claims. However, the information provided by SP AusNet for the purposes of reviewing this claim is, in the AER's opinion, commercially sensitive. The publication of SP AusNet's contracts for all of these assets would potentially undermine its future contractual dealings. In reviewing SP AusNet's original proposal the AER sought to review a sample of the projects and, in light of the errors found in this initial sample, obtained information on a further two

³¹ As required by cl. 6A.14.3(h) of the NER

contracts in order to determine the prevalence of further errors. While further errors were found, these were marginal. Additional sampling and review is considered unnecessary at this time. Should it become apparent within the forthcoming regulatory period that further errors exist, such that SP AusNet's revenue determination has been based on a material error, or that the information provided by SP AusNet appears to be false or misleading, the NER will allow the AER to revoke SP AusNet's revenue determination and substitute a new determination that will apply for the remainder of the regulatory control period.³²

In response to the EUCV's other requests, the AER notes:

- of the non-contestable contracts reviewed, each provides for a transfer of pricing arrangements to prescribed services once the associated assets are rolled into SP AusNet's RAB, thus there is no double charging of customers
- the AER is required under S6A.2.1(f)(3) to remove the value of any benefits or penalties associated with any over or under forecast capex in performing the roll-forward calculation as part of each revenue determination
- the AER did not consider it necessary to remove the benefit of depreciation earned by SP AusNet for capex not spent in 2002 because of the offsetting reduction in its RAB is larger than what it would otherwise have been. In other words, this represents a value of depreciation that has been brought forward, rather than a gain to SP AusNet. An adjustment of the type suggested by the EUCV would therefore result in an increase in SP AusNet's RAB and leave both customers and SP AusNet no better or worse off.

3.7 AER's conclusion

The AER has made a minor correction to SP AusNet's revised proposed opening RAB value. After this correction, the AER determines SP AusNet's RAB as at 1 April 2008 is \$2 191.2m.

³²

As permitted by cl. 6A.15

4 Forecast capital expenditure

4.1 Introduction

The AER is required to assess SP AusNet's proposed forecast capital expenditure (capex) for the forthcoming regulatory control period (2008-14) against the requirements of the National Electricity Rules (NER).

The annual capex forecast approved by the AER in its transmission determination will be rolled into SP AusNet's regulatory asset base (RAB) at the end of each year of the forthcoming regulatory control period. SP AusNet will recover the forecast capex costs through the associated returns on and depreciation of capital, which form two of the building blocks in its maximum allowed revenue (MAR). Under the ex ante incentive framework, at the commencement of the next regulatory control period (on 1 April 2014), SP AusNet's RAB will be adjusted for differences between actual and forecast capex so that only the capex actually undertaken during the 2008-14 regulatory control period covered by this transmission determination will be capitalised.

Unlike the capex programs of other TNSPs, SP AusNet's proposed forecast capex does not include augmentation capex. All transmission network augmentation in Victoria is planned and contracted by VENCORP or the relevant connected party.

4.2 AER's draft decision

In its draft decision the AER did not accept SP AusNet's total proposed forecast capex, and substituted the revised forecast shown in table 4.1 below.

Table 4.1: AER's Draft decision – forecast capex (as incurred, \$m, 2007-08)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's original proposal	128.02	147.70	140.14	140.85	139.69	158.87	855.26
AER's draft decision	104.95	116.68	131.40	109.39	92.97	123.67	679.04
AER's total adjustment	-23.07	-31.02	-8.74	-31.46	-46.72	-35.20	-176.23

Table source: AER draft decision, 31 August 2007, p.104.

The AER's revised forecast was derived from a series of adjustments to elements of SP AusNet's original proposed forecast. These are presented in table 4.2 below. Each of these adjustments, and the response to those adjustments in SP AusNet's revised proposal, is discussed in further detail in section 4.6 below.

In its draft decision, the AER rejected SP AusNet's proposed inclusion of a contingency allowance for station rebuild / refurbishment projects in its forecast of required capex for the forthcoming regulatory control period. While the AER recognised that unforeseen costs could arise during the project implementation stage, SP AusNet did not provide sufficient justification for its proposed allowance, particularly in light of countervailing factors (e.g. improvements in cost estimation

and use of a generic ‘brownfield factor’). Further, the AER rejected SP AusNet’s proposed general allowance of \$5.5m for its response capability for undefined works.

The removal of the contingency allowance from individual projects is included in the AER’s total adjustments in table 4.2.

Table 4.2: AER’s draft decision – adjustments to SP AusNet’s forecast capex (\$m, 2007-08)*

	SP AusNet’s original proposal	AER’s draft decision Adjustments	AER’s draft decision
Refurbishment of HWPS**	35.70	-6.03	29.67
Redevelopment of RTS	89.70	-54.81	34.89
Transformer replacements	28.80	-22.40	6.40
Replacement of SCADA systems	43.90	-8.20	35.70
Response capability undefined works	5.50	-5.50	0.00
Replacement of CTs	24.50	-9.09	15.41
Vehicle replacements	8.40	-3.42	4.98
Inventory	2.25	-0.24	2.01
Replacement of 500kV CBs	4.20	-2.10	2.10
Replacement of 66kV switch-bays	3.49	-3.49	0.00
Redevelopment of BLTS	51.85	-13.40	38.45
Refurbishment of TTS	43.73	-14.95	28.78
Redevelopment of RWTS	29.40	-1.60	27.80
Refurbishment of GNTS	21.32	-6.42	14.90
Refurbishment of KTS	39.62	-8.62	31.00
Refurbishment of GTS	28.50	-7.89	20.61
Refurbishment of HWTS	19.40	-1.39	18.01
Total	480.26	-169.55	310.71

Table source: AER draft decision, 31 August 2007, p.104.

* Capex as incurred

** In its original proposal submitted on 28 February 2007, SP AusNet proposed capex of \$36.60m for this project. This was later updated by SP AusNet to \$35.70m.

In addition to these adjustments, the AER’s draft decision required a further reduction of \$6.70m (\$2007-08) to SP AusNet’s proposed allowance for real capex (labour and materials) escalations.

4.3 SP AusNet's revised proposal

SP AusNet's revised revenue proposal includes a forecast of capex (as commissioned) that, while it differs from its original proposal year-on-year, is in total essentially equal to that in its original proposal.

Table 4.3: SP AusNet's revised proposal – forecast capex (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
Original proposal	128.6	121.7	156.8	150.8	123.3	157.4	838.6
Revised proposal	123.6	140.1	143.0	147.3	132.3	152.5	838.8

Table source: SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.131.

* Capex as commissioned

SP AusNet considers that the lower total capex allowance approved by the AER in its draft decision:

... is insufficient to compensate the company for the costs that it reasonably expects to incur in achieving the capital expenditure objectives in a prudent and efficient manner.

In particular, the Draft Decision's proposed exclusion of SP AusNet's entire proposed contingency allowance as well as its proposed allowance for undefined works would severely impede the company's ability to undertake efficiently and prudently all the capital works required to achieve the capital expenditure objectives set out in the NER.³³

In its revised proposal SP AusNet re-examines those aspects of its original capex forecast to which the AER's draft decision required adjustments. SP AusNet's revised proposal in relation to these aspects is outlined in table 4.4, and discussed in further detail in section 4.6.1 below.

SP AusNet has disputed the AER's rejection of its proposed contingency allowance for station rebuild / refurbishment projects, and has in its revised proposal restated its original proposed allowance. In response to the draft decision, SP AusNet engaged consultants Evans & Peck (E&P) to undertake an analysis of the cost impact of the risks associated with its forecast capex program.³⁴ The AER's consideration of SP AusNet's revised proposal regarding the contingency allowance is discussed in section 4.6.2.1 below.

³³ SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p. 104.

³⁴ Evans & Peck, *SP AusNet Capital Works Program – Risk Model Report*, 11 October 2007.

Table 4.4: SP AusNet's revised proposal - forecast capex (\$m, 2007-08)*

	SP AusNet's original proposal <small>(Amounts in <i>italics</i> represent SP AusNet's proposed contingency allowance)</small>	AER's draft decision	SP AusNet's revised proposal <small>(Amounts in <i>italics</i> represent SP AusNet's proposed contingency allowance)</small>
Refurbishment of HWPS ³⁵	35.70 <i>1.7 (5.0 %)</i>	29.67	36.39 <i>1.7 (4.9 %)</i>
Redevelopment of RTS	89.70 <i>6.1 (7.3 %)</i>	34.89	110.80 <i>6.1 (5.8 %)</i>
Transformer replacements	28.80	6.40	28.80
Replacement of SCADA systems	43.90	35.70	35.90
Response capability undefined works	5.50	0.00	5.50
Replacement of CTs^	24.50	15.41	24.50
Vehicle replacements	8.40	4.98	4.98
Inventory	2.25	2.01	2.01
Replacement of 500kV CBs	4.20	2.10	4.20
Replacement of 66kV switch-bays	3.49	0.00	3.49
Redevelopment of BLTS	51.86 <i>2.8 (5.7 %)</i>	38.45	51.86 <i>2.8 (5.7 %)</i>
Refurbishment of TTS	43.73 <i>3.7 (9.2 %)</i>	28.78	43.73 <i>3.7 (9.2 %)</i>
Redevelopment of RWTS	29.38 <i>1.6 (5.8 %)</i>	27.80	29.38 <i>1.6 (5.8 %)</i>
Refurbishment of GNTS	21.32 <i>1.5 (7.6 %)</i>	14.90	21.32 <i>1.5 (7.6 %)</i>
Refurbishment of KTS	39.62 <i>3.4 (9.4 %)</i>	31.00	39.62 <i>3.4 (9.4 %)</i>
Refurbishment of GTS	28.50 <i>2.5 (9.6 %)</i>	20.61	26.50 <i>2.5 (10.4 %)</i>
Refurbishment of HWTS	19.41 <i>1.4 (7.8 %)</i>	18.01	19.41 <i>1.4 (7.8 %)</i>
Total	480.26	310.71	488.39

Table sources: AER draft decision, 31 August 2007, p.104; SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, pp.102-131; SP AusNet, email to the AER, 12 December 2007.

* Capex as incurred.

³⁵ In its original proposal submitted on 28 February 2007, SP AusNet proposed capex of \$36.60m for this project. This was later updated by SP AusNet to \$35.70m.

^ In its revised proposal, SP AusNet puts forward two alternate forecasts of capex for this project to address potential outcomes in the AER's final decision. These are discussed further in section 4.6.1.6 of this final decision.

SP AusNet has, for the purposes of its revised revenue proposal, accepted the AER's draft decision on labour and materials escalations.³⁶ The application of these escalators for the purposes of this final decision is discussed in section 4.6.2.2 below.

4.4 Submissions

ElectraNet

ElectraNet supports the use of risk-based modelling to determine an appropriate contingency allowance to include in the forecast capex allowance of TNSPs. ElectraNet states that, based on its experience, project outturn costs are asymmetric compared with forecast project costs:

All projects involve risk – while modern risk identification and mitigation measures may reduce risk, it cannot be eliminated altogether. Large transmission projects are of a complex nature, making it difficult to estimate a final project cost with certainty.³⁷

On this basis, ElectraNet submits that a reasonable risk adjustment must be included in base cost estimates to allow the recovery of efficient and prudent costs in accordance with the capex objectives in the NER.

Energy Users Association of Australia (EUAA)

The EUAA agrees with the findings made by the AER in its draft decision, and in particular supports the AER's focus on the efficiency of the timing of SP AusNet's replacement decisions.³⁸

Energy Users' Coalition of Victoria (EUCV)

The EUCV notes that on an inter-period benchmarking basis, the AER's draft decision implies a continuation of SP AusNet's current period rate of capex, which it considers reasonable in principle.

The EUCV submits that SP AusNet's use of the concept of a 'probability of failure' as a basis for replacement may lead to earlier replacement of assets than would be the case if it undertook an age-based replacement program. Further, the EUCV notes from its review of the AER's consultants' reports that SP AusNet appears to be attempting to 'standardize' its fleet of certain assets, commenting that:

Whilst EUCV members might see there is value in such an approach, their own experience is that the benefits of standardisation do not provide an economic basis for retiring non-standard plant early.³⁹

³⁶ SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p. 110.

³⁷ ElectraNet submission, *SP AusNet Transmission Network Revenue Cap Draft Decision*, 14 November 2007, p.2

³⁸ EUAA, *Submission – SP AusNet transmission draft revenue determination*, 3 December 2007, p.2.

The EUCV raises a number of concerns with SP AusNet's justification for its proposed capital works, including:

- The use of the Value of Customer Reliability (VCR) measure to estimate the likely impact on consumers of an asset failure, when the Value of Lost Load (VoLL) in the market is significantly lower.
- Lack of verification of the realisation of opex savings used to justify upfront replacement capex.⁴⁰

The EUCV supports the AER's additional review of a number of SP AusNet's proposed forecast capex projects in light of PB's high-level concerns regarding the efficient timing of asset replacements:

That the AER carried out such further analysis is supported by EUCV, and although EUCV cannot comment on the actuality of the outcomes, it accepts that the AER approach should at least result in an appropriate outcome.⁴¹

In relation to the AER's draft decision regarding labour and materials escalations, the EUCV submits the following:

- The impact of a rising Australian dollar on the cost of imported transmission equipment needs to be considered.
- Over the past 30 years, the labour market has consistently permitted a premium in wages over CPI, therefore an additional premium in the capex and opex allowances is inappropriate.
- For consistency the inflation estimate used in the WACC calculation should be used as the forecast of inflation when developing the real labour escalation.
- Allowing adjustments only for real labour and materials cost increases is inconsistent and unbalanced – the AER should include adjustments for all market conditions.⁴²

Transend

Transend notes that SP AusNet in its revised proposal appears to have provided substantial additional information in support of its original proposed forecast capex allowance. On this basis Transend is concerned that:

...the AER's Draft Decision has implicitly applied a more onerous test than that mandated by the Rules.⁴³

Transend raises concerns with the AER's approach in its draft decision to extrapolating findings from PB's detailed project review to the remainder of

³⁹ EUCV, *Victorian Electricity Transmission Revenue Reset: AER Draft Determination – A response by The Energy Users Coalition of Victoria*, November 2007, p.18.

⁴⁰ *ibid.*, p.18. The AER has addressed the EUCV's concerns regarding the opex/capex tradeoff at section 6.6.3 (opex) of this final decision.

⁴¹ *ibid.*, pp.19-20.

⁴² *ibid.*, pp.20-25.

⁴³ Transend, *Submission of the AER's Draft Decision on SP AusNet's Revenue Proposal*, 14 November 2007, p.2

SP AusNet's proposed forecast capex allowance. In particular, Transend is concerned by the AER's use of multiple consultants in its review of SP AusNet's proposed forecast capex allowance:

Specifically, the concern is that using a combination of consultants encourages the application of inconsistent or overlapping approaches, with the concomitant risk of forecasting error.⁴⁴

In relation to the contingency allowance, Transend submits that the Evans & Peck report submitted by SP AusNet appears to justify inclusion of its proposed contingency allowance for station projects. Transend submits that it is appropriate to include a contingency allowance in the forecast capex allowance, as:

- Forecasts are produced for relatively long periods of time (5 years or more).
- Project costs cannot be known with certainty before project commencement.
- Risk factors are asymmetric in terms of their impact on outturn costs.⁴⁵

4.5 Regulatory requirements

The AER must assess the forecast of capex included in SP AusNet's revised proposal under the same provisions of the NER as that included in its original proposal:

- SP AusNet's revenue proposal must include a forecast of the total capex which SP AusNet considers is required over the forthcoming regulatory control period to achieve each of the capex objectives in cl. 6A.6.7(a)
- The AER must accept the forecast capex included in the revised revenue proposal if the AER is satisfied that it meets the capital expenditure criteria in cl. 6A.6.7(c). If the AER is not so satisfied, it must not accept the forecast of required capital expenditure
- In deciding if it is satisfied or not, the AER must have regard to the capital expenditure factors in cl. 6A.6.7(e).

If, in its final decision on SP AusNet's revenue proposal, the AER does not accept the forecast of required capital expenditure for the regulatory control period, the AER must use a substitute forecast of the total required capex for the regulatory control period that the AER is satisfied reasonably reflects the capex criteria, taking into account the capex factors.⁴⁶

The AER must also include in its final decision the forecast capex for each year of the regulatory control period which the AER is satisfied reasonably reflects the capex criteria taking into account the capex factors – subject only to the requirement that the total of such forecasts must equate to the aforementioned forecast of the total required capex for the regulatory control period.⁴⁷

⁴⁴ *ibid.*, p.3

⁴⁵ *ibid.*, p.4

⁴⁶ NER, cl. 6A.6.7(f) and 6A.14.1(2)(ii).

⁴⁷ NER, cl. 6A.13.2(b)(4).

Cl. 6A.14.3(c) provides that, if a revised revenue proposal submitted by a TNSP in response to the AER's draft decision includes an amount of total forecast capex for the regulatory control period that is the same as that accepted or estimated (as the case may be) by the AER in its draft decision, then the AER must accept that amount of total forecast capex except to the extent that:

- either or both the following apply:
 - (i) other changes have been made in the revised revenue proposal, or
 - (ii) the information contained in or accompanying the revised proposal differs from that contained in or accompanying the previous revenue proposal;
- and the changes are such that the AER is not satisfied that the total forecast capex reasonably reflects the capex criteria, taking into account the capex factors.

4.6 Issues and the AER's considerations

In its revised proposal SP AusNet has included a significant volume of additional information in response to matters raised in the AER's draft decision. In doing so it seeks to justify the reinstatement of the majority of its originally proposed forecast capex allowance, and in particular to address the concerns raised by the AER in relation to the lack of economic analysis underpinning its original proposal. The AER has assessed this new and updated information in conjunction with the information provided by SP AusNet in and as part of its original revenue proposal.

Transend notes that SP AusNet's revised proposal appears to provide compelling information in support of its original proposal and on this basis expresses concern that the AER in its draft decision has applied a more onerous test than that prescribed in clause 6A.6.7 of the NER. The import of this new information, and the degree to which it has given the AER cause to depart from its draft decision, is discussed in the analysis that follows. Transend's point, however, is somewhat misplaced. The very fact that SP AusNet did not provide this information prior to the draft decision meant that the AER and interested parties did not have the opportunity to consider it at that time. The new framework in chapter 6A is clear in requiring TNSPs to provide a comprehensive and fully supported proposal at the time of its submission to allow full consideration of and consultation on that proposal.

Of perhaps more concern than SP AusNet's failure to provide this information before its proposal was challenged in the AER's draft decision, is the fact that the new and updated information now provided in many instances substantially contradicts, or seeks directly to correct, information provided in its original proposal. Even in SP AusNet's revised proposal, the AER has had to investigate discrepancies between the capex cost information templates (which are a direct input to the PTRM) and the positions presented in the revised proposal documentation.⁴⁸ This reflects poorly on the level of due diligence applied by SP AusNet in preparing its proposal and on its regard for the integrity and transparency of the transmission determination process.

⁴⁸ Corresponding adjustments have been made to SP AusNet's proposed capex for a number of forecast capex projects. These are discussed in section 4.6.3.

The AER notes that SP AusNet has in its revised proposal prepared economic analysis, of varying detail, to support the reinstatement of the vast majority of its original proposed forecast capex allowance. Notwithstanding that this should have been provided by SP AusNet as part of its original proposal, the AER generally supports the approach and methodology adopted by SP AusNet in the economic analysis used to support its revised proposal. However the results presented by SP AusNet are in some cases highly questionable. The AER maintains, as in its draft decision, that a number of proposed projects are not supported by a robust and conclusive economic analysis, with all alternatives considered. It appears that SP AusNet has adopted a philosophy of identifying the least cost option to undertake its pre-defined work program, without first seeking to justify the proposed work program on its merits as prudent and efficient.

As in the draft decision, the key issue impacting SP AusNet's revised proposal for forecast capex relates to the efficient timing of asset replacements based on their condition. In this respect, the AER notes the EUCV's concerns that a condition-based replacement strategy may lead to early replacement of assets compared with a replacement strategy based on asset age. While under a condition-based replacement strategy an asset's technical life may fall short of its economic life, evidence from SP AusNet suggests that in some cases assets are kept in service beyond their regulatory (technical) life. Given this apparent symmetry, the AER supports SP AusNet's condition-based replacement strategy as reasonable and appropriate. This being the case, the AER does not accept SP AusNet's arguments regarding 'fleet management' of its large 66kV LG4C fleet of circuit breakers, which amounts to an age-based replacement strategy, and does not appear to be adequately informed by the current condition of the assets.

In response to the AER's draft decision, SP AusNet engaged consultants Evans & Peck (E&P) to identify and quantify risks associated with each of its proposed station rebuild / refurbishment projects, and to recommend an appropriate contingency allowance. The AER accepts in principle that certain unquantifiable risks need to be captured in SP AusNet's forecast capex allowance for complex station rebuild / refurbishment projects, but reiterates that the total forecast capex approved is an allowance only, and is not tied to a fixed, project-specific, work program. Within the approved allowance, SP AusNet retains the discretion regarding the allocation and expenditure of capital, and is expected to be responsive to changing conditions in order to meet the prescribed capex objectives. The AER's consideration of SP AusNet's proposed contingency allowance is set out at section 4.6.2.1 of this final decision.

This section is set out as follows:

- Section 4.6.1 summarises the AER's considerations regarding a number of specific projects proposed by SP AusNet
- Section 4.6.2 addresses SP AusNet's revised proposal regarding elements of its cost accumulation process (including the contingency allowance and escalations)
- Section 4.6.3 addresses the discrepancies identified in SP AusNet's revised cost templates.

4.6.1 Project specific adjustments

This section sets out the AER's consideration of SP AusNet's revised proposal for a number of specific forecast capex projects. The AER's detailed analysis and conclusions with respect to the projects listed below is set out in Appendix A to this final decision, and was informed by independent reviews of SP AusNet's revised proposal by PB Strategic Consulting (PB)⁴⁹ and Nuttall Consulting (NC).⁵⁰

4.6.1.1 Refurbishment of Hazelwood Power Station Switchyard (HWPS)

In its draft decision the AER was satisfied that SP AusNet had demonstrated a clear need to replace 24 bulk-oil circuit breakers (CBs) as part of the HWPS project, given that the assets had been assigned a relatively high risk of failure in SP AusNet's CB risk model. However, on the basis of PB's advice, the AER was not satisfied that SP AusNet's proposed capex on a number of items of ancillary equipment at HWPS reasonably reflected prudent and efficient capex in accordance with the NER. The AER rejected SP AusNet's proposed forecast capex of \$35.7m and approved a substitute allowance of \$29.67m.

In its revised proposal SP AusNet states that much of the ancillary equipment excluded from the capex allowance in the AER's draft decision (eg. pin and cap insulators, line side disconnectors, CVTs, surge arrestors) exceeds 40 years of age and is showing increased signs of age-based deterioration. SP AusNet concludes from its economic analysis that, given the current age and condition of the equipment in question, upfront replacement as part of the wider HWPS project is the least-cost option. SP AusNet also submitted a revised cost estimate for its proposed control building at HWPS, indicating a 100% increase over the cost estimate contained in its original proposal. Overall, SP AusNet's revised proposal reinstates its original proposed scope of works for the HWPS project, at a higher total cost of \$36.4m.

PB examined the information submitted by SP AusNet in support of its revised proposal for the HWPS project. PB considers that although some of the assumptions underlying SP AusNet's economic analysis regarding the ancillary equipment are subjective, the integration of these replacements as part of the wider HWPS appears to represent a prudent and efficient outcome. PB recommends rejecting the additional \$0.69m of control building costs included in SP AusNet's revised cost estimate on the basis that it exceeds its benchmark control room costs.

After examining the information provided, the AER agrees with PB's view that there are a number of subjective assumptions included in SP AusNet's analysis that appear to disadvantage the deferral option. Despite these reservations the AER accepts PB's recommendation that replacement of the ancillary equipment as part of the integrated HWPS project appears to represent a prudent and efficient alternative to deferral. The AER accepts PB's recommendation to remove an allowance of \$0.69m for control building costs on the basis that PB's benchmark control building costs reasonably reflect efficient and prudent costs in accordance with the capex criteria.

⁴⁹ PB Strategic Consulting, *SP AusNet revenue reset - Advice on revised revenue proposal*, 8 January 2008.

⁵⁰ Nuttall Consulting, *SP AusNet Revised Proposal – Review of selected ex ante projects*, 26 November 2007.

On this basis the AER has rejected SP AusNet’s proposed forecast capex for the HWPS project and approved a substitute allowance of \$35.58m for the HWPS project.

Table 4.5: AER’s final decision – Refurbishment of HWPS switchyard (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER’s draft decision	4.62	10.29	7.52	2.32	4.52	0.42	29.67
SP AusNet’s revised proposal**	4.90	12.39	8.60	3.40	5.60	1.50	36.39
AER’s final decision	4.89	11.64	8.58	3.39	5.59	1.50	35.58
AER’s adjustment	-0.01	-0.75	-0.02	-0.01	-0.01	0.00	-0.81

Table source: AER draft decision, 31 August 2007, pp.104, 272; SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.112.

* Capex as incurred.

** The AER has assumed that all control building costs for the HWPS project are to be incurred in 2009-10.

4.6.1.2 Redevelopment of Richmond Terminal Station (RTS)

In its draft decision the AER was not satisfied that all the elements of SP AusNet’s proposed scope of works at RTS reasonably reflected prudent and efficient capex required to meet the capex objectives over the forthcoming regulatory control period. The AER rejected SP AusNet’s proposed capex allowance for this project, and approved a substitute allowance which excluded the following elements of SP AusNet’s proposed forecast:

- replacement of three 220/66 kV transformers
- redevelopment of the 66kV switchyard
- incremental cost of reconfiguring the 220kV switchyard.

In total, the capex estimate substituted by the AER in its draft decision represented a downward adjustment of \$54.81m to SP AusNet’s original proposed forecast capex for this project of \$89.7m.

SP AusNet’s revised proposal for the RTS redevelopment is for a fully integrated project to be undertaken entirely within the forthcoming regulatory control period, with \$16.7m of capex brought forward to accommodate the inclusion of 22kV switchyard works. The project scope has changed and now includes the redevelopment of the 220kV, 66kV and 22kV switchyards as well as the replacement of the 220/66kV transformers, at a revised cost estimate of \$110.8m. SP AusNet states that, based on an economic analysis provided by consultants Connell Wagner, its proposal for a fully integrated RTS redevelopment project has a lower NPV than the deferred replacement option approved by the AER in its draft decision.

SP AusNet advises that in contrast to its previous advice, its updated transformer condition ranking model indicates that the RTS B1 transformer is one of the worst condition units in its entire fleet (ranked 56 out of a possible ranking of 63), and is therefore among its highest priorities for replacement. SP AusNet submitted a further report by its consultants GHD on the subsidence issues within the 66kV switchyard. Although the GHD report suggests some cost-effective short term remedial measures,

SP AusNet concludes that the relocation of the 66kV switchyard should not be deferred as there is no viable long term solution for the site civil issues described. Finally, SP AusNet submits that the ring bus arrangement for the 220kV switchyard suggested in the AER's draft decision is not appropriate for a large terminal station such as RTS.

PB considers that the new information presented by SP AusNet supports its proposal for a fully integrated RTS redevelopment project, especially given:

- the 'unmanageable' risk presented by subsidence in the 66kV switchyard, and
- the updated condition ranking for the B1 transformer.

PB accepts that the new information provided by SP AusNet in its revised proposal supports its reconfiguration of the 220kV switchyard into a three CB 'breaker-and-a-half' arrangement. However in the absence of a clear economic justification, PB is not satisfied of the need for, or the efficiency of, a number of items included in the revised cost estimate. As a result of this assessment, PB recommends a reduction of \$11.9m to SP AusNet's revised proposal for RTS. Finally, PB recommends that SP AusNet's original expenditure profile be maintained, so that all costs are incurred in the final three years of the forthcoming regulatory control period.

The AER accepts PB's advice that, while the remedial measures suggested by GHD for the 66kV switchyard appear relatively cost effective, they are unlikely to provide a viable long term solution to the risks posed by subsidence at the site. The AER accepts PB's recommendation that the additional and updated information presented by SP AusNet demonstrates that the asset failure risk associated with the B1 transformer at RTS supports its replacement within the forthcoming regulatory control period. Despite some reservations with SP AusNet's NPV analysis, the AER accepts PB's advice that SP AusNet's integrated RTS redevelopment proposal appears to be a reasonable and prudent approach to addressing the risks identified at the station. The AER accepts PB's recommendation to reject \$11.9m of capex included in SP AusNet's revised cost estimate, and for the original expenditure profile to be maintained. Given the subsidence issues identified in the 22kV switchyard, the AER has included an allowance of \$1.5m for remedial works, which allows for the deferral of all remaining capex to the end of the forthcoming regulatory control period.

Finally, the AER notes that the cost templates submitted by SP AusNet with its revised proposal indicate a proposed forecast capex allowance of \$127.2m for this project. SP AusNet has advised that it made an error, and that the correct figure should be \$110.8m. On this basis the AER has made a further reduction of \$16.4m to SP AusNet's revised proposal for the RTS project.

In summary, the AER has rejected SP AusNet's revised proposal for the RTS project, and approved a substitute forecast capex allowance of \$96.70m.

Table 4.6: AER's final decision – Redevelopment of RTS (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER's draft decision	0.00	0.00	0.00	0.00	18.22	16.66	34.89
SP AusNet's revised proposal (as advised)	3.90	9.60	8.20	7.60	44.30	37.20	110.80
SP AusNet's revised proposal (revised cost templates)	3.40	2.86	0.00	9.68	60.47	50.79	127.19
AER's final decision	1.53	0.00	0.00	7.61	47.58	39.98	96.70
AER's adjustments	-1.87	-2.86	0.00	-2.07	-12.89	-10.82	-30.50

Table sources: AER draft decision, 31 August 2007, pp.104, 278; SP AusNet, email to the AER, 12 December 2007; SP AusNet, *SPA Revised Templates – Cost information lodged 12102007.xls*.

* Capex as incurred.

4.6.1.3 Transformer replacements

In its draft decision the AER was not satisfied that capex associated with SP AusNet's proposed transformer replacements at Bendigo (BETS), Dederang (DDTS), Yallourn (YPS) and in the Melbourne metropolitan area reasonably reflected prudent and efficient capex in accordance with the NER. The capex estimate substituted by the AER represented a downward adjustment of \$22.4m to SP AusNet's proposed forecast capex for this project.

In its revised proposal SP AusNet states that it has updated its transformer ranking model since lodging its original revenue proposal. The updated model now indicates that the transformers rejected for replacement in the AER's draft decision are in poorer condition than suggested in its earlier model. SP AusNet challenges the AER's suggestion that transformer replacements can be deferred given the availability of spare units, stating that it is tantamount to adopting a run-to-failure strategy.

In particular, SP AusNet submits that:

- the units at DDTS are not suitable for refurbishment given their age and condition, and that an economic evaluation with various options supports replacement in the forthcoming regulatory control period
- the results of its updated transformer condition ranking and an economic analysis supports replacement of the BETS units as proposed
- its updated transformer condition model indicates that there are seven metropolitan ASEA transformers with a high ranking, and that therefore its original proposal for replacement of two units is conservative.

PB comments that although the inclusion of new condition variables in the transformer condition model appears appropriate from a technical perspective, the significant change in outputs in SP AusNet's revised model requires detailed review to verify the reasonableness of the input assumptions.

For DDTS, while recognising the increase in failure risk presented in SP AusNet's updated transformer model, PB maintains that the consequences of failure are somewhat mitigated by the spare units specifically assigned to the station. PB states that once these corrections and assumptions are incorporated into SP AusNet's economic analysis, the 'do nothing' option in fact represents the least cost alternative, as opposed to upfront replacement at DDTS. PB has examined SP AusNet's economic analysis comparing the replacement and refurbishment options at BETS, and concludes that it is neither robust nor conclusive in supporting its preferred upfront replacement option. PB recommends an allowance of \$1.0m be included in SP AusNet's forecast capex allowance to refurbish the two worst condition units at BETS over the forthcoming regulatory control period. Finally, PB considers that SP AusNet has presented limited additional information to justify reinstatement of an allowance to replace a second metropolitan ASEA unit. In addition, given its recommendations on the RTS project, PB recommends removing the capex allowance for replacement of the first ASEA transformer included in the AER's draft decision, resulting in a further downward adjustment of \$4.5m.

Overall, PB recommends inclusion of a capex allowance of \$2.9m for the targeted transformer replacement program, a reduction of \$25.9m from SP AusNet's revised proposal.

The AER accepts PB's advice that, given the availability of fully compatible spare units ready to be placed in service at DDTS, deferring the replacement does not endorse a 'run-to-failure' strategy as suggested by SP AusNet – the spare units should in fact form a key component of SP AusNet's economic justification for upfront replacement. The AER notes that the economic analysis presented by SP AusNet for DDTS is generic, rather than tailored to the specific circumstances at the station, and agrees with PB that the 'do nothing' option represents the least cost alternative. The AER accepts PB's advice that there are only two units at BETS likely to require attention over the forthcoming regulatory control period, and after closely examining the economic analysis presented, agrees with PB that refurbishment of the two highest ranked units at a cost of \$1.0m represents the least cost alternative, rather than the upfront replacement of all six units. Finally, given the opportunities to utilise spare ASEA units released from its metropolitan station rebuild program (in particular, RTS), the AER accepts PB's advice that SP AusNet has not justified a need for a further generic capex allowance to replace metropolitan ASEA transformers.

On the basis of PB's recommendations the AER has rejected SP AusNet's revised proposal for the transformer replacement program, and approved a substitute forecast allowance of \$2.9m.

Table 4.7: AER's final decision – Transformer replacements (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER's draft decision	0.00	0.00	4.50	1.90	0.00	0.00	6.40
SP AusNet's revised proposal**	3.50	5.40	2.00	5.50	7.90	4.50	28.80
AER's final decision	0.00	0.00	1.00	1.90	0.00	0.00	2.90
AER's adjustment	-3.50	-5.40	-1.00	-3.60	-7.90	-4.50	-25.90

Table source: AER draft decision, 31 August 2007, pp.104, 283; SP AusNet, *Electricity Transmission Revised Proposal, 12 October 2007*, p.117.

* Capex as incurred.

** This figure appears to (incorrectly) include SP AusNet's original proposed capex allowance of \$3.8m for like-for-like replacement of the Yallourn transformer, rather than the AER's approved \$1.9m allowance accepted by SP AusNet in its revised proposal.

4.6.1.4 Replacement of station and control centre SCADA

In its draft decision the AER was satisfied that SP AusNet had demonstrated that capex was required to replace and upgrade its SCADA systems within the forthcoming regulatory control period. However, on the basis of PB's advice, the AER did not accept that SP AusNet's proposed capex on enhancements to the SCADA system reasonably reflected prudent and efficient capex required to meet the capex objectives. The capex estimate substituted by the AER represented a downward adjustment of \$8.2m to SP AusNet's proposed forecast capex for this project.

For the purpose of its revised proposal SP AusNet accepts the AER's draft decision on capex for the replacement of station and control centre SCADA. The AER notes however that the cost templates submitted by SP AusNet with its revised proposal indicate a proposed forecast capex allowance of \$28.5m (as incurred, \$2007-08) for the SCADA project – lower than that approved in the draft decision. SP AusNet advised that an error was made in generating its revised cost templates, and that the correct proposed amount for the SCADA project should be that approved by the AER in its draft decision. The AER accepts SP AusNet's advice, and has made an upwards adjustment of \$7.2m to correct the error identified.

Given SP AusNet's acceptance in its revised proposal of the AER's draft decision with respect to the SCADA project, the AER is satisfied that a forecast capex allowance of \$35.7m for this project reasonably reflects the capex criteria, taking into account the capex factors.

Table 4.8: AER's final decision – Replacement of SCADA systems (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER's draft decision	11.10	6.60	5.10	4.00	6.10	2.80	35.70
SP AusNet's revised proposal (as advised)	10.50	6.00	4.70	4.50	7.90	2.30	35.90
SP AusNet's revised proposal (revised cost templates)	8.80	4.60	3.60	3.50	6.70	1.30	28.50
AER's final decision**	11.10	6.60	5.10	4.00	6.10	2.80	35.70
AER's adjustment	2.30	2.00	1.50	0.50	-0.60	1.50	7.20

Table sources: AER draft decision, 31 August 2007, p. 285; SP AusNet, email to the AER, 12 December 2007; SP AusNet, *SPA Revised Templates – Cost information lodged 12102007.xls*.

* Capex as incurred

** The AER has implemented its draft decision allowance and expenditure profile for this project.

4.6.1.5 Response capability for undefined works

In its draft decision, the AER was not satisfied that SP AusNet had demonstrated that a \$5.5m allowance for undefined works reasonably reflected prudent and efficient capex required to meet the capex objectives. In particular, it considered that SP AusNet's 'bottom up' cost estimation processes are accurate down to a fine level of detail, and that SP AusNet should be able to account for unforeseen events with prudent asset management practices. On this basis the AER rejected SP AusNet's forecast capex for response capability for undefined works, and approved no allowance.

In its revised proposal, SP AusNet states that its estimate of \$5.5m was derived from a review of completed unforeseen works by its engineering staff, and that over the current regulatory control period its prudent asset management processes identified the need for an additional \$45m of unforeseen capital works. Evans & Peck (E&P) was engaged to undertake risk modelling based on these historic works, and on the basis of its analysis derived a most likely value of unforeseen works of \$14.5m for the forthcoming regulatory control period. SP AusNet concludes that, by comparison, its proposed \$5.5m allowance for the forthcoming regulatory control period is relatively conservative, and reasonable based on its engineering judgment.

PB considers that SP AusNet has provided no new information in its revised proposal to support the inclusion of its proposed \$5.5m allowance for this project. PB maintains the view that SP AusNet already has the ability to address the risk of minor unforeseen works in its detailed project and program forecasts and through its asset management practices.

The AER agrees with PB's assessment and considers that an allowance of undefined scope is not required by a prudent and efficient TNSP to meet the capex objectives in cl. 6A.6.7(a). The analysis undertaken by E&P does not substantiate SP AusNet's proposed allowance, nor does it take into account SP AusNet's ability to mitigate the risk or meet the cost of unforeseen events as raised previously by the AER and PB. The AER has therefore rejected SP AusNet's proposed forecast capex allowance for

response capability for undefined works, and has approved no allowance for this project.

Table 4.9: AER’s final decision – Response capability for undefined works (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER’s draft decision	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SP AusNet’s original proposal	0.92	0.92	0.92	0.92	0.92	0.90	5.50
AER’s final decision	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AER’s adjustment	-0.92	-0.92	-0.92	-0.92	-0.92	-0.90	-5.50

Table source: AER draft decision, 31 August 2007, p.287; SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.117.

* Capex as incurred

4.6.1.6 Replacement of post-type Current Transformers

The AER’s draft decision accepted that SP AusNet had demonstrated that a capex allowance was required to replace current transformers (CTs) over the forthcoming regulatory control period, due to the unacceptable risk associated with explosive CT failure. However the AER was not satisfied that capex to replace 24 sets of CTs assessed by SP AusNet as having a life expectancy of between eight and ten years in the CT failure risk model reasonably reflected prudent and efficient capex in accordance with the NER. On this basis the AER rejected SP AusNet’s proposed allowance of \$24.5m for this project and approved a substitute forecast of \$15.41m.

In its revised proposal SP AusNet has provided a significant amount of new and updated information to support the reinstatement of its originally proposed CT replacement program. SP AusNet states that implementation of the AER’s draft decision will not provide for an improvement in CT failure risks sufficient for it to comply with the *Occupational Health and Safety Act 2004 (Vic)* (OH&S Act). In its revised proposal SP AusNet has provided two key economic arguments to support its original proposal to replace all CTs with a life expectancy of ten years or less:

- The optimum timing of planned replacement of a CT is in the period 5 to 10 years prior to its predicted end of life
- SP AusNet’s originally proposed CT replacement program provides a lower cost option than the AER’s draft decision.

SP AusNet also states that the AER’s draft decision did not adequately take account of CT replacements disallowed as part of station rebuild / refurbishment projects. On this basis SP AusNet has submitted a ‘conditional’ revised proposal of \$27.8m which includes an allowance for further CT replacements at a number of stations should the AER maintain its draft decision position.

PB considers that SP AusNet has failed to explicitly quantify any material reduction in either the annual CT failure rates or the exposed loss of supply risks based on its original capex proposal, or why it must now significantly reduce its CT failure risks in order to comply with the OH&S Act as opposed to maintain them at similar to existing levels. PB reviewed the detailed documentation submitted by SP AusNet in

support of its two key economic arguments for reinstatement of its original proposed CT replacement program. PB considers that although the methodology adopted by SP AusNet in its economic analysis is sound, the results are fundamentally dependent on the input assumptions. After conducting sensitivity analysis, PB concludes that with more reasonable input assumptions, the optimum timing for planned CT replacement is between zero and five years prior to predicted life expiry, thereby supporting the position taken in the AER's draft decision to defer CT replacements. Similarly in relation to the least cost analysis presented, PB concludes that SP AusNet may have overstated the frequency and consequences of CT failures. After including input assumptions it considers more reasonable, PB concludes that the AER's draft decision position represents the least cost option. Overall, PB recommends a forecast capex allowance of \$16.2m for the CT replacement program, representing a reduction of \$8.3m from SP AusNet's revised proposal.

The AER considers that the additional information provided by SP AusNet in support of its proposed CT replacement program is soundly focused on addressing the issues raised by the AER in its draft decision. In particular, the AER notes the quality of genuine cost-benefit analysis undertaken by SP AusNet in its revised proposal to address the key issue of the efficient timing of CT replacements over the forthcoming regulatory control period. The AER agrees with PB, however, that the outcome of the economic analysis undertaken by SP AusNet is fundamentally dependent on key input assumptions.

In line with PB's advice, the AER disagrees with SP AusNet that the OH&S Act implies a 'significant reduction' in CT failure risk is necessary for compliance reasons. The OH&S Act explicitly requires SP AusNet to have regard to the costs of eliminating or reducing the hazard or risk in question in determining what is reasonably practicable in relation to ensuring health and safety. As PB suggests, SP AusNet has demonstrated in its revised proposal that cost is a relevant factor in its decisions regarding the timing of CT replacements. The AER has examined SP AusNet's community cost calculations,⁵¹ and considers them to be significantly overstated. After adjusting SP AusNet's calculations to correct input errors, the optimum timing for CT replacement falls from 5-10 years to 1-2 years before predicted life expiry. After making similar adjustments to the input assumptions adopted in SP AusNet's least cost analysis, and on the basis of PB's advice, the AER considers that its draft decision position regarding CT replacements represents the least cost option.

On this basis the AER has rejected SP AusNet's proposed forecast capex for the CT replacement program, and approved a substitute forecast allowance of \$17.38m which will allow replacement of CTs identified by SP AusNet in its revised proposal as having a life expectancy of eight years or less.

Given the AER's position in this final decision with respect to SP AusNet's proposed station rebuild / refurbishment projects, it is unnecessary to consider SP AusNet's 'conditional' proposal for a further \$3.3m capex allowance for the CT replacement program.

⁵¹ The 'community costs' are incorporated in SP AusNet's 'consequences' of failure calculations, the avoidance of which represent a benefit of CT replacement.

Table 4.10: AER's final decision – Replacement of post-type CTs (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER's draft decision	2.80	2.50	2.40	2.83	2.28	2.50	15.41
SP AusNet's revised proposal	4.82	6.12	5.22	4.22	2.72	1.40	24.50
AER's final decision	3.14	2.84	2.74	3.18	2.63	2.85	17.38
AER's adjustment	-1.68	-3.28	-2.48	-1.04	-0.09	1.45	-7.12

Table source: AER draft decision, 31 August 2007, pp.104, 292; SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.119.

* Capex as incurred.

4.6.1.7 Vehicle replacements

In its draft decision the AER rejected SP AusNet's proposed forecast of \$8.4m in vehicle replacement costs and substituted a revised forecast of \$4.98m which reflected SP AusNet's vehicle replacement profile from the current regulatory control period.

For the purpose of its revised proposal SP AusNet accepted the AER's draft decision on capex for the replacement of vehicles in the forthcoming regulatory control period.

On this basis the AER is satisfied that the forecast capex associated with this project in SP AusNet's revised proposal, which implements without change the AER's draft decision on this matter, reasonably reflects the capex criteria, taking into account the capex factors.

Table 4.11 AER's final decision – Vehicles (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER draft decision	0.83	0.83	0.83	0.83	0.83	0.83	4.98
SP AusNet revised proposal	0.83	0.83	0.83	0.83	0.83	0.83	4.98
AER final decision	0.83	0.83	0.83	0.83	0.83	0.83	4.98

Table source: AER draft decision, 31 August 2007, p.294; SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.119

* Capex as incurred

4.6.1.8 Inventory

The AER's draft decision identified \$0.24m of forecast expenditure on inventory that was inappropriately classified as capex. This amount related to 'normal store lines' (eg. nuts, bolts, washers etc.), and should in fact have been classified as opex. On this basis the AER rejected SP AusNet's proposed forecast capex for inventory and substituted a revised forecast of \$2.01m. A corresponding increase of \$0.24m was made to SP AusNet's proposed forecast opex to offset this adjustment.

For the purpose of its revised proposal SP AusNet has accepted the AER's draft decision on this matter and adopted the AER's treatment of inventory costs.

On this basis the AER is satisfied that the forecast capex for inventory in SP AusNet's revised proposal, which implements without change the AER's draft decision on this matter, reasonably reflects the capex criteria, taking into account the capex factors.

Table 4.12: AER's final decision – Inventory (\$m, 2007-08)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER's draft decision	0.31	0.34	0.34	0.34	0.34	0.34	2.01
SP AusNet's revised proposal	0.31	0.34	0.34	0.34	0.34	0.34	2.01
AER's final decision	0.31	0.34	0.34	0.34	0.34	0.34	2.01

Table source: AER draft decision, 31 August 2007, p.83; SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.120

4.6.1.9 Replacement of 500kV CBs

In its draft decision, the AER was not satisfied that the \$4.20m of capex associated with SP AusNet's proposed targeted replacement of two 500kV CBs reasonably reflected prudent and efficient capex in accordance with the NER. The AER approved a substitute allowance of \$2.10m for the replacement of one of the CBs proposed.

In its revised proposal, SP AusNet has reinstated this project with the same scope as in its original proposal, and the full capex allowance of \$4.20m. In support of this project, SP AusNet states that replacement of both CBs are required to enable it to undertake its refurbishment program.

Nuttall Consulting (NC) concludes that while SP AusNet's revised proposal presents new information that strengthens the case made in its initial proposal, the need for replacement of a second 500kV CB remains unsubstantiated. NC states that a CB could be retired without the need to replace it – for example by changing the switching configuration. On this basis, NC does not consider that SP AusNet's proposed refurbishment option to replace two CBs for refurbishment purposes represents prudent and efficient expenditure.

The AER notes NC's view that there are likely to be lower cost solutions available to retire a second CB without incurring the full replacement capex, and that these should have been considered by SP AusNet in an economic analysis. On this basis the AER accepts NC's conclusion that SP AusNet has not justified the replacement of a second 500kV CB, and maintains its draft decision that the replacement of one CB represents an efficient and prudent level of capex required to meet the capex objectives. On this basis the AER has rejected SP AusNet's proposed forecast capex for this project, and approved a substitute forecast allowance of \$2.10m.

Table 4.13: AER's final decision – Replacement of 500kV CBs (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER's draft decision	0.00	2.10	0.00	0.00	0.00	0.00	2.10
SP AusNet's revised proposal	3.50	0.70	0.00	0.00	0.00	0.00	4.20
AER's final decision	2.10	0.00	0.00	0.00	0.00	0.00	2.10
AER's adjustment	-1.40	-0.70	0.00	0.00	0.00	0.00	-2.10

Table source: AER draft decision, 31 August 2007, p.76; SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.121.

* Capex as incurred.

4.6.1.10 Replacement of 66kV switch-bays

In its draft decision the AER was not satisfied that the need for targeted CB replacements at Horsham (HOTS) and Morwell (MWTS) at a forecast cost of \$3.49m had been demonstrated, given that SP AusNet's CB failure risk model showed the CBs to be in relatively good condition. SP AusNet's primary replacement driver – to release maintenance spares – was not justified given the opportunity to utilise 66kV LG4C units released from its station rebuild program. On this basis, the AER's draft decision rejected SP AusNet's proposed forecast, and did not approve an allowance for this project.

In its revised proposal SP AusNet states that the asset condition information it provided in its initial proposal masked poor performing cohorts within its 66kV LG4C CB fleet, as it only presented an average performance level. SP AusNet states that the assets at MWTS and HOTS are well below this average in terms of condition.

NC notes that the condition of the 66kV LG4C CBs now appears to be the main driver for replacement at MWTS, given that the CBs at the station are the third worst in the fleet in terms of maintenance frequency. NC comments on an apparent inconsistency in SP AusNet's revised proposal, in that SP AusNet has not proposed to replace CBs at Shepparton (SHTS) in the period 2008-14 despite these units being assessed as in relatively poorer condition than those at MWTS. In seeking to explain the inconsistency in treatment of CBs at SHTS, NC points to an apparent difference in criticality of the 66kV assets at MWTS (bus-tie) compared to SHTS (feeder). Although it has not been identified by SP AusNet, NC suggests that it may go some way towards explaining the greater risk associated with the CBs proposed for replacement at MWTS. Despite the inconsistency identified, NC concludes that on the balance of the information provided, SP AusNet has justified replacement at MWTS in the forthcoming regulatory control period.

NC states that SP AusNet's own economic modelling suggests that the CBs at HOTS will have an economic life of 55-60 years given their condition – well beyond the end of the forthcoming regulatory control period. On this basis NC recommends that no allowance be provided for targeted replacements at HOTS.

The AER accepts NC's recommendation to reject replacement of 66kV CBs at HOTS, given that SP AusNet's economic modelling suggests an economic life which extends beyond the end of the forthcoming regulatory control period. However the AER does

not accept NC's view that SP AusNet has demonstrated a clear need for the replacement CBs at MWTS within the forthcoming regulatory control period. Although the information provided by SP AusNet regarding the maintenance frequency of the 66kV LG4C CBs at MWTS indicates that they are in a poorer condition than CBs at other terminal stations, the AER is not satisfied that a case for replacement during the forthcoming regulatory control period has been clearly demonstrated. The AER notes that SP AusNet appears willing to accept the risk of CB failure at GTS and SHTS despite the apparently equivalent or stronger case for replacements at these stations based on the maintenance frequency data identified in SP AusNet's own analysis, and the ability to capture some efficiencies by integrating with wider projects recently undertaken or forecast at these stations.

While accepting NC's view that there may be other drivers or factors underpinning SP AusNet's proposal at MWTS to explain the inconsistency identified, the AER notes that these have not been articulated by SP AusNet. After re-examining SP AusNet's CB risk model outputs, the AER considers that NC has overlooked the fact that there is an equal number of bus-tie CBs at GTS as at MWTS that SP AusNet has elected to keep in service. On this basis the AER is not satisfied that SP AusNet has sufficiently demonstrated that its proposed capex reasonably reflects prudent and efficient capex required to meet the capex objectives.

The AER accepts SP AusNet's advice regarding the need for replacement of a number of poor performing protection schemes at MWTS for compliance reasons.

On this basis the AER rejects SP AusNet's proposal for targeted CB replacements at both MWTS and HOTS, and has approved a substitute allowance of \$0.5m for the replacement of protection schemes at MWTS only.

Table 4.14: AER's final decision – Replacement of 66kV CBs (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER's draft decision	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SP AusNet's revised proposal	1.27	2.06	0.14	0.02	0.00	0.00	3.49
AER's final decision	0.00	0.50	0.00	0.00	0.00	0.00	0.50
AER's adjustment	-1.27	-1.56	-0.14	-0.02	0.00	0.00	-2.98

Table source: AER draft decision, 31 August 2007, p.75; SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.124.

* Capex as incurred.

4.6.1.11 Redevelopment of Brooklyn Terminal Station (BLTS)

In its draft decision, the AER considered that there was a clear need for the replacement of specific transformers at this station, but was not satisfied that the proposed replacements within the 220kV and 66kV switchyards were supported by the outputs of the CB risk model. The AER's draft decision approved a substitute forecast of \$38.46m for this project, a reduction of \$13.40m from SP AusNet's original proposal.

SP AusNet's revised proposal reinstates the fully integrated redevelopment project set out in its original proposal, and its original forecast capex of \$51.86m. SP AusNet has provided a substantial amount of new supporting material in relation to this project in its revised proposal, including economic analysis indicating that its integrated option has a lower NPV cost than the project scope contemplated in the AER's draft decision. SP AusNet also states that the 66kV LG4C CBs at BLTS are part of a 'poor performing cohort' in worse condition than the average LG4C CB in its fleet.

NC concludes that SP AusNet's revised proposal has now justified the need for the replacement of assets identified in the 220kV and 66kV switchyards that are required to accommodate the planned changes to the transformer arrangement. However, NC considers that the information provided by SP AusNet on the condition of the 66kV CBs at BLTS indicates that they are closer to the average fleet condition, rather than part of a poorer performing cohort as suggested by SP AusNet. NC concludes that, based on SP AusNet's own economic analysis, the 66kV CBs at BLTS will likely have an economic life of between 55 and 60 years, and therefore recommends deferral of replacement of those CBs not required for switching purposes.

The AER accepts NC's view that SP AusNet has now justified the need to replace the 220kV CBs at BLTS, given that its revised CB risk model outputs suggest that these units are in a condition comparable to that of other CBs for which a replacement allowance has been approved in the AER's draft decision. The AER accepts NC's advice that the new transformer arrangement is a prudent and efficient outcome, and on this basis also accepts that the integrated replacement of eight 66kV CBs is reasonable and appropriate. The AER also accepts NC's advice that the ten remaining 66kV CBs at BLTS can be prudently and efficiently deferred beyond the end of the forthcoming regulatory control period given their condition. On this basis the AER has rejected SP AusNet's proposed forecast capex for the BLTS project and approved a reduced substitute forecast of \$47.63m.

Table 4.15: AER's final decision – Redevelopment of BLTS (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER's draft decision	0.00	0.00	3.71	20.65	14.11	0.00	38.46
SP AusNet's revised proposal	0.00	0.00	5.19	29.87	16.80	0.00	51.85
AER's final decision	0.00	0.00	4.76	27.43	15.44	0.00	47.63
AER's adjustment	0.00	0.00	-0.43	-2.43	-1.37	0.00	-4.23

Table source: AER draft decision, 31 August 2007, pp.104, 298; SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.125.

* Capex as incurred.

4.6.1.12 Refurbishment of Thomastown Terminal Station (TTS)

While SP AusNet had demonstrated a clear need to replace the B2 transformer at TTS, in its draft decision the AER was not satisfied that it had identified a need to replace the B3 transformer. The AER was satisfied that SP AusNet's CB risk model justified the replacement of the 220kV CBs at TTS, but did not consider that the proposed replacement of 66kV LG4C CBs was justified given that all of these CBs had been assessed by SP AusNet as being in relatively good condition.

SP AusNet’s revised proposal reinstates the scope of works for the TTS refurbishment as set out in its original proposal, at a total cost of \$43.73m. In support of its proposed reinstatement of the B3 transformer replacement, SP AusNet states that its transformer assessment model has been upgraded, and now shows that the transformer condition ranking of the B3 unit is similar to that of the B2 transformer approved by the AER for replacement as part of the TTS project. SP AusNet states that the main drivers for its proposed replacement of the 66kV CBs at TTS are related to operational and efficiency considerations. SP AusNet’s revised proposal includes additional NPV analysis which indicates that its proposal for a fully integrated project at TTS has a marginally lower NPV than the various deferral options considered.

NC concludes that the outputs of SP AusNet’s updated transformer model indicate that the B3 transformer at TTS is in a similarly poor condition to the B2 transformer, and that replacement now appears justified. NC also concludes that it is appropriate to make allowance for the replacement of five 66kV CBs that will be required to switch the new transformer. However, NC does not consider that SP AusNet has justified the replacement of the remaining 66kV feeder CBs, as the condition of the LG4C CBs at TTS appears to be better than the average in the fleet. On this basis NC considers that SP AusNet’s own modelling indicates that it is reasonable and efficient for these CBs to continue to perform acceptably beyond 2020.

The AER accepts NC’s conclusion that the new information provided by SP AusNet now justifies replacement of the B3 transformer at TTS, and on this basis accepts that the replacement of the five 66kV CBs is necessary to allow for the efficient management of outages during the transformer replacement. The AER also accepts NC’s recommendation to defer the replacement of the remaining 66kV LG4C feeder CBs at TTS given their condition and the economic life implied by SP AusNet’s own economic analysis.

The AER rejects SP AusNet’s forecast capex for this project and approves a substitute allowance of \$38.19m.

Table 4.16: AER’s final decision – Refurbishment of TTS (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER’s draft decision	0.42	11.87	16.49	0.00	0.00	0.00	28.78
SP AusNet’s revised proposal	3.90	22.92	15.37	1.54	0.00	0.00	43.73
AER’s final decision	3.05	19.09	16.05	0.00	0.00	0.00	38.19
AER’s adjustment	-0.85	-3.83	0.68	-1.54	0.00	0.00	-5.54

Table source: AER draft decision, 31 August 2007, pp.104, 302; SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.126.

* Capex as incurred.

4.6.1.13 Refurbishment of Glenrowan Terminal Station (GNTS)

The AER’s draft decision accepted that SP AusNet had presented a clear need for the replacement of the transformer and the refurbishment of the 220kV switchyard at GNTS. However, the AER was not satisfied that SP AusNet had identified the need to

replace the 66kV LG4C CBs at GNTS, all of which had been assigned a 'medium/low' risk ranking in the CB risk model.

SP AusNet's revised proposal reinstates its original proposed scope of works for the GNTS project, again at a cost of \$21.32m. In support of the reinstatement of the 66kV CB replacements, SP AusNet states that the risk model that it provided in support of its initial proposal masked the actual condition of the assets at GNTS, and that they are in fact part of a poor performing cohort requiring maintenance at two to three times the frequency of a new CB. Based on its further analysis, SP AusNet states that its proposal for a fully integrated replacement project represents the least-cost option for GNTS, due to efficiencies gained in design, procurement, project management and establishment costs.

NC considers that the information presented by SP AusNet regarding the condition of the 66kV CBs at GNTS is a clear indication that they belong to a 'poor performing cohort', with an economic life of between 45 and 50 years according to SP AusNet's modelling. On this basis, NC considers that SP AusNet's proposed timing of 2011-12 for replacement of the 66kV CBs at GNTS is reasonable, given that they will be 44 years of age by that date, and assuming, on the basis of SP AusNet's advice that they are the poorest in the fleet, that an economic life nearer 45 years is the most appropriate for these CBs. On this basis NC concludes that SP AusNet has provided sufficient justification for the proposed 66kV works at GNTS during the forthcoming regulatory control period, and recommends reinstatement of the capex allowance disallowed in the AER's draft decision.

The AER notes the new information presented by SP AusNet indicating that the 66kV assets at GNTS are in fact in poor condition, and accepts NC's advice that these units belong to a 'poor performing cohort' with an economic life of between 45 and 50 years. However, notwithstanding their relatively poor condition, the AER is not satisfied on the balance of the information provided by SP AusNet that it would be prudent or efficient to replace *all* of these assets during the forthcoming regulatory control period. SP AusNet's own NPV analysis indicates that the fully integrated option is not the least cost option for its proposed works at GNTS, and that the savings associated with part deferral of the lower risk 66kV CBs suggest that this option is preferred. This in turn suggests that replacement of all assets within the forthcoming regulatory control period is neither prudent nor efficient.

The AER has therefore removed the costs of these works from SP AusNet's forecast capex for the GNTS refurbishment, and approved a substitute allowance of \$17.98m.

Table 4.17: AER's final decision – Refurbishment of GNTS (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER's draft decision	0.00	0.00	0.00	0.43	3.61	10.86	14.90
SP AusNet's revised proposal	0.00	0.00	0.00	0.43	6.82	14.07	21.32
AER's final decision	0.00	0.00	0.00	0.41	4.16	13.42	17.98
AER's adjustment	0.00	0.00	0.00	-0.02	-2.66	-0.66	-3.34

Table source: AER draft decision, 31 August 2007, pp.104, 307; SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.128.

* Capex as incurred.

4.6.1.14 Refurbishment of Keilor Terminal Station (KTS)

In its draft decision the AER accepted SP AusNet's forecast capex for replacements within the 500kV and 220kV switchyards at KTS, but rejected SP AusNet's proposed replacement of the 66kV LG4C CBs on the basis that the outputs of SP AusNet's CB risk model indicated the assets to be in relatively good condition. The AER therefore rejected SP AusNet's proposed forecast of \$39.62m and approved a substitute forecast of \$31.0m.

In its revised proposal, SP AusNet reinstates the KTS project as proposed in its original proposal, again at \$39.2m. In support of the reinstatement of the 66kV CB replacements SP AusNet submits that:

- the 66kV LG4C CBs are operating close to their full fault level, and will need to be replaced before the planned augmentation at KTS in 2011-12
- there are a number of high-risk 66kV assets that require replacement due to OH&S concerns (eg. CTs, surge arrestors).

NC does not consider that SP AusNet's revised proposal presents a clear case for the reinstatement of all the 66kV CBs identified for replacement, noting that SP AusNet has assigned the 66kV assets at KTS a low priority for replacement based on condition. On this basis NC considers that the 66kV CBs at KTS are closer to the 'average' fleet in terms of condition, and that it would not be prudent to replace them in the forthcoming regulatory control period. However NC accepts that there is a need to replace the poor performing 66kV equipment identified by SP AusNet for OH&S reasons.

The AER is not satisfied that SP AusNet has justified the need to replace all the 66kV assets at KTS, given NC's advice that the 66kV CBs are closer to the average fleet in terms of maintenance frequency and therefore expected to perform acceptably beyond 2018. The AER accepts NC's recommendation to include those high risk 66kV assets at KTS specifically identified by SP AusNet for replacement.

On this basis the AER has rejected SP AusNet's proposed forecast capex for this project, and approved a substitute allowance of \$34.17m.

Table 4.18: AER's final decision – Refurbishment of KTS (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER's draft decision	12.72	7.73	0.25	3.06	7.23	0.00	31.00
SP AusNet's revised proposal	15.14	12.22	0.25	3.92	8.09	0.00	39.62
AER's final decision	14.58	8.11	0.23	3.67	7.57	0.00	34.17
AER's adjustment (final decision)	-0.55	-4.10	-0.02	-0.25	-0.52	0.00	-5.45

Table source: AER draft decision, 31 August 2007, pp.104, 310; SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.129.

* Capex as incurred.

4.6.1.15 Refurbishment of Geelong Terminal Station (GTS)

In its draft decision, the AER accepted that SP AusNet had justified the replacement of the two 220/66 kV transformers and the refurbishment of the 220kV switchyard at GTS, but rejected its proposed capex for replacement of the 66kV CBs as part of the station project. These assets had been assigned a 'medium-low' risk ranking in SP AusNet's CB risk model, indicating that they were in relatively good condition.

SP AusNet's revised proposal accepts the AER's draft decision to remove the costs associated with replacement of the 66kV CBs at GTS. The AER also notes that the cost templates submitted by SP AusNet with its revised proposal indicate a proposed forecast capex allowance of \$19.6m (as incurred, \$2007-08) for the GTS project – lower than the AER's approved allowance. SP AusNet advised that an error was made in generating its revised cost templates with respect to the GTS project, and that the correct proposed amount should be \$26.5m.

The AER notes SP AusNet's acceptance of its draft decision in relation to the 66kV switchyard at GTS. On the basis of SP AusNet's 'corrected' revised proposal, the AER accepts that an amount of \$2.1m should be included in SP AusNet's forecast capex allowance for this project as a carryover from the current regulatory control period. However the AER has rejected a further unexplained increase of \$1.4m.

In sum, the AER has rejected SP AusNet's proposed capex for the GTS project of \$26.5m and approved an allowance of \$23.17m. This still represents an upwards adjustment of \$3.58m from SP AusNet's cost templates as submitted with its revised proposal.

Table 4.19: AER's final decision – Refurbishment of GTS (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER's draft decision	7.40	5.07	8.13	0.00	0.00	0.00	20.60
SP AusNet's revised proposal (as advised)	12.70	4.50	9.30	0.00	0.00	0.00	26.50
SP AusNet's revised proposal (revised cost templates)	11.16	2.75	5.68	0.00	0.00	0.00	19.58
AER's final decision	9.67	5.18	8.30	0.00	0.00	0.00	23.15
AER's adjustment	-1.48	2.43	2.62	0.00	0.00	0.00	3.56

Table source: AER draft decision, 31 August 2007, pp.104, 315; SP AusNet, email to the AER, 12 December 2007; SP AusNet, *SPA Revised Templates – Cost information lodged 12102007.xls*.

* Capex as incurred.

4.6.1.16 Total project specific adjustments

The AER's project specific adjustments to SP AusNet's proposed forecast capex allowance are set out in table 4.20.

Table 4.20: AER's final decision – project specific adjustments (\$m, 2007-08)*

	AER's draft decision	SP AusNet's revised proposal	AER's adjustment	AER's final decision
Refurbishment of HWPS	29.67	36.39	-0.81	35.58
Redevelopment of RTS^	34.89	127.19	-30.50	96.70
Transformer replacements	6.40	28.80	-25.90	2.90
Replacement of SCADA systems^	35.70	28.50	7.20	35.70
Response capability undefined for works	0.00	5.50	-5.50	0.00
Replacement of CTs	15.41	24.50	-7.12	17.38
Replacement of 500kV CBs	2.10	4.20	-2.10	2.10
Replacement of 66kV switch-bays	0.00	3.49	-2.98	0.50
Redevelopment of BLTS	38.45	51.85	-4.23	47.63
Refurbishment of TTS	28.78	43.73	-5.54	38.19
Refurbishment of GNTS	14.90	21.32	-3.34	17.98
Refurbishment of KTS	31.00	39.62	-5.45	34.17
Refurbishment of GTS^	20.61	19.58	3.56	23.15
TOTAL	257.91	434.67	-82.71	351.98

Table sources: SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, pp.102-131.

* Capex as incurred. The AER's project specific adjustments in table 4.20 for station rebuild / refurbishment projects include adjustments to SP AusNet's proposed contingency allowance. See section 4.6.2.1 for details.

^ SP AusNet's proposed forecast capex for these three projects listed in table 4.20 is that presented in the cost templates submitted with its revised proposal.

4.6.2 SP AusNet's cost accumulation process

This section is set out as follows:

- Section 4.6.2.1 addresses SP AusNet's revised proposal for the contingency allowance for station rebuild / refurbishment projects
- Section 4.6.2.2 addresses SP AusNet's revised proposal for labour and materials escalations

4.6.2.1 Contingency allowance

AER's draft decision

In its draft decision the AER did not accept SP AusNet's proposal to include a contingency allowance of \$24.8m for its station rebuild / refurbishment projects in its total forecast capex. While the AER recognised that it is a common budgeting practice to make allowances for contingencies, on the balance of the information available it was not satisfied that SP AusNet's proposed allowance was required to meet the capex objectives, for the following reasons:

- no evidence was provided to support the value of the proposed allowance assigned to individual projects
- the proposed allowance (averaging 7.0% of total project costs) appeared high with respect to the risks identified
- SP AusNet has experience in undertaking complex projects of this nature, reducing the need for such a significant and general contingency factor
- other areas of SP AusNet's forecasting (including the use of a 'brownfield' factor, input cost escalations and updated unit cost estimates) mitigate the impact of, and potentially double-count, certain risks and their associated costs.

SP AusNet's revised proposal

In response to the AER's comments regarding a lack of evidence supporting the proposed contingency allowance, SP AusNet engaged Evans & Peck (E&P) to undertake risk modelling. E&P separately identified the impact of inherent risks (attached to planned events) and external risks (unplanned events). Inherent risks were identified for three of the station projects and extrapolated to the rest of the program, whereas external risks were identified for each individual station project. Minimum, maximum and most likely cost impacts of each risk were developed using assumed variances in the estimated costs (for external risks) and in input quantities and unit costs (for inherent risks). These data were combined using Monte Carlo simulations to produce a probability weighted distribution curve for the total cost of the station rebuild / refurbishment program.

The outputs of the E&P modelling indicate that there is a 50% probability that the actual cost of the station rebuild / refurbishment program will be \$371.97m or less, which effectively represents a contingency allowance of 10.3% above SP AusNet's base estimate.⁵² E&P finds that there is a greater than 95% probability that SP AusNet's actual costs for this program will exceed the amount taken to be in SP AusNet's proposal, which includes its proposed contingency allowance.⁵³

SP AusNet states that based on these findings, its proposed contingency allowance is fully justified.

⁵² Evans & Peck, *SP AusNet Capital Works Program – Risk Model Report*, 11 October 2007, p.44.

⁵³ *ibid.*, p.41.

Consultants' advice

PB reviewed the report prepared by E&P, finding that the methodology provided a robust and systematic framework for risk assessment. However, PB expresses concern over the inputs used in the analysis and the interpretation of the results. Specifically, PB contends that the outputs of the E&P analysis overstate the project cost risk to SP AusNet, primarily because the asymmetry assumed for inherent risks was not supported (and appeared unrealistic in specific cases). PB also considers that E&P has ignored the potential for risks to be mitigated through other means.⁵⁴

On the basis of its review PB considers that inherent risks pose an equal degree of opportunity and risk to SP AusNet, given the process used for arriving at cost estimates, and recommends no contingency allowance for these risks.⁵⁵ However, while it considers both the E&P analysis and SP AusNet's proposal to be overstated, PB found evidence to suggest that some contingency allowance was justified for some of the external (unplanned) risks that were identified.

To estimate an appropriate allowance for unplanned risks, PB assessed the validity and cost of each risk item in three rebuild / refurbishment projects. Some risk items, such as delays in funding and design approvals, were excluded by PB on the basis that they were controllable by SP AusNet or risks already addressed elsewhere in its capex program.⁵⁶ PB's adjustments resulted in an average reduction in the E&P unplanned risk allowance of 40% for the three projects examined. PB recommends extending this reduction across the remaining project contingency allowances calculated by E&P. PB's recommended contingency amounts for each project are shown in table 4.21.

⁵⁴ PB Strategic Consulting, *SP AusNet revenue reset - Advice on revised revenue proposal*, 8 January 2008, p.13.

⁵⁵ *ibid.*

⁵⁶ PB also recommended a one-off adjustment to the cost of noise mitigation that might be required for the redevelopment of the Brooklyn terminal station.

Table 4.21: PB's recommendations – contingency allowance (\$m, 2007-08)

	SP AusNet's proposed contingency	PB's recommended contingency
	\$m	\$m
Refurbishment of HWPS	1.7	1.58
Redevelopment of RTS	6.1	2.39
Redevelopment of BLTS	2.8	2.17
Refurbishment of TTS	3.7	0.83
Redevelopment of RWTS	1.6	0.56
Refurbishment of GNTS	1.5	0.45
Refurbishment of KTS	3.4	0.81
Refurbishment of GTS	2.5	0.47
Refurbishment of HWTS	1.4	0.28
TOTAL	24.8	9.52

Table sources: SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.107; PB, *SP AusNet revenue reset - Advice on revised revenue proposal*, 8 January 2008, p.14.

AER's consideration

The AER acknowledges the comments made by ElectraNet, Transend and PB regarding:

- the appropriateness of including a contingency allowance in estimates of forecast capex for TNSPs, and
- the robustness of the framework for risk assessment provided by E&P.

The AER recognises that the cost of implementing certain projects, particularly those that are large and complex, are difficult to forecast and that a modelling approach such as that used by E&P should ensure that, on average, the overall capex allowance is unbiased.

The AER notes, however, that SP AusNet has not explicitly used the E&P modelling outputs to justify the quantum of its contingency allowance, but rather to imply that its original claim of \$24.8m is efficient and prudent simply because it is lower.

More importantly, the AER is concerned that the assumed cost impacts of inherent and unplanned risks, which are critical to the E&P analysis, have not been substantiated. This concern is compounded by the fact that the data is based on asymmetric risk assumptions for almost all events, with substantial variances in some cases. The AER expressed a similar concern regarding this particular element of E&P's risk modelling for ElectraNet, and specifically that the inputs for its modelling

were obtained through a ‘risk workshop’ with the TNSP, and without any systematic evaluation of risks on actual cost outcomes by more objective measures.⁵⁷ By contrast, E&P had undertaken risk analysis as part of the recent Powerlink revenue application that was based on its own knowledge and experience of large infrastructure projects. The outcomes of this analysis were accepted by the AER.⁵⁸

The AER agrees with PB’s findings that SP AusNet should not be compensated for the inherent risks identified as they are appropriately mitigated by prudent business practices, and agrees that these risks and their associated costs would be appropriately faced and absorbed by a prudent service provider. The AER also supports PB’s approach to reviewing the inputs in the modelling of unplanned risks and its recommended reduction of 40% to the amounts calculated by E&P. PB’s recommendation is based on a systematic review of the risks identified and appears to be consistent across the basis of the projects analysed, if not somewhat conservative.⁵⁹ PB’s extrapolation of this 40% reduction to the remaining project contingencies is also consistent with E&P’s approach to examining inherent risks for the majority of projects examined.

The AER’s approved contingency allowance for each of SP AusNet’s proposed station rebuild / refurbishment projects, as recommended by PB, are set out in table 4.22 below.

⁵⁷ AER draft decision, *ElectraNet transmission determination 2008–09 to 2012–13*, 9 November 2007, p.103.

⁵⁸ AER decision, *Powerlink Queensland transmission network revenue cap 2007–08 to 2011–12*, 14 June 2007, p.40.

⁵⁹ The reductions resulting from PB’s assessment of the three projects ranged from 51% to 44%, and averaged 47%.

Table 4.22: AER's final decision – contingency allowance by station (\$m, 2007-08)*

	SP AusNet's revised proposal		AER's final decision	
	\$m	%	\$m	%
Refurbishment of HWPS	1.7	4.9%	1.58	4.6%
Redevelopment of RTS	6.1	5.8%	2.39	2.5%
Redevelopment of BLTS	2.8	5.7%	2.17	4.8%
Refurbishment of TTS	3.7	9.2%	0.83	2.2%
Redevelopment of RWTS	1.6	5.8%	0.56	2.0%
Refurbishment of GNTS	1.5	7.6%	0.45	2.5%
Refurbishment of KTS	3.4	9.4%	0.81	2.4%
Refurbishment of GTS	2.5	10.4%	0.47	2.1%
Refurbishment of HWTS	1.4	7.8%	0.28	1.6%
TOTAL	24.8	7.4%	9.52	2.7%

* Capex as incurred.

The AER notes that the adjustments to the E&P results for SP AusNet would result in an average contingency allowance of 2.7% for the station projects identified, which is comparable to that allowed in the AER's final decision for Powerlink.⁶⁰

AER's conclusion

The AER does not consider that the information provided by SP AusNet fully supports the proposed contingency allowance for its station rebuild / refurbishment projects. Having considered the information included in and accompanying SP AusNet's revised proposal, the AER is not satisfied that the proposed allowance reasonably reflects capex required by a prudent and efficient TNSP (cl. 6A.6.7(e)(4)) to meet the capex objectives.

The AER does not accept SP AusNet's proposed \$24.81m contingency allowance, and has approved in its place a substitute allowance of \$9.52m, which is based on the information provided by SP AusNet, and the analysis undertaken by PB. The AER is satisfied that its approved allowance is sufficient to allow SP AusNet to manage the risks of its station rebuild / refurbishment projects, and that it reasonably reflects the capex criteria, having regard to the capex factors.

The AER's adjustment to SP AusNet's proposed contingency allowance is set out in table 4.23 below.

⁶⁰ AER decision, *Powerlink Queensland - transmission network revenue cap 2007-08 to 2011-12*, p.43. The contingency allowance, or 'cost estimation risk factor' determined by the AER for Powerlink was 2.6%.

Table 4.23: AER's conclusion – contingency allowance (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's revised proposal	3.54	4.24	3.57	3.76	5.51	4.19	24.81
AER's adjustment**	-2.50	-2.84	-2.33	-1.87	-3.06	-2.68	-15.29
AER's Final Decision	1.07	1.39	1.22	1.89	2.45	1.51	9.52

* Capex as incurred

** The AER's adjustments to SP AusNet's proposed contingency allowance have been made on a station-by-station basis, rather than as a high-level adjustment to the total forecast capex allowance.

4.6.2.2 Base year inflation assumption

For the purposes of generating its capex inputs into the PTRM, SP AusNet escalated its real 2006-07 expenditure by a factor of 1.026 to calculate its base year expenditure in real 2007-08 dollars (after labour and materials escalations). The AER understands that this factor was based on a forecast of inflation between March 2006 and March 2007 (ie. a lagged inflation approach). Outturn inflation produced a factor of 1.024, and the AER has updated the capex inputs for this outturn inflation.

When applied to the AER's final decision approved forecast capex allowance, the downward adjustment to reflect 2006-07 outturn inflation amounts to \$1.19m.⁶¹

4.6.2.3 Labour and materials escalations

AER's draft decision

The AER's draft decision rejected SP AusNet's proposed labour and materials cost escalations, and substituted the escalations shown in table 4.24 below.

Table 4.24: AER's draft decision: capex labour and materials escalation

Asset class	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Secondary	1.037	1.050	1.062	1.075	1.088	1.102
Switchgear	1.030	1.024	1.017	1.008	0.994	0.981
Reactive	1.030	1.024	1.017	1.008	0.994	0.981
Transformers	1.082	1.032	0.999	0.978	0.965	0.952
Lines	1.030	1.030	1.030	1.030	1.030	1.030
Establishment	1.052	1.069	1.086	1.104	1.122	1.140
Communications	1.037	1.050	1.062	1.075	1.088	1.102

Table source: AER draft decision, 31 August 2007, pp.325-330

⁶¹ SP AusNet, *Capex Modelling for AER final v2.xls*, 15 January 2008.

The application of these escalators to the revised forecast of capex determined in the AER's draft decision resulted in an additional downward adjustment of \$6.70m to the forecast capex allowance approved in the draft decision.

SP AusNet's revised proposal

For the purposes of its revised revenue proposal, SP AusNet has accepted the capex escalators applied in the AER's draft decision.⁶²

AER's considerations

SP AusNet's revised proposal accepts the capex escalators applied in the AER's draft decision without amendment. There have been no changes made in SP AusNet's revised revenue proposal, nor differences in the information contained in or accompanying the revised proposal that have given the AER cause to move from its initial position in relation to these escalators.

The AER notes the submission provided by the EUCV regarding labour and materials escalations.⁶³

The AER agrees with the EUCV that the impact of movements in the Australian dollar should be considered in determining the appropriate real escalations for materials costs, given that most primary transmission equipment is manufactured offshore. The AER has taken exchange rate movements into account in its draft decision in that it relied on the data provided in the report prepared by Sinclair Knight Merz (SKM), which explicitly incorporated a forecast of AUD-USD movements into its analysis.⁶⁴

The EUCV suggests that an additional premium in the capex and opex allowances for real labour cost increases is inappropriate given that a premium in wages over CPI has been prevalent over the last 30 years. The AER agrees that it is important to avoid possible double-counting of costs in the capex allowance. However given that all of SP AusNet's base costs have been determined in \$2006-07 terms (ie. regardless of the year in which the costs are forecast to occur) and then escalated forward, the AER considers that the only premiums applied year-on-year to this base amount are the real escalations (ie. positive or negative) and a CPI adjustment.

In undertaking its analysis for the draft decision the AER gave consideration to the consistency issue identified by the EUCV with respect to the appropriate CPI forecast to adopt in determining the level of real labour and materials escalations. The AER determined that achieving internal consistency with the macroeconomic model generated by its consultants Econtech (to which the CPI forecast is an input rather than an output) was a higher priority than achieving consistency with the CPI forecast implicit in the WACC calculation.

⁶² SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p. 110.

⁶³ EUCV, *Victorian Electricity Transmission Revenue Reset: AER Draft Determination – A response by The Energy Users Coalition of Victoria*, November 2007, pp.20-25.

⁶⁴ SKM, *Escalation Factors affecting Capital Expenditure Forecasts*, 21 February 2007, pp.33-34.

Finally, the AER agrees with the EUCV's view that the AER should include adjustments for all market conditions to ensure the incentive regime is consistent and balanced.

As required by cl. 6A.6.7(c)(8) of the NER, the AER has considered whether the total labour costs included in SP AusNet's capex forecasts for the forthcoming regulatory control period are consistent with the incentives provided by the Service Target Performance Incentive Scheme (STPIS). No inconsistencies have been identified.

When applied to the capex forecast submitted in SP AusNet's revised proposal, and as adjusted for the conclusions drawn by the AER in sections 4.6.1 and 4.6.2.1 above, the total labour and materials escalations amounts to \$22.19m (as incurred, \$2007-08).⁶⁵

4.6.3 Template discrepancies

The AER has identified unexplained discrepancies in the cost templates submitted by SP AusNet with its revised proposal for the following forecast capex projects:

- Redevelopment of Richmond Terminal Station (RTS)
- Replacement of station and control centre SCADA
- Refurbishment of Geelong Terminal Station (GTS)
- Installation of OPGW
- Refurbishment of Malvern Terminal Station (MTS)
- Transformer refurbishment
- IT (non-network)
- Other (non-network).

Given the discrepancies identified in the revised cost templates submitted by SP AusNet (which are a direct input into the PTRM), the AER sought clarification from SP AusNet on the actual amount of capex proposed for these projects.⁶⁶ In response, SP AusNet attempted to provide explanations for the discrepancies identified.⁶⁷

The AER is not satisfied with SP AusNet's explanations for a number of the discrepancies identified, and has made adjustments accordingly.

SP AusNet advised of its corrected revised proposal amounts of forecast capex for the first three projects listed above. The AER's adjustments to these projects for the outstanding unexplained portion of these discrepancies are discussed in section 4.6.1.

The AER is not satisfied that the discrepancies identified with respect to the remaining five projects have been fully substantiated in SP AusNet's revised proposal. On this basis the AER has made further adjustments to these projects to implement its draft decision, as set out in table 4.25.

⁶⁵ SP AusNet, *Capex Modelling for AER final v2.xls*, 15 January 2008.

⁶⁶ AER, email to SP AusNet, 10 December 2007.

⁶⁷ SP AusNet, email to the AER, 12 December 2007.

Table 4.25: AER's adjustments for unexplained template discrepancies (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
Redevelopment of RTS^	0.00	0.00	0.00	-1.79	-5.23	-9.37	-16.39
Replacement of SCADA^	2.30	2.00	1.50	0.50	-0.60	1.50	7.20
Refurbishment of GTS^	-2.72	2.88	3.34	0.00	0.00	0.00	3.50
Installation of OPGW	-0.63	0.00	0.00	0.00	0.00	0.00	-0.63
Refurbishment of MTS	-0.76	0.00	0.00	0.00	0.00	0.00	-0.76
Transformer refurbishment	0.00	0.00	0.00	0.00	0.00	-0.03	-0.03
IT (non-network)	-0.11	0.00	0.00	0.00	0.00	0.00	-0.11
Other (non-network)	0.00	0.00	0.00	0.00	0.00	-0.04	-0.04
<i>Total discrepancies</i>	<i>-1.96</i>	<i>4.88</i>	<i>4.85</i>	<i>-1.31</i>	<i>-5.82</i>	<i>-7.91</i>	<i>-7.26</i>
AER's separate adjustment	-1.50	0.00	0.00	0.00	0.00	-0.07	-1.57

Table sources: SP AusNet, email to the AER, 12 December 2007; SP AusNet, *SPA Revised Templates – Cost information lodged 12102007.xls*.

* Capex as incurred.

^ The AER's adjustments for the discrepancies identified in these three projects have been made on an individual project-by-project basis, in section 4.6.1 above.

4.7 AER's conclusions

On the balance of the information available, the AER is not satisfied that the total forecast capex in SP AusNet's revised proposal reasonably reflects:

- the efficient costs of achieving the capital expenditure objectives;
- the costs that a prudent operator in the circumstances of the relevant Transmission Network Service Provider would require to achieve the capital expenditure objectives; and
- a realistic expectation of the demand forecast and cost inputs required to achieve the capital expenditure objectives.

In particular:

- there appears to be a systemic advancement in the timing of forecast capex, and in particular proposed asset replacements, in SP AusNet's revised proposal
- SP AusNet has failed to economically justify elements of its revised proposal for forecast capex
- SP AusNet's revised proposal does not appear to have fully considered the opportunities to efficiently utilise spare assets released from its replacement program

- in its revised proposal SP AusNet has in some cases failed to implement the AER's draft decision, despite its stated intention to do so, and without providing an explanation for variances identified.

In undertaking its assessment of SP AusNet's proposed forecast capex allowance in accordance with the NER the AER has had regard, where relevant, to the capex factors listed at cl. 6A.6.7(e). In forming conclusions with respect to specific elements of SP AusNet's proposal, the AER has considered:

- the information included in and accompanying SP AusNet's revised proposal, including that submitted previously with and in support of its original proposal (cl. 6A.6.7(e)(1))
- submissions from interested parties received in the course of consulting on SP AusNet's revised proposal, including those received in relation to its original proposal (cl. 6A.6.7(e)(2))
- the AER's own analysis, as outlined in this final decision, and the analysis and recommendations of consultants PB and Nuttall Consulting as published with this final decision (cl. 6A.6.7(e)(3))
- benchmark capex that would be incurred by an efficient TNSP in the circumstances of SP AusNet over the forthcoming regulatory control period (cl. 6A.6.7(e)(4))
- SP AusNet's actual and expected capital expenditure during the current regulatory control period (cl. 6A.6.7(e)(5))
- the relative prices of SP AusNet's operating and capital inputs (cl. 6A.6.7(e)(6))
- the substitution possibilities between SP AusNet's operating and capital expenditure (cl. 6A.6.7(e)(7)).

The AER considers that the total labour costs included in SP AusNet's capex forecasts are not inconsistent with the incentives provided by the AER's service target performance incentive scheme (cl. 6A.6.7(e)(8)).

The AER notes with respect to SP AusNet's revised forecast capex proposal that:

- SP AusNet has not advised of any related party contracts, and
- the AER has not identified any projects more appropriately included in this final decision as contingent projects.

The capex factors identified in cl. 6A.6.7(e)(9) and (10) therefore have no bearing on the AER's assessment of SP AusNet's revised proposal.

Under cl. 6A.6.7(d) of the NER the AER must not accept SP AusNet's total proposed forecast capex of \$860.42m, as it is not satisfied that it reasonably reflects the capex criteria taking into account the capex factors.

The AER is therefore required under cl. 6A.14.1(2)(ii) to provide an estimate of the total capex that SP AusNet will require over the forthcoming regulatory control period which the AER is satisfied reasonably reflects the capital expenditure criteria, taking into account the capex factors.

Table 4.26 sets out the adjustments to SP AusNet's proposed forecast capex allowance for the forthcoming regulatory control period that follow from the AER's rejection of SP AusNet's forecast capex proposal.

Although the adjustments in table 4.26 are for the most part set out on a project-specific basis, the AER reiterates that the total capex after all of these adjustments is an allowance only. The AER's project-specific conclusions should not be taken to bind SP AusNet to a particular set of project-specific capex budgets – SP AusNet has the ultimate discretion in how it allocates its capex allowance.

The total of the AER's adjustments is \$89.35m, which represents around 10.4% of SP AusNet's total revised proposal forecast capex allowance of \$860.42m. The AER's total adjustments to SP AusNet's proposed forecast capex result in a revised forecast capex allowance of \$771.07m. The AER considers that this provides SP AusNet with sufficient allowance to meet the capex objectives over the forthcoming regulatory control period.

Table 4.26: AER's final decision – forecast capex allowance (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's revised proposal	137.18	134.53	132.47	136.35	151.05	168.85	860.42
<i>AER's project-specific adjustments</i>							
Refurbishment of HWPS	-0.01	-0.75	-0.02	-0.01	-0.01	0.00	-0.81
Redevelopment of RTS	-1.87	-2.86	0.00	-2.07	-12.89	-10.82	-30.50
Transformer replacements	-3.50	-5.40	-1.00	-3.60	-7.90	-4.50	-25.90
Replacement of SCADA systems	2.26	2.01	1.51	0.48	-0.59	1.53	7.20
Response capability undefined works	-0.92	-0.92	-0.92	-0.92	-0.92	-0.90	-5.50
Replacement of CTs	-1.68	-3.28	-2.48	-1.04	-0.09	1.45	-7.12
Replacement of 500kV CBs	-1.40	-0.70	0.00	0.00	0.00	0.00	-2.10
Replacement of 66kV switch-bays	-1.27	-1.56	-0.14	-0.02	0.00	0.00	-2.98
Redevelopment of BLTS	0.00	0.00	-0.43	-2.43	-1.37	0.00	-4.23
Refurbishment of TTS	-0.49	-3.04	-2.01	0.00	0.00	0.00	-5.54
Redevelopment of RWTS	-0.39	-0.30	-0.02	-0.04	-0.07	-0.22	-1.03
Refurbishment of GNTS	0.00	0.00	0.00	-0.02	-2.66	-0.66	-3.34
Refurbishment of KTS	-0.55	-4.10	-0.02	-0.25	-0.52	0.00	-5.45
Refurbishment of GTS	-1.48	2.43	2.62	0.00	0.00	0.00	3.56
Refurbishment of HWTS	0.00	-0.02	-0.35	-0.73	0.00	0.00	-1.11
<i>AER's other adjustments</i>							
Unexplained template discrepancies	-1.50	0.00	0.00	0.00	0.00	-0.07	-1.57
Modelling adjustments**	-7.89	-4.53	2.73	13.69	-1.73	-5.21	-2.94
AER's total adjustment – final	-20.69	-23.03	-0.52	3.04	-28.76	-19.40	-89.35
AER's final decision	116.49	111.50	131.95	139.39	122.29	149.45	771.07

Table source: AER analysis; SP AusNet, *Capex Modelling for AER final v2.xls*, 15 January 2008.

* Capex as incurred. The AER's project specific adjustments in table 4.12 include adjustments to SP AusNet's proposed contingency allowance for station rebuild/refurbishment projects, on a station-by-station basis.

** These final adjustments (including for the AER's labour & materials escalations and actual 2006-07 CPI) have been confirmed by SP AusNet.

Table 4.27 compares the AER's final decision to its draft decision for SP AusNet's proposed forecast capex allowance.

Table 4.27: Comparison of AER's draft and final decisions – forecast capex (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's original proposal	128.02	147.70	140.14	140.85	139.69	158.87	855.26
AER's draft decision	104.95	116.68	131.40	109.39	92.97	123.67	679.04
AER's adjustment – draft	-23.07	-31.02	-8.74	-31.46	-46.72	-35.20	-176.23
SP AusNet's revised proposal	137.18	134.53	132.47	136.35	151.05	168.85	860.42
AER's final decision	116.49	111.50	131.95	139.39	122.29	149.45	771.07
AER's adjustment – final	-20.69	-23.03	-0.52	3.04	-28.76	-19.40	-89.35

Table source: AER analysis

* Capex as incurred

5 Cost of capital

5.1 Introduction

This chapter determines the weighted average cost of capital (WACC) to be applied during SP AusNet's forthcoming regulatory control period. SP AusNet's regulatory WACC should represent the return required by investors in a commercial enterprise with a similar degree of non-diversifiable risk as that faced by a benchmark efficient transmission network service provider (TNSP). The WACC is used in various ways in the post-tax revenue model (PTRM). In particular, the WACC is applied to the regulatory asset base (RAB) to produce the return on capital, a significant building block in SP AusNet's maximum allowed revenue (MAR). This chapter also provides an estimate of forecast inflation, which also has several uses in the PTRM.

Due to the specific WACC formula prescribed by the National Electricity Rules (NER), debt raising costs, equity raising costs and corporate tax are not compensated for through the WACC. The analysis of debt and equity raising costs can be found in chapter 6 (opex), and the analysis of corporate tax can be found in chapter 8 (MAR).

5.2 Regulatory requirements

Cost of capital

The AER must determine the WACC by reference to the values, methodologies and benchmarks prescribed in chapter 6A of the NER. Clause 6A.6.2 provides that the cost of capital must be calculated as a nominal post-tax WACC, in accordance with the following formula:

$$WACC = k_e \frac{E}{V} + k_d \frac{D}{V}$$

where:

- k_e = the required rate of return on equity or cost of equity
- k_d = the required rate of return on debt or cost of debt
- E/V = the market value of equity as a proportion of the market value of equity and debt, which is deemed to be 40%
- D/V = the market value of debt as a proportion of the market value of equity and debt, which is deemed to be 60%

The cost of equity is to be determined by using the capital asset pricing model (CAPM), calculated as:

$$k_e = r_f + \beta_e \times MRP$$

where:

- r_f = the expected nominal risk free rate of return, which is to be determined in accordance with cl. 6A.6.2 (c)
- β_e = the equity beta, which represents the systematic risk of a business relative to the market, which is deemed to be 1.0
- MRP = the market risk premium, which represents the expected return of the market in excess of the risk free rate, which is deemed to be 6%

The cost of debt is to be calculated as:

$$k_d = r_f + DRP$$

where:

- r_f = the expected nominal risk-free rate of return, which is to be determined in accordance with cl. 6A.6.2 (c)
- DRP = the debt risk premium, which is to be determined in accordance with cl. 6A.6.2(e)

More specific regulatory requirements relating to the nominal risk free rate, debt risk premium and forecast inflation are set out in greater detail in the sections below.

5.3 AER's draft decision

Cost of capital

The NER prescribes a value for each of the WACC parameters, with the exception of the nominal risk free rate and debt risk premium, for which it prescribes a methodology. However some elements of these two methodologies are not prescribed and need to be determined by the AER.

In June 2007, SP AusNet claimed that the standard regulatory approach of deriving the nominal risk free rate, which is to use the yield on nominal government bonds as a proxy, underestimates the nominal risk free rate by around 66 basis points. This was termed the “absolute bias”. SP AusNet sought to revise its original proposal and submitted that the nominal risk free rate should be calculated as the yield on corporate bonds less the cost of insuring these bonds against default, being the credit default swap rate. This position was based on a report from NERA.⁶⁸ This methodology is not allowed under the NER, which requires the nominal risk free rate to be calculated with reference to the yield on 10 year nominal government bonds. It was therefore rejected in the draft decision. Under the NER, SP AusNet's role in proposing the nominal risk free rate is limited to proposing the dates and length of the averaging period, and the AER's role is limited to assessing the reasonableness of the proposed averaging period and using this period (or a period determined by the AER) to

⁶⁸ NERA, *Absolute bias in (nominal) Commonwealth Government Securities*, 7 June 2007.

calculate the nominal risk free rate using the methodology set out under cll. 6A.6.2(c) and (d).⁶⁹

The NER methodology for calculation of the debt risk premium does not prescribe the data source or how the averaging period is to be selected.⁷⁰ SP AusNet suggested a premium of 125 basis points, calculated using a hybrid approach of averaging historical data from Bloomberg and CBA Spectrum (adjusted for an alleged bias). To account for the alleged bias in CBA Spectrum yields, SP AusNet suggested a 25.6 basis point adjustment, based on another report by NERA.⁷¹ SP AusNet's suggested premium was calculated over the 20 trading days between 30 October 2006 and 24 November 2006.

The AER found that SP AusNet had presented no compelling reason to adopt its hybrid data source approach, over use of data from Bloomberg alone. The NERA report cited by SP AusNet did not advocate averaging the data sources. Rather NERA considered that the estimated yield produced by CBA Spectrum for long-dated, low rated bonds was biased downwards, and estimated that bias to be 26.5 basis points at the time of the study in 2005. It also acknowledged the difficulty in quantifying the exact magnitude of the bias. On the other hand, NERA stated Bloomberg's estimation procedure will not produce a bias and suggested that Bloomberg could be used by regulators as an alternative to CBA Spectrum.⁷² Accordingly the AER found that SP AusNet's hybrid data source approach was not justified and maintained the AER's regulatory practice of relying on data from Bloomberg alone. The AER also rejected SP AusNet's suggested averaging period, stating that for internal consistency within the WACC calculation, it was fundamental that the debt risk premium be calculated over the same dates as the nominal risk free rate.

In the draft decision the AER adopted the 8.85% nominal vanilla WACC used by SP AusNet in its original revenue proposal. The AER did not adjust this WACC to incorporate SP AusNet's revisions to its original proposal, or the AER's draft decision on the debt risk premium. Any attempted adjustment would have been purely indicative as the averaging period used to calculate the nominal risk free rate and debt risk premium post dated the release of the draft decision and would need to be revised.

Forecast inflation

The approach to forecasting inflation that has generally been used by the AER and other regulators, and the approach specified in the first proposed PTRM, has been to measure the difference in the yields between nominal Commonwealth Government Securities (CGS) and inflation-indexed CGS, using the Fisher equation – this overall approach is commonly referred to as “the Fisher equation”.⁷³

⁶⁹ NER methodology for calculating the nominal risk free rate is outlined in section 5.5.1.1.

⁷⁰ NER methodology for calculating the debt risk premium is outlined in section 5.5.2.1.

⁷¹ NERA, *Critique of available estimates of the credit spread on corporate bonds – A report for the ERA*, May 2005.

⁷² *ibid.*, p.2.

⁷³ $f = (1 + rf) / (1 + rrf) - 1$ where f equals forecast inflation, rf equals the yield on nominal CGS (as proxy for the nominal risk free rate), and rrf equals the yield on inflation-indexed CGS (as proxy for the real risk free rate).

In June 2007, SP AusNet sought to revise its original proposal and submitted that this methodology be adjusted by increasing the yield on inflation indexed CGS by 20 basis points, before applying the Fisher equation, to account for an alleged bias – termed the “relative bias”.

As SP AusNet’s proposal was non-compliant with the first proposed PTRM, the AER was not required to accept it under cl. 6A.14.3(b). In rejecting SP AusNet’s proposal the AER was guided by the principle that the appropriate approach to forecasting inflation should be a methodology that the AER determined is likely to result in the best estimates of expected inflation, as stated in cl. 6A.5.3(b).

The AER considered, however, that neither the methodology in the first proposed PTRM nor SP AusNet’s proposal were likely to reflect this principle. Reliance on the Fisher equation to derive a market based estimate was seen as problematic in light of an apparent downward bias in indexed CGS bonds given the scarcity of such bonds at this time. This concern was confirmed by both the Reserve bank and Australian Treasury. As no reasonable market based estimate was available at this time, a more general approach to forecasting inflation was considered appropriate. The AER therefore had regard to the RBA’s target inflation range (2-3%), and considered a range of inflation indicators to determine an inflation forecast. These indicators included independent forecasts, historical inflation and inflation swaps.

After considering a range of inflation indicators, the AER’s draft decision was that application of this methodology favoured an inflation forecast of 3%, at the upper end of the RBA’s target range. The AER adopted an inflation forecast of 3% in its draft decision.

5.4 SP AusNet’s revised proposal

Cost of capital (debt risk premium)

While its original proposal suggested that the debt risk premium be calculated using historical data (late October to late November 2006) and over a 20 day averaging period, SP AusNet advises that these dates were chosen only for the purposes of its revenue proposal, and that SP AusNet expected the AER to recalculate the premium using current data at the time of the final decision. SP AusNet fully supports the AER’s draft decision to align the dates and length of the averaging period for the debt risk premium with that used to calculate the nominal risk free rate.⁷⁴

SP AusNet continues to advocate its hybrid data source approach to calculate the debt risk premium by averaging the 10 year Bloomberg BBB fair yield and the 10 year CBA Spectrum BBB+ fair yield, adjusted upwards by 25.6 basis points in an attempt to correct for the alleged bias in CBA Spectrum estimates.

Forecast inflation

SP AusNet no longer supports the approach set out in the PTRM it adopted in its original proposal (the Fisher equation) or the NERA approach it advocated in the initial revision to its original proposal. Instead, it considers there is merit in the AER’s

⁷⁴ SP AusNet, *Electricity transmission revised proposal 2008-09 – 2013-14*, 12 October 2007, p.191.

approach from the draft decision to use a more general approach to forecasting inflation. However, SP AusNet disagrees with one of the indicators of forecast inflation identified in the AER's draft decision, namely historical inflation.⁷⁵

SP AusNet also believes that it is appropriate to consider inflation forecasts from a number of independent forecasters. SP AusNet criticises the AER for relying too heavily on the inflation forecasts from the BIS Shrapnel report that it submitted in support of its labour cost escalator. In response to the draft decision, SP AusNet collected what were purported to be inflation forecasts over the long term from a number of sources, including a number of economic consultants and retail banks. These forecasts are reproduced below. SP AusNet believes the weight of these forecasts "suggests an inflation forecast at the midpoint of the RBA's stated target range is reasonable"⁷⁶, and proposes an inflation forecast of 2.5%.

On the use of the other indicators utilised in the draft decision (e.g. inflation swaps), SP AusNet is silent. Effectively, SP AusNet is proposing that only one inflation indicator be used – independent forecasts – albeit an average from a range of different independent forecasters.

⁷⁵ SP AusNet also claims that the AER miscalculated historical inflation, overstating the 5 year compound average inflation rate in the draft decision. SP AusNet, *Electricity transmission revised proposal 2008-09 – 2013-14*, 12 October 2007, pp.188-189.

⁷⁶ SP AusNet, op. cit., p.190.

Table 5.1 SP AusNet – Inflation forecasts from a range of sources (%)

Table 9.4.1: CPI forecasts from a range of independent forecasters

Year	Econtech report ¹	BIS ¹	SKM ¹	ABS	Access ² (average)	Treasury ³ (May-07)	RBA ⁴ (underlying)	Mean
2005-06	3.2	3.2					2.75	3.2
2006-07	2.8	3.1		2.8	2.5		2.75	2.8
2007-08	2.3	3.0	2.5	2.5	2.8	2.5	2.5	2.6
2008-09	2.9	2.9	2.5	2.4	2.4	2.5	2.5	2.6
2009-10	3.0	2.3	2.5	2.0	2.0	2.5	2.5	2.5
2010-11	2.5	2.9	2.4	2.5	2.5	2.5	2.5	2.6
2011-12	2.2	3.2	2.6			2.5	2.5	2.6
2012-13	2.3	3.2	2.5			2.5	2.5	2.6
2013-14	2.3	na				2.5	2.5	2.4
2014-15	2.0	na				2.5	2.5	2.3
2015-16	2.2	na				2.5	2.5	2.4

Sources: 1. Table 7.1, page 4, "Labour Cost Growth Forecast", MM2 model, AER Econtech, August 2007.
 2. KPMG - Federal Breakfast report, May 2007; Quote from Access - April 2007 report to the AER.
 3. KPMG - Federal Breakfast report, May 2007.
 4. CECG – Response to ESC expected inflation, August 2007.

Table 9.4.2: CPI forecasts from a range of independent private sector forecasters

	CBA ¹	ANZ ²	NAB ³ (headline)	NAB ³ (underlying)	Westpac ⁴	HSBC ⁵	Mean
2007	2.5	3.0	2.0	2.7	2.3	2.7	2.5
2008	2.6	2.7	2.2	2.6	2.9	2.9	2.7
2009	2.5	3.1	2.5	2.5	2.5	2.5	2.6
2010	2.5	2.5	2.5	2.5	2.5	2.5	2.5
2011	2.5	2.5	2.5	2.5	2.5	2.5	2.5
2012	2.5	2.5	2.5	2.5	2.45	2.5	2.5
2013	2.5	2.5	2.5	2.5	2.45	2.5	2.5
2014	2.5	2.5	2.5	2.5	2.45	2.5	2.5
2015	2.5	2.5	2.5	2.5	2.45	2.5	2.5
2016	2.5	2.5	2.5	2.5	2.45	2.5	2.5

Sources: 1. Letter from Joseph Capurso, CBA, 20 September 2007.
 2. Letter from Paul Perry, ANZ, September 2007.
 3. Letter from David Holloway, NAB, 24 September 2007.
 4. Letter from Craig Harris, Director Structured Derivatives, Westpac, 18 September 2007.
 5. Letter from John Edwards, HSBC Chief Economist Australia and New Zealand, 18 September 2007.

Source: SP AusNet⁷⁷

5.5 Issues and AER’s considerations

As stated above, chapter 6A of the NER prescribe a value for many of the WACC parameters. The prescribed WACC parameters are set out in the table below. These values apply to all transmission determinations until the completion of the AER’s first five yearly WACC review, which chapter 6A requires be initiated by 1 July 2009.

⁷⁷ *ibid.*

Table 5.2 NER – Prescribed WACC parameters

Parameter	Symbol / acronym	Prescribed value
Equity beta	β_e	1.00
Market risk premium	MRP	6.00%
Equity funding	E / V	40.00%
Debt funding (i.e. gearing)	D / V	60.00%

Source: NER⁷⁸

Inserting these values into the prescribed WACC formula results in the following expression:

$$WACC = (r_f + 1 \times 0.06) \times 0.40 + (r_f + DRP) \times 0.60$$

The AER's consideration of the remaining WACC parameters, the nominal risk free rate (r_f) and debt risk premium (DRP), follows. The AER's consideration of forecast inflation is also addressed in this section.

5.5.1 Nominal risk free rate

The risk free rate should measure the return an investor could expect from an asset with zero default or liquidity risk. In calculating the WACC, the nominal risk free rate is a significant component of the both the cost of equity and cost of debt.

5.5.1.1 Regulatory requirements

The methodology that the AER must use to determine the nominal risk free rate is prescribed under cl. 6A.6.2(c) and (d) of the NER. The AER must determine the nominal risk free rate:

...on a moving average basis from the annualised yield on Commonwealth Government bonds with a maturity of 10 years using:

- (1) the indicative mid rates published by the Reserve Bank of Australia; and
- (2) a period of time which is either:
 - (i) a period ('the agreed period') proposed by the relevant Transmission Network Service Provider, and agreed by the AER (such agreement is not to be unreasonably withheld); or
 - (ii) a period specified by the AER, and notified to the provider prior to the commencement of that period, if the period proposed by the provider is not agreed by the AER under subparagraph (i),

and, for the purposes of subparagraph (i):

⁷⁸ NER, cl. 6A.6.2(b).

- (iii) the start date and end date for the agreed period may be kept confidential, but only until the expiration of the agreed period; and
- (iv) the AER must notify the Transmission Network Service Provider whether or not it agrees with the proposed period within 30 business days of the date of submission of the Revenue Proposal under clause 6A.10.1(a).

Clause 6A.6.2(d) states that if there are no CGS with a maturity of 10 years on any day in the averaging period, the AER must determine the nominal risk free rate by:

...interpolating on a straight line basis from the two Commonwealth Government bonds closest to the 10 year term and which also straddle the 10 year expiry date.

5.5.1.2 Submissions

Energy Users Coalition of Victoria

The Energy Users Coalition of Victorian (EUCV) notes SP AusNet claimed that using the yield on nominal CGS understates the nominal risk free rate due to the lack of supply of these bonds. Against this, the EUCV emphasises the advice from the RBA and Australian Treasury, referenced in the draft decision, that the government made a decision to ensure there is sufficient issuance of these bonds to maintain their integrity. The EUCV strongly supports the views of the RBA and Australian Treasury and submits that the AER should disregard the alleged bias in the use of nominal CGS as a proxy for the nominal risk free rate.⁷⁹

5.5.1.3 AER's considerations

The NER require the nominal risk free rate to be determined from the yield on nominal CGS.⁸⁰ Accordingly, the AER must disregard the alleged bias for the purposes of this determination. SP AusNet has recognised this in its revised proposal and no longer proposes the nominal risk free rate be determined as the yield on corporate bonds less the credit default swap rate.

As stated above in the regulatory requirements, the AER is required to make its final decision on SP AusNet's averaging period within 30 business days of receipt of SP AusNet's revenue proposal.⁸¹ SP AusNet proposed an averaging period length of 10 days in its original proposal and (at the time confidentially) proposed to the AER that the averaging period be calculated over the 10 trading days between 3 December 2007 and 14 December 2007 (inclusive). The AER found no reason to reject the period proposed by SP AusNet and notified SP AusNet of its agreement to both the length and dates of the averaging period on 13 April 2007.

As there are no nominal CGS with a maturity of 10 years on any day in the agreed averaging period, pursuant to cl.6A.6.2(d) the AER must determine the nominal risk

⁷⁹ EUCV, *Victorian electricity transmission revenue reset – AER consultants reports – a response by the Energy Users Coalition of Victoria*, November 2007, p.6. EUCV, *Victorian electricity transmission revenue reset – AER draft determination – a response by the Energy Users Coalition of Victoria*, November 2007, p.26.

⁸⁰ NER, cl. 6A.6.2(c) and (d).

⁸¹ NER, cl. 6A.6.2(c)(iv)..

free rate by interpolating on a straight line basis from the two CGS closest to the 10 year term which also straddle the 10 year expiry date. The relevant two bonds are the CGS with issue ID's TB120 and TB122, which mature on 15 February 2017 and 15 March 2019 respectively.

5.5.1.4 AER's conclusion

Following the methodology prescribed by the NER and over the agreed averaging period (10 day moving average ending 14 December 2007), the AER determines the nominal risk free rate applicable to SP AusNet's revenue determination to be 6.09%.

5.5.2 Debt risk premium

The debt risk premium (DRP) is added to the nominal risk free rate to calculate the cost of debt. The DRP is the premium, above the risk free rate, a benchmark efficient TNSP is assumed to face in sourcing funding from suppliers of debt finance.

The debt risk premium compensates for the credit risk component of the cost of debt, and is not intended to provide compensation for debt raising activities (e.g. underwriting fees). The WACC formula prescribed under the NER does not allow debt raising costs to be compensated for through the WACC. Debt raising costs are compensated for through an opex allowance and are addressed separately in chapter six.

5.5.2.1 Regulatory requirements

Clause 6A.6.2(e) prescribes the methodology that must be used by the AER to determine the debt risk premium. The AER must determine the debt risk premium as:

...the margin between the 10 year Commonwealth annualised bond rate and the observed annualised Australian benchmark corporate bond rate for corporate bonds which have a BBB+ credit rating from Standard and Poors and a maturity of 10 years.

5.5.2.2 Submissions

Energy Users Coalition of Victoria

The EUCV agrees with the AER that the debt risk premium should be set using data from the same period as that used to calculate the nominal risk free rate. The EUCV also states that:

EUCV notes that [the] AER intends to use Bloomberg data for BBB rated debt. This concerns the EUCV as the Rules specify that BBB+ rating is to be used.⁸²

The EUCV notes that every TNSP has a credit rating higher than BBB+, with the exception of ElectraNet whose relatively low credit rating is due to its very high level of gearing – well above the notional level of 60%. The EUCV claims that even TNSPs with a higher gearing than 60% (including SP AusNet) still possess credit ratings of A and above. On this basis, the EUCV states that if there is a difference in

⁸² EUCV, *Victorian electricity transmission revenue reset – AER draft determination – a response by the Energy Users Coalition of Victoria*, November 2007, p.31.

the premium using BBB+ from CBA Spectrum or BBB from Bloomberg, the AER should “bias towards the lower debt risk premium”.⁸³

5.5.2.3 AER’s considerations

Averaging period

The AER notes that SP AusNet and the EUCV agree with the AER’s draft decision that for internal consistency within the WACC the debt risk premium and nominal risk free rate should be calculated over the same averaging period. Accordingly the AER has calculated the debt risk premium over the agreed period for the nominal risk free rate, being the 10 day moving average ending 14 December 2007.

Data source

The AER notes the EUCV’s concern that Bloomberg produces a BBB rated fair yield, whereas the NER requires the use of a BBB+ benchmark. The Bloomberg representative BBB rated yield is not derived solely from bonds with a BBB rating, but is based on a combination of data on bonds with BBB-, BBB, and BBB+ ratings. NERA found that, at the time of its study, all long dated bonds with a Bloomberg BBB rating were in fact BBB+ rated and no BBB or BBB- rated long dated bonds were used in the estimation of the Bloomberg “BBB” rated yield curve. NERA concluded:

The Bloomberg representative yield on long dated “BBB rated bonds” will be an unbiased estimate of the yield on long dated BBB+ rated bonds.⁸⁴

The AER found that, at present, the market consists of more BBB+ than BBB rated bonds, and no BBB- rated bonds, for long dated bonds with maturities of approximately 8 years and longer. The AER therefore considers that the use of the Bloomberg ‘BBB’ fair yield fulfils the NER requirement that the debt risk premium be determined on a BBB+ basis.

In recent regulatory decisions, the AER has not used CBA Spectrum (adjusted or otherwise) and instead favoured the use of Bloomberg to calculate the debt risk premium. This approach was adopted as no bias had been identified with Bloomberg’s estimates for long dated, low rated bonds, and Bloomberg was considered a more robust and reliable data source. In fact, in the same report referred to by SP AusNet, NERA recommended Bloomberg as an alternative to CBA Spectrum:

The regulator might consider relying on a different data source such as Bloomberg. Bloomberg’s estimation procedure will not induce an expected difference between actual and estimated yields.⁸⁵

However, in October 2007, Bloomberg ceased publishing its BBB fair yield for bonds with 9 or 10 year maturities, with the 8 year maturity now the longest published. The AER understands this was due to a lack of data for long dated, low rated corporate bonds on which Bloomberg could produce a reasonable fair yield for such long maturities.

⁸³ *ibid.*

⁸⁴ NERA, *op. cit.*, p.12.

⁸⁵ *ibid.*, p.2.

This means that the AER is unable to implement SP AusNet's suggested approach as this relied partly on the 10 year Bloomberg BBB fair yield. It also means that the AER is required to find a suitable alternative that also complies with the NER.

The other major published 10 year BBB+ alternative benchmark is CBA Spectrum. However, NERA has previously established the deficiency of CBA Spectrum estimation procedure to produce unbiased yields for low rated, long dated bonds.⁸⁶

As a consequence, the AER must determine its own benchmark for a 10 year BBB+ Australian corporate bond. The AER considers the two broad approaches would seem to be either to:

- adjust the 10 year CBA Spectrum BBB+ fair yield in an attempt to reverse the bias identified by NERA, or
- extrapolate the 8 year Bloomberg BBB fair yield to replicate a 10 year benchmark BBB yield.

NERA has previously advised that the second method could be achieved by adding the yield spread between the 8 and 10 year CGS bonds on to the 8 year Bloomberg BBB fair yield.⁸⁷ The other minimalist solution would seem to be to add the yield spread between the 8 and 10 year Bloomberg A fair yield, being the fair yield of the next closed rating to BBB+, on to the 8 year Bloomberg BBB fair yield.

Alternatively, in an attempt to reverse the bias from the 10 year CBA Spectrum BBB+ fair yield, the AER could adopt NERA's recommended positive adjustment of 25.6 basis points.

The AER had no particular reason to assume that any one of these solutions would produce a better 10 year benchmark BBB+ yield, and so it sought to test each approach. The AER considered the appropriate test would be to assess the ability of each of these approaches to proxy the 10 year Bloomberg BBB fair yield in the period before this index was suspended, as the AER had previously determined that the 10 year Bloomberg BBB fair yield appropriately fulfilled the requirements of cl. 64.6.2(e).

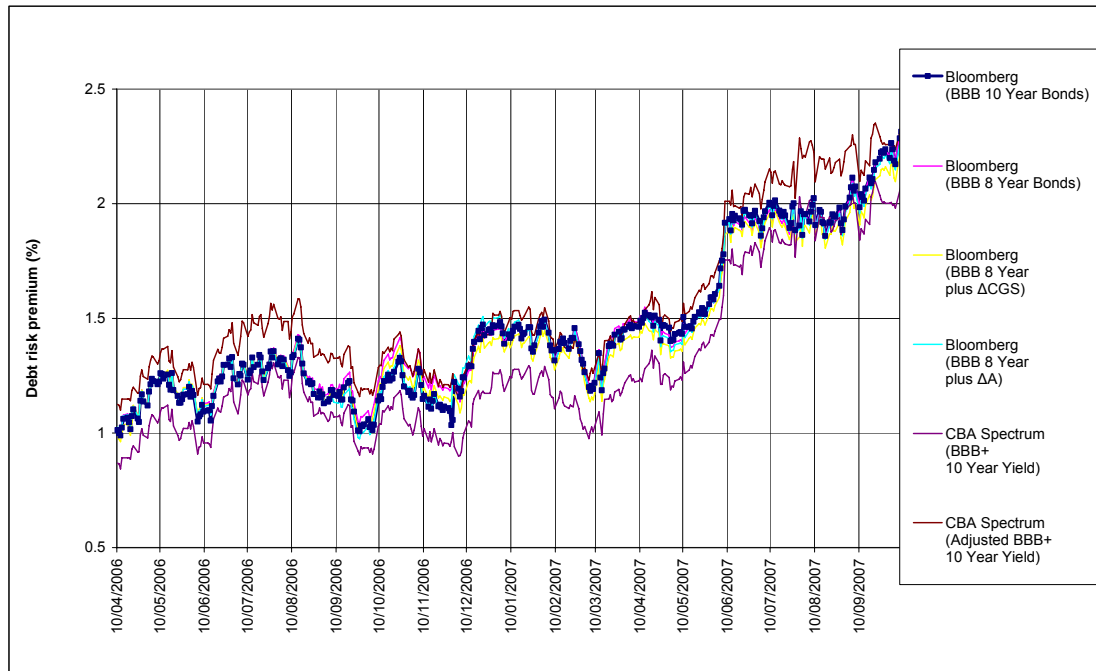
Figure 5.1 plots each of these approaches against the 10 year Bloomberg BBB fair yield in the 18 month period until that Bloomberg index was suspended. Also plotted

⁸⁶ NERA commented that "It should be understood that we have not, and do not in this report, express an opinion regarding the appropriateness of other uses for the CBA Spectrum product. We note that the vast majority of corporate bonds on issue have relatively short terms to maturity and are relatively highly related. We do not expect CBA Spectrum's estimates of the fair yield on these bonds to have any material bias. Thus, the issues we have identified [are] likely to be peculiar to the use of CBA Spectrum by Australian regulators and are unlikely to be relevant for other uses of that product." NERA, *Critique of available estimates of the credit spread on corporate bonds – a report for the ENA*, May 2005, p.2. The AER agrees with NERA's assessment of the extent of CBA Spectrum's limitations.

⁸⁷ NERA, *Critique of available estimates of the credit spread on corporate bonds – a report for the ENA*, May 2005, p.21. NERA's suggestion was actually to add the yield spread between the 10 and 9 year CGS bonds on to the 9 year Bloomberg BBB fair yield, as at the time of its recommendation the 9 year Bloomberg BBB fair yield was still available.

is the 10 year CBA Spectrum BBB+ fair yield, and the 8 year Bloomberg BBB fair yield.

Figure 5.1 – AER analysis – Benchmark 10 year BBB+ debt risk premiums



Source: AER analysis

As a visual inspection illustrates, over the 18 month sample period, both CBA Spectrum and CBA Spectrum adjusted for the bias were poor proxies for the 10 year Bloomberg BBB fair yield. Generally, the unadjusted CBA Spectrum benchmark under predicted the 10 year Bloomberg BBB fair yield, whereas the adjusted CBA Spectrum benchmark over predicted the 10 year Bloomberg BBB fair yield. At the time of NERA’s study, the adjusted CBA Spectrum benchmark and 10 year Bloomberg BBB fair yield were highly correlated, and indeed this correlation was part of NERA’s justification for its calculation of the bias. The fact that these two measures are no longer highly correlated may suggest that NERA’s estimation of the bias is outdated or that the size of the bias has changed over time.

Each of the other Bloomberg based alternatives formed reasonable proxies for the 10 year Bloomberg BBB fair yield, however the 8 year Bloomberg BBB fair yield plus the spread between the 8 and 10 year Bloomberg A fair yields was the best proxy over the sample period, producing the smallest average error.

The AER therefore considers that the 8 year Bloomberg BBB fair yield plus the spread between the 8 and 10 year Bloomberg A fair yields is an approach that complies with the requirements of cl. 6.A.6.2(e) and is the option which provides the best estimation of a 10 year BBB+ benchmark, at this time. The averaging of multiple proxies, however, as suggested by SP AusNet’s use of multiple data sources, would potentially compromise the accuracy of the 10 year yield by including alternative measures which are likely to be less robust.

The discontinuation of Bloomberg's 10 year BBB fair yield has been a recent development, and the AER has not consulted with stakeholders on this issue. However the method described in the preceding paragraph, as the best proxy of the 10 year Bloomberg BBB fair yield, is the available approach that follows most naturally from the draft decision. Figure 5.1 above shows that the difference between that method and the 10 year Bloomberg BBB fair yield is minimal. In circumstances where it is no longer possible to adhere to the approach proposed in the draft decision, and where the time frames set out in the NER inhibit consultation, the AER is of the view that further consultation is not justified. The AER notes it will continue to review this matter in consultation with stakeholders for the purposes of future determinations, and in the context of the AER's 2009 review of WACC parameters.

The AER notes the EUCV's suggestion that because each TNSP's credit rating is above BBB+ (excluding ElectraNet), the AER should bias towards the lower BBB+ estimate from Bloomberg or CBA Spectrum. The AER does not consider this appropriate. The NER provide that a BBB+ credit rating is the benchmark to be used in determining the cost of debt. Whether this leads to a cost of debt that is higher or lower than that faced by SP AusNet should be of no relevance to the AER for this determination as that would not comply with the benchmark approach set out in the NER⁸⁸. The relevant issue is therefore which data source and approach complies with the requirements of the NER and provides the best estimation of 10 year BBB+ benchmark.

5.5.2.4 AER's conclusion

The AER considers, as does SP AusNet, that the debt risk premium should be calculated over the same averaging period as the nominal risk free rate (10 day moving average ending 14 December 2007), and that approach was applied in this decision.

The 10 year Bloomberg BBB fair yield previously adopted by the AER is not available at this time. The only other widely published benchmark is CBA Spectrum, which NERA has previously established is expected to produce biased estimates for 10 year BBB+ fair yields. Accordingly, the AER has had to derive its own benchmark that it considered compliant with the NER. Whilst each of the alternatives considered by the AER are not without limitations, the AER considered the approach that provided the best estimation of a 10 year BBB+ benchmark, at this time, is to use the 8 year Bloomberg BBB fair yield plus the yield spread between 8 and 10 year Bloomberg A rated fair yield, to replicate a 10 year benchmark. Over the dates outlined above, this approach produced a 10 year benchmark yield of 8.20%.

Subtracting the 6.09% nominal risk free rate away from this figure, the AER determines the debt risk premium applicable to SP AusNet's revenue determination to be 2.11%.

⁸⁸ The issue of the appropriate credit rating will also be considered by the AER in its forthcoming WACC review, but is not a relevant consideration at this time for this determination.

5.5.3 Forecast inflation

Forecast inflation has several uses in the PTRM. Its primary use is to convert real inputs to nominal values, and to convert the nominal vanilla WACC to a real vanilla WACC.

5.5.3.1 Regulatory requirements

Clause 6A.5.3(b) of the NER states that the PTRM published by the AER must specify:

...a methodology that the AER determines is likely to result in the best estimates of expected inflation.

The first proposed PTRM⁸⁹, released on 31 January 2007, specifies that the same forecast inflation rate be used in each year of the regulatory control period, and is to be calculated using the Fisher equation:

$$f = \frac{(1+r_f)}{(1+r_{rf})} - 1$$

where:

f = forecast inflation

r_f = the 10 year government bond rate as proxy for the nominal risk-free rate of return

r_{rf} = the 10 year indexed bond rate as proxy for the real risk-free rate of return

The revenue proposal submitted by SP AusNet must comply with the first proposed PTRM, including the specified methodology for estimation of expected inflation. To the extent that it does not, the AER is not required to accept that proposal.

5.5.3.2 Submissions

ElectraNet

ElectraNet supports the need to change the existing methodology for forecasting inflation and considers there is some merit in the AER's general approach. Specifically, ElectraNet considers there is merit in determining an inflation forecast within the RBA's target range of 2-3%, and considering a range of inflation indicators to determine a forecast within that range.

ElectraNet notes that SP AusNet's revised proposal contains inflation forecasts from a wide range of independent forecasters that average close to the midpoint of the RBA's target range over the forthcoming regulatory period. ElectraNet claims that

⁸⁹ Clause 11.6.18 of the NER provides that the first proposed Guidelines, including the first proposed PTRM, are to be used for the purposes of making SP AusNet's forthcoming transmission determination. The final version of these guidelines, published by the AER on 28 September 2007, does not apply to this final decision.

consideration of these inflation indicators in applying the AER's general approach would lead to an inflation forecast that is at or close to 2.5%.

Energy Users Coalition of Victoria

The EUCV notes that there appears to be a general consensus that indexed CGS yields understate the real risk free rate due to the scarcity of these bonds on issue, and that forecasting inflation with reference to these yields (i.e. using the Fisher equation) is no longer appropriate.⁹⁰

The EUCV also notes that the AER's draft decision is consistent with that of the Essential Services Commission of Victoria (ESCV), which also determined a 3% forecast inflation rate in its June 2007 gas distribution draft decision. Whilst the EUCV believes that setting forecast inflation based on the Fisher equation is not reasonable, it does consider movements in the Fisher equation meaningful. Since the ESCV's decision the spread between nominal and indexed CGS has increased by 20-30 basis points. If 3% was considered an appropriate inflation forecast in June, the EUCV considers an additional 20-30 basis points should be added in the AER's final decision to incorporate the change in inflation expectations as reflected by the movement in the Fisher equation.⁹¹

The EUCV considers the AER did not place enough weight on inflation swap yields as an inflation indicator in the draft decision. The EUCV submits that inflation swaps are a superior measure, and purports that they represent the inflation expectations of people "putting their money at risk", as opposed to independent forecasts made by people "who do not face any financial risk of being wrong". The EUCV recommends that the AER directly apply the yield on inflation swaps from Bloomberg as its inflation forecast, noting that, at the time of the draft decision, inflation swaps from Bloomberg were forecasting the 10 year inflation rate to be at 3.37%.⁹²

The EUCV does not consider that the AER should limit the forecast inflation rate to the RBA's target range, and contends that forecast inflation may breach the top of the RBA's inflation target range.⁹³

TransGrid

TransGrid commissioned NERA to consider the appropriateness of the 3% inflation forecast adopted in the draft decision.⁹⁴

NERA's comments are separated into two broad categories, the first of which is the analytical framework adopted by the AER. NERA then discusses the composition and size of the AER's sample of indicators.

NERA considers the AER's approach places unnecessary limitations on the assessment of potential inflation expectations and proposes an alternative analytical framework, which would involve:

⁹⁰ EUCV, op. cit., p.26.

⁹¹ *ibid.*, p.29.

⁹² *ibid.*, pp.29-30.

⁹³ *ibid.*, p.30.

⁹⁴ TransGrid, *AER draft SP AusNet revenue cap determination – TransGrid response*, letter to AER, 14 November 2007.

developing a sample of inflation rate forecasts that is of a sufficient size and reflects the expectations for inflation for the impending ten years; and

estimating the descriptive statistics associated with this sample set including the mean, median, mode and standard deviation; and

using this statistical analysis to identify an inflation rate that is likely to reflect the 'best estimates of expected inflation'.⁹⁵

NERA also criticises the draft decision for the apparent lack of timeframe attached to the inflation forecast. For consistency with past regulatory practice, NERA argues the inflation rate forecast horizon should match the term of the nominal CGS rate used in the WACC calculation. A 10 year term has generally been used for this purpose.

On the sample of indicators, NERA has concerns over the use of inflation swaps and the limited emphasis placed by the AER on the correspondence received by the ACCC from the RBA and Australian Treasury.

Based on the alternative framework outlined above, NERA collected inflation forecasts from a range of independent forecasters. The average and median of these forecasts are 2.57% and 2.50%, respectively, over the 10 year period 2008-2017. NERA concludes that based on this information the best estimate of expected inflation over the next ten years would lie within the range 2.50% and 2.57%.⁹⁶

For the Essential Services Commission of Victoria's (ESCV's) current Victorian gas distribution review, NERA was commissioned by a consortium of energy industry associations to, among other issues, provide advice on a 10 year inflation forecast.⁹⁷ This advice was submitted to the ACCC in response to its draft decision on the access arrangement for the Victorian gas transmission (GasNet) system. In this advice, NERA follows the same approach as the earlier report to produce a 10 year inflation forecast, however, after correcting some errors in the original report arrives at a different forecast.⁹⁸ NERA's more recent report states a 10 year average inflation forecast of 2.61-2.62% and a 10 year median inflation forecast of 2.57%-2.58%.⁹⁹ NERA recommends:

If one were to identify the best estimate arrived at on a reasonable basis as required by section 8.2(e) of the Code then the relevant inflation rate would be 2.6%.¹⁰⁰

⁹⁵ NERA, *AER SP AusNet draft determination: inflation expectations – TransGrid*, November 2007, p.4.

⁹⁶ *ibid.*, p.11.

⁹⁷ *id.*, *ESC draft decision: Inflation expectations – APIA, ENA and ETNOF*, 29 October 2007.

⁹⁸ The AER notes that there are three differences in the calculation of NERA's 10 year inflation forecast between the original and subsequent reports. NERA has corrected the RBA's 2009 inflation forecast, from the RBA's August 2007 'Statement on Monetary Policy', which was not correctly stated in the original report. NERA's representation of BIS Shrapnel's inflation forecasts for 2010, 2011 and 2012 have also altered, though both original and subsequent NERA reports reference the same source documents. Whilst the source documents are not public documents, the AER can only assume this alteration implies that NERA's statement of BIS Shrapnel's forecasts was in error in its original report. NERA's subsequent report also discards Econtech's forecasts, though without explanation.

⁹⁹ NERA, *op. cit.*, p.13.

¹⁰⁰ *ibid.*

5.5.3.3 AER's considerations

SP AusNet's revised proposal suggests an inflation forecast of 2.5%, which has not been determined in compliance with the methodology specified in the first proposed PTRM, being the Fisher equation. As SP AusNet's revised proposal is non-compliant with the first proposed PTRM, the AER is not required to accept it under cl. 6A.14.3(b). In considering SP AusNet's revised proposal, the AER has again been 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.¹⁰¹

The AER maintains its view from the draft decision that the Fisher equation, while it is the approach traditionally used by regulators, may not produce the best estimates of forecast inflation at this time. This position is accepted by SP AusNet in its original and revised proposals. The AER's views in this regard have been strongly influenced by the commentary of the RBA and Australian Treasury, which states that this measure is producing inflation forecasts at odds with other indicators, and that this appears principally caused by a reduction in the supply of indexed CGS, depressing the yields of these bonds.¹⁰² However, as stated in the draft decision, the AER will monitor the issue, and should the usefulness of the Fisher equation improve, the AER will consider reverting back to this method.

The AER does not agree with the EUCV's position that, whilst the implied inflation forecast produced by the Fisher equation is biased, movements in the (biased) Fisher equation do represent a change in the market's inflation expectations. The AER considers that movements in the Fisher equation could reflect changing inflation expectations or a change in the magnitude of the bias. Distinguishing between these two effects is problematic. As there is not a 'one-for-one' relationship between movements in a biased Fisher equation and changing inflation expectations, the AER does not consider movements in the presently biased Fisher equation to be highly informative of changing inflation expectations.

The EUCV considers that the implied inflation forecast from inflation swaps should be applied directly by the AER to forecast inflation, whereas NERA considers little if any weight should be placed on this indicator. The AER agrees with NERA that, at this time, the liquidity of the inflation swap market may not be sufficient to produce a robust inflation forecast. The AER also considered this issue in its draft decision and concluded the use of inflation swaps had limitations, and used this measure as a 'sanity check' rather than applying the implied inflation forecast directly.

The AER maintains its view in its draft decision that a market based estimate of inflation is generally preferable to any other method. However, acknowledging the present limitations of both the Fisher equation and inflation swaps, the AER is not aware of a reliable market based alternative that can be mechanistically applied in a similar way to these measures. It is in this context that the AER has had to resort to a general approach to forecasting inflation.

¹⁰¹ NER, cl. 6A.5.3(b).

¹⁰² RBA, Letter to ACCC, 9 August 2007; Australian Treasury, *The treasury bond yield as a proxy for the CAPM risk-free rate*, Letter to ACCC, 7 August 2007.

In its draft decision, the AER adopted a general approach to forecasting inflation that looked first to the RBA's target band of 2% to 3% as the range within which inflation was expected to fall, on average, and then to the point within that range at which inflation was most likely to average within the relevant period. In identifying 2%, 2.5% and 3% as the most sensible options from which to proceed with this analysis, it seems that the draft decision has caused some concern that the AER's intent was to limit its assessment to a choice between these three options. As demonstrated in its draft decision on ElectraNet's transmission determination, in which the AER accepted ElectraNet's proposed forecast inflation rate of 2.97%, these three points within the target range were intended simply as the starting point of the AER's consideration rather than firm or rigid points in the range.

ElectraNet considers there is merit in determining an inflation forecast within the RBA's 2-3% target range, whereas NERA, commissioned by TransGrid, consider this is an unnecessary constraint imposed on the analysis.

SP AusNet does not suggest that the inflation forecast should relate to a specific term, though implicitly suggests a long term forecast be used, basing its suggested 2.5% on inflation forecasts out until 2016. NERA recommends that a 10 year inflation forecast be adopted, as it is consistent with past regulatory practice in use of the Fisher equation, which is also consistent with the 10 year nominal risk free rate and 10 year debt risk premium in the WACC. The AER considers that consistency with past practice is the right approach at this time, and has adopted a long term (10 year) view of inflation.¹⁰³

In the absence of a robust market based estimate, the AER agrees with SP AusNet's emphasis on independent forecasts in its revised proposal. However, the AER considers that more regard should be given to inflation forecasts from the RBA than those available from the various forecasters cited by SP AusNet and NERA, as the RBA is responsible for monetary policy in Australia, and its control of official interest rates and commentary has a significant impact on both outturn inflation and inflation expectations. In its latest *Statement on Monetary Policy* the RBA forecast inflation to be 3% in the 12 months to December 2008, and 2.75-3% in the 12 months to December 2009. The AER considers the RBA's forecasts represent the best estimates of forecast inflation for these two years. The RBA does not release inflation forecasts beyond a two year period.

In separate advice to the ACCC, the RBA advises that:

Given inflation expectations have been firmly anchored by the Bank's inflation-target regime for some time, a rough estimate of a real risk free rate would be the nominal government bond less the centre of the inflation target band (ie the nominal yield less 2 ½ per cent).¹⁰⁴

Similar advice was also received from the Australian Treasury:

We suggest that [when] working with nominal yields and, where a real return is required, making an inflation adjustment based on the mid point of the

¹⁰³ The AER notes that the term of the WACC parameters will be reviewed by the AER as part of the AER's first WACC review under cl. 6A.6.2.

¹⁰⁴ RBA, letter to ACCC, 9 August 2007, p.3.

RBA's 2 to 3 per cent range, is entirely reasonable. Since the independence of the Reserve Bank Board in conducting monetary policy was formalised in March 1996, annual inflation has averaged 2.5 per cent.

...

We therefore recommend that the ACCC use the mid point of the RBA's target band for inflation (i.e. 2.5% per annum) as the best estimate of inflation.¹⁰⁵

The AER notes most of the retail banks referenced in SP AusNet's proposal do not forecast inflation beyond a 2-3 year period either. Most of these banks also suggest 2.5% be used for longer term inflation forecasts, on the basis that it is the midpoint of the RBA's target range. Some also note that it is the long term average.

In the absence of a reliable market based estimate, and acknowledging the difficulty of forecasting inflation beyond the short term, the AER considers 2.5% to be a reasonable estimate of inflation beyond the RBA's forecast period. Averaging the RBA's forecasts for 2008 and 2009 with 2.5% for the remaining 8 years produces a 10 year inflation forecast of 2.59%, as shown in table 5.3 below.

Whilst this has more regard to the RBA's forecasts, the AER notes that this approach results in a 10 year forecast almost identical to that recommended by NERA from averaging the forecasts of many forecasters (2.59% to 2.6%).

Table 5.3 AER's final decision – Forecast inflation

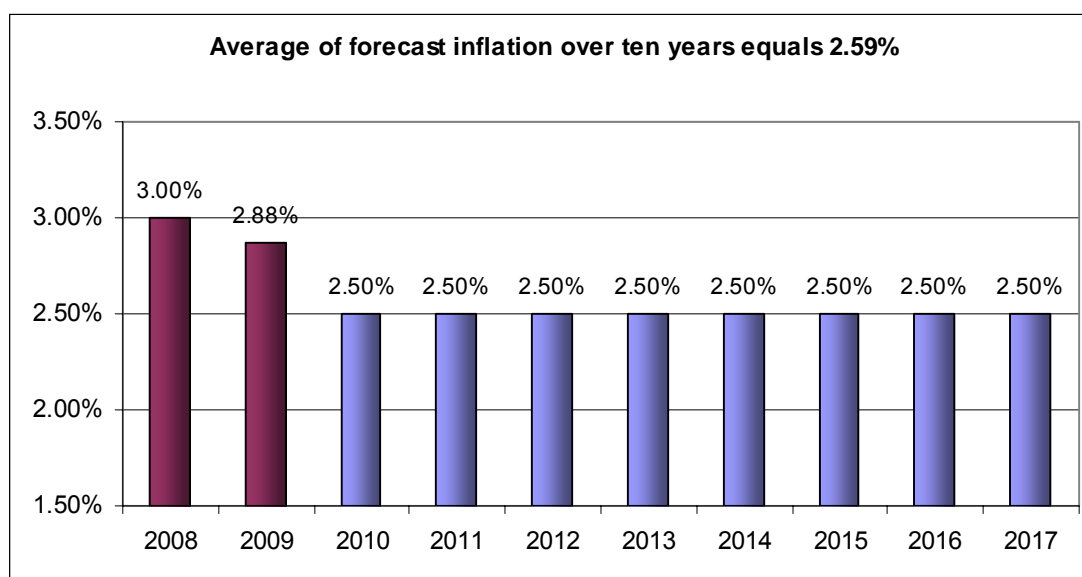
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Average
Forecast inflation	3.00%	2.88% ¹⁰⁶	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.59%

Source: RBA, AER analysis

¹⁰⁵ Australian Treasury, *The Treasury bond yield as a proxy for the CAPM risk-free rate*, Letter to ACCC, 7 August 2007p.5.

¹⁰⁶ As the RBA forecast a range (2.75-3%), instead of a point estimate, for inflation in 2009, the AER has taken the mid point of this range.

Figure 5.2 AER’s final decision – Forecast inflation



Source: RBA, AER analysis

5.5.3.4 AER’s conclusion

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 will continue to review this issue in consultation with stakeholders, in the context of the forthcoming WACC review.

In the draft decision the AER determined it would take account of the RBA’s target inflation band and its outlook for inflation to establish its best estimate of inflation. The RBA is the most authoritative source of advice on expected inflation, if a general approach to forecasting inflation is to be used.

For the purposes of this final decision the AER considers a general forecasting approach as the methodology likely to produce the best estimates of forecast inflation.

In the draft decision the AER noted that the RBA’s most recent views on inflation indicated that inflation was at the top of the target band and determined 3 per cent represented the current best estimate of inflation. Submissions indicated, however, that past regulatory practice, including by the ACCC/AER, was to use an implied 10 year inflation forecast consistent with other financial parameters used in the WACC. The AER has therefore considered the need to have an inflation forecast which extends beyond the inflation forecast period of two years used by the RBA. The AER accepts that while inflation forecasting over such a long period, and in the absence of a robust market-based approach, is problematic, the medium term inflation forecast is likely to be anchored by the RBA’s target band and that appropriate weight also needs to be given to the outlook for inflation beyond the two year forecasting period. The

AER considers this approach is likely to result in the best estimates of expected inflation.

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%). Averaging these individual year forecasts, an implied 10 year forecast has been derived, consistent with past regulatory practice, from the RBA's inflation forecasts for 2008 and 2009 and an assumption of the 2.5% mid point for a further 8 years. This produces a best estimate of 10 year forecast inflation of 2.59%, based on a simple average.

5.6 AER's conclusion

5.6.1 Cost of capital

The NER prescribes the value of the equity beta (1.00), market risk premium (6.00%), and the level of gearing (60%). Inserting these deemed values into the prescribed WACC formula results in the following expression:

$$WACC = (r_f + 1 \times 0.06) \times 0.40 + (r_f + DRP) \times 0.60$$

For the two remaining parameters, the nominal risk free rate and the debt risk premium, no value is set, but the methodology that the AER must follow is prescribed by the NER.

Following the prescribed methodology for the nominal risk free rate, and using the agreed averaging period (10 day moving average ending 14 December 2007), the AER determines the nominal risk free rate applicable to SP AusNet's revenue determination to be 6.09%.

The AER considers, and SP AusNet agrees, that the debt risk premium should be calculated over the same averaging period as the nominal risk free rate (10 day moving average ending 14 December 2007). In the absence of the previously adopted 10 year Bloomberg BBB fair yields, the AER considers extrapolating the 8 year Bloomberg BBB fair yield out to a benchmark 10 year yield by adding the spread between the 8 and 10 year Bloomberg A fair yields, is the approach that best complies with the requirements of the NER. Using these inputs and the methodology prescribed by the NER, the AER determines the debt risk premium applicable to SP AusNet's revenue determination to be 2.11%.

Using these derived parameter values and the prescribed parameter values outline above, the AER determines the nominal vanilla WACC applicable to SP AusNet's revenue determination to be 9.76%.

Table 5.4 AER’s final decision – Cost of capital

Parameter	Prescribed value	SP AusNet’s revised proposal	AER’s final decision
Nominal risk free rate		6.09%	6.09%
Equity beta	1.00		1.00
Market risk premium	6.00%		6.00%
Equity funding	40.00%		40.00%
Debt risk premium		Unavailable*	2.11% (211 basis points)
Debt funding (i.e. gearing)	60.00%		60.00%
Nominal cost of equity		12.09%	12.09%
Nominal cost of debt		Unavailable*	8.20%
Nominal vanilla WACC		Unavailable*	9.76%

Source: SP AusNet¹⁰⁷, AER analysis

*The debt risk premium stated in SP AusNet’s revenue proposal, was provided on an indicative basis and solely for the purposes of the revenue proposal. SP AusNet’s suggestion was for the debt risk premium to be calculated based partly on a 10 year Bloomberg BBB fair yield cannot not be implemented, as this index has been suspended.

5.6.2 Forecast inflation

The AER does not agree with SP AusNet’s suggested inflation forecast of 2.5%.

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 extend out two years, and to adopt the mid-point of the RBA’s target inflation band beyond that period (i.e. 2.5%). Averaging these individual year forecasts, an implied 10 year forecast has been derived, consistent with past regulatory practice, from the RBA's inflation forecasts for 2008 and 2009 and an assumption of the 2.5% mid point for a further 8 years. This produces a best estimate of 10 year forecast inflation of 2.59%, based on a simple average.

¹⁰⁷ SP AusNet, op. cit.

6 Forecast operating expenditure

6.1 Introduction

The Australian Energy Regulator (AER) is required to assess SP AusNet's proposed forecast operating expenditure (opex) for the forthcoming regulatory control period against the requirements of the National Electricity Rules (NER).

The opex forecasts in SP AusNet's revised proposal are SP AusNet's forecast opex requirements for the provision of prescribed services for the forthcoming regulatory control period.

SP AusNet's forecast opex proposal does not cover the opex requirements relating to assets commissioned by VENCORP during the forthcoming regulatory control period. VENCORP commissions assets on a "build, own, operate" basis, and the opex relating to these assets should be recovered through VENCORP's payment of planned and committed augmentation charges to SP AusNet under the contracts for these works.

SP AusNet divides its opex forecasts into two main categories – 'controllable' opex and 'other' opex. The subcategories of each of these are listed in table 6.1.

SP AusNet's opex glidepath allowance, accrued during the current regulatory control period, is addressed in chapter eight, which sets out SP AusNet's maximum allowed revenue (MAR).

6.2 AER's draft decision

In its draft decision the AER did not accept SP AusNet's total proposed forecast opex of \$1 034.34m (2007-08), and substituted a revised forecast. The AER's revised forecast of \$929.49m (2007-08) was derived from a series of adjustments to elements of SP AusNet's original forecast summing to a total reduction of \$104.84m (2007-08). Each component of SP AusNet's original proposal and the AER's revised forecast are shown in the table below. The individual adjustments, and the response to those adjustments in SP AusNet's revised proposal, are discussed in further detail in section 6.6.

Table 6.1 AER's draft decision – Opex (2007-08 \$m)

	SP AusNet's original proposal ¹⁰⁸	AER's adjustment	AER's draft decision
Asset works	90.26	-4.69	85.56
Routine maintenance	206.63	-11.67	194.96
Corporate	117.71	-15.19	102.52
Rolled-in assets opex	11.40	-4.92	6.48
Inventory	-	+0.24	0.24
Subtotal – Controllable opex	426.00	-36.24	389.76
Self-insurance	15.24	-6.86	8.37
Equity raising costs	11.81	-11.81	0.00
Debt raising costs	10.30	-3.72	6.58
Rebates	40.13	-31.60	8.52
Easement land tax	530.85	-14.60	516.25
Subtotal – Other opex	608.34	-68.60	539.73
Total	1 034.34	-104.84	929.49

Source: SP AusNet, AER analysis

6.3 SP AusNet's revised proposal

SP AusNet's revised proposal implements some of the adjustments from the AER's draft decision. In other areas SP AusNet has either reinstated its original proposal, or submitted a new or revised proposal with new supporting information. SP AusNet's revised proposal is for a total of \$1082.36m (\$2007-08) over the forthcoming regulatory control period. This is \$48.03m (\$2007-08), or 4.64%, more than SP AusNet's original proposal and \$152.87m (\$2007-08), or 16.45%, more than the AER's draft decision.

This difference between SP AusNet's revised proposal and the AER's draft decision is mainly driven by 'other' opex, which is \$123.93m (\$2007-08), or 22.96%, more than the AER's draft decision and \$55.33m (\$2007-08) more than SP AusNet's original proposal. Of other opex, this increase is driven by a \$80.55m (\$2007-08) increase in SP AusNet's easement tax forecast from its original forecast. For all other

¹⁰⁸ After initially submitting its original proposal to the AER on 28 February 2007, SP AusNet made several amendments to its original proposal, including to its rebates and easement land tax forecasts. The presentation of SP AusNet's original proposal in this table incorporates these amendments.

components of other opex, SP AusNet's revised proposal seeks a lower forecast than that in the original proposal.

SP AusNet's revised 'controllable' opex proposal is \$28.94m (\$2007-08), or 7.42%, more than the AER's draft decision, though \$7.30m (\$2007-08), or 1.71%, below SP AusNet's original proposal.

Excluding easement tax, SP AusNet's total revised opex proposal is for \$470.96m (\$2007-08), which is \$32.52m (\$2007-08) less than SP AusNet's original proposal of \$503.48m (\$2007-08).

Controllable opex

- SP AusNet implemented the AER's draft decision in respect of adjustments to asset works, insurance (routine maintenance), and the adjustment of SP AusNet's maintenance forecasts to account for the expected maintenance reductions resulting from its forward capex program. SP AusNet also implemented the AER's adjustment to its opex forecasts associated with the assets it is rolling into its RAB at the start of the forthcoming period, and the AER's reallocation of a small amount of inventory from non-network capex to opex.
- SP AusNet did not accept the AER's reductions to its taxes (routine maintenance) and management fees (corporate opex) forecasts, reinstating its original proposal¹⁰⁹, and submitting new information to the AER in support of these positions.
- SP AusNet did not accept the AER's calculation of the likely savings from its new north west (NW) region maintenance contract (routine maintenance). Whilst it did consider the AER's approach conceptually strong, having substituted the AER's assumptions with observed inputs, SP AusNet instead proposed that PB's calculation of the savings be adopted.

Other opex

- SP AusNet implemented the AER's draft decision, in respect of the debt raising cost methodology, and the removal of equity raising costs associated with its forward capex program.
- For self-insurance, equity raising costs associated with its initial capital base, rebates and easement land tax, SP AusNet did not accept the AER's draft decision and submitted revised forecasts with new information.

¹⁰⁹ In regards to its taxes (routine maintenance) forecasts, SP AusNet also updated the base year from which it forecast its taxes liabilities.

Table 6.2 SP AusNet’s revised proposal – Opex (2007-08 \$m)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
Asset works	13.67	13.79	14.50	14.19	14.50	14.20	84.86
Routine maintenance	32.88	33.68	34.40	35.10	35.72	36.30	208.08
Corporate	18.67	19.04	19.41	19.80	20.19	20.59	117.71
Rolled-in assets opex	1.23	1.26	1.29	1.32	1.34	1.37	7.81
Inventory	0.04	0.04	0.04	0.04	0.04	0.04	0.24
Subtotal - Controllable opex	66.49	67.81	69.65	70.45	71.79	72.50	418.70
Self-insurance	2.52	2.52	2.52	2.52	2.52	2.52	15.13
Equity raising costs	1.72	1.65	1.58	1.51	1.45	1.39	9.31
Debt raising costs	1.09	1.11	1.12	1.13	1.14	1.16	6.75
Rebates	3.51	3.51	3.51	3.51	3.51	3.51	21.09
Easement land tax	76.10	93.40	90.60	111.10	107.90	132.30	611.40
Subtotal - Other opex	84.94	102.19	99.34	119.78	116.53	140.89	663.67
Total	151.44	170.00	168.99	190.23	188.32	213.39	1082.36

Source: SP AusNet (revised cost templates)¹¹⁰

6.4 Submissions

Energy Users Association of Australia

In its submission, the Energy Users Association of Australia (EUAA) states that it fully supports the AER’s draft decision. The EUAA believes SP AusNet’s original opex proposal was “excessive”, and the EUAA notes that the AER’s draft decision identified similar issues to that raised by the EUAA in its submission on SP AusNet’s original proposal. The EUAA notes particular concern with SP AusNet’s proposed allowances for:

¹¹⁰ Each component of SP AusNet’s revised proposal is taken from SP AusNet’s revised cost templates, with the exception of easement land tax. SP AusNet submitted two easement land tax forecasts depending on the AER’s interpretation of the ‘easement tax change event’ provision of the NER. SP AusNet’s other forecast was for a total of \$516.20m (\$2007-08). The forecast displayed in table 6.2 is SP AusNet’s proposal that corresponds with the AER’s interpretation of the NER. These easement land tax forecasts are SP AusNet’s ‘alternative’ forecast as found in table 6.10.8 of SP AusNet, *Electricity Transmission Revised Proposal 2008/09 – 2013/14*, 12 October 2007, p. 170. More details on this matter are provided in section 6.7.5.

- equity raising costs associated with the initial capital base
- AIS rebates
- corporate opex, and
- easement land tax.¹¹¹

Energy Users Coalition of Victoria

The Energy Users Coalition of Victoria (EUCV) provided two submissions – one on the recommendations of the AER’s consultants, and the other on the AER’s draft decision.

The EUCV is very dissatisfied with the rigour of PB’s work, and considers it has not been as diligent as it should have been.¹¹²

On a benchmarking basis, the EUCV calculates that the draft decision implies an 11% step change in SP AusNet’s controllable opex from the current rate of opex. In principle, the EUCV considers this is “excessive” given the savings in opex from SP AusNet’s current capex program. The EUCV considers the AER should have had more regard to SP AusNet’s current performance and only allow adjustments which reflect known step changes.¹¹³

More specific matters raised by the EUCV are discussed in the sections of the issues to which they relate.

Transend

Transend considers SP AusNet’s revised proposal contains compelling information in support of its original proposal, particularly regarding corporate costs and the escalation rate for land.¹¹⁴ On this basis, Transend is concerned that whilst the AER’s draft decision makes numerous references to the NER requirements that the forecast opex must “reasonably reflect” the opex criteria, it appears in some instances to have applied a more onerous test than that mandated by the NER.

6.5 Regulatory requirements

The AER must assess the forecast opex in SP AusNet’s revised proposal under the same provisions of the NER as those applied in the AER’s draft decision to SP AusNet’s original proposal.

SP AusNet must include in its revenue proposal a forecast of the total opex for the regulatory control period that the TNSP will require in order to satisfy the opex objectives.¹¹⁵

¹¹¹ EUAA, *SP AusNet transmission draft revenue determination*, letter to AER, 3 December 2007, p.3.

¹¹² EUCV, *Victorian electricity transmission revenue reset – AER consultants reports – a response by the Energy Users Coalition of Victoria*, November 2007, p.27.

¹¹³ *ibid.*, pp.33-34.

¹¹⁴ Transend, *Submission of the AER’s draft decision on SP AusNet’s revenue proposal*, letter to AER, 14 November 2007, p.2.

¹¹⁵ NER, cl. 6A.6.6(a)

The AER must accept the forecast opex included in a revenue proposal if the AER is satisfied that the total forecast opex for the regulatory control period reasonably reflects the operating expenditure criteria.¹¹⁶ If the AER is not satisfied that SP AusNet's forecast opex reasonably reflects the operating expenditure criteria then the AER must not accept the forecast opex in a revenue proposal.¹¹⁷

In making this assessment, the AER must have regard to the opex factors listed in the NER.¹¹⁸

If, in its final decision on the revenue proposal, the AER does not accept the forecast of required operating expenditure for the regulatory control period, the AER must use a substitute forecast of the total required opex for the regulatory control period that the AER is satisfied reasonably reflects the opex criteria, taking into account the opex factors.¹¹⁹

The AER must also include in its final decision the forecast opex for each regulatory year which the AER is satisfied reasonably reflects the opex criteria, taking into account the opex factors, subject only to the requirement that the total of such forecasts must equate to the aforementioned forecast of the total required opex for the regulatory control period.¹²⁰

If a revised revenue proposal submitted by a TNSP in response to the AER's draft decision includes an amount of total forecast opex for the regulatory control period that is the same as that accepted or estimated (as the case may be) by the AER in its draft decision, then except to the extent that:

- either or both the following apply:
 - (iii) other changes have been made in the revised revenue proposal, or
 - (iv) the information contained in or accompanying the revised proposal differs from that contained in or accompanying the previous revenue proposal
 - and the changes are such that the AER is not satisfied that the total forecast opex reasonably reflects the opex criteria, taking into account the opex factors,
- the AER in its final decision must accept the forecast of required opex that is included in the revised revenue proposal.¹²¹

6.6 Issues and AER considerations – Controllable opex

This section analyses SP AusNet's proposed routine maintenance, asset works, corporate opex, and inventory forecasts, as well as its opex forecasts relating to assets that are currently regulated by the AER, which SP AusNet will be rolling into its RAB at the start of the forthcoming regulatory control period to provide prescribed services. SP AusNet collectively refers to these forecasts as 'controllable opex'.

¹¹⁶ NER, cl. 6A.6.6(c)

¹¹⁷ NER, cl. 6A.6.6(d)

¹¹⁸ NER, cl. 6A.6.6(e)

¹¹⁹ NER, cll. 6A.6.6(f) and 6A.14.1(3)(ii)

¹²⁰ NER, cl. 6A.13.2(b)(3)

¹²¹ NER, cl. 6A.14.3(c)

For several components of controllable opex, SP AusNet has forecast its opex from a base year (2006-07), escalating this base year expenditure by forecast real increases in labour costs. As this issue affects several components of controllable opex, it is addressed separately and upfront.

6.6.1 Base year expenditure and labour cost escalator

As noted above, in its original proposal, SP AusNet forecast significant components of its controllable opex by taking its expenditure from 2006-07 as a base year, and applying a labour cost escalator to the labour component of these costs. SP AusNet's routine maintenance (excluding insurance and taxes), corporate opex and support costs in asset works were forecast in this manner.

6.6.1.1 AER's draft decision

Base year expenditure

In its original proposal SP AusNet used its expenditure from 2006-07 as a base year, and did not make any adjustments to these amounts. The AER accepted SP AusNet's approach, though noted that the 2006-07 base year expenditure was partly estimated, due to the timing of SP AusNet's submission of its original revenue proposal. The AER stated that it would take into consideration SP AusNet's actual expenditure in this final decision.

Whilst the AER accepted this approach as an acceptable starting point from which to forecast SP AusNet's opex requirements, where these forecasts did not reasonably reflect an efficient, prudent or realistic level of SP AusNet's future opex requirements, the AER adjusted these forecasts. These adjustments are explained in more detail in the sections on routine maintenance, asset works and corporate opex.

Labour cost escalator

SP AusNet's original proposal contained a real annual labour cost escalator of 2.80%, based on a report from BIS Shrapnel, who forecast 2.80% real annual wage growth in the electricity, gas and water sector in Australia over 2008-13.¹²² BIS Shrapnel's real wage growth forecast was based on a nominal wage growth forecast of 5.70%.

To assess this forecast the AER engaged Econtech and PB. Econtech, considering mostly macroeconomic factors, forecast an average 6.38% nominal annual wage growth for the Victorian utilities sector over 2008-2013. PB, considering SP AusNet's current enterprise bargaining agreement negotiations and the long term historical wage growth in the Victorian utilities sector, forecast an average 5.13% nominal annual wage growth for SP AusNet over 2008-13.

As there was not a significant difference between these forecasts, and the nominal wage growth forecast that SP AusNet based its real cost escalator on fell in between

¹²² In the draft decision, the AER noted that SP AusNet's revenue proposal included a real labour escalator of 2.83%. SP AusNet advised that this figure was based on a draft report submitted by BIS Shrapnel to SP AusNet. The final BIS Shrapnel report included a real labour cost escalator of 2.8%. BIS Shrapnel's final report was not provided to SP AusNet in time for it to amend its proposal. The AER's analysis was based on the final BIS Shrapnel report and corresponding real labour escalator of 2.8%.

the two forecasts recommended by the AER's consultants, the AER considered SP AusNet's forecast reasonably reflected a realistic expectation of labour cost increases over the forthcoming regulatory control period.

6.6.1.2 SP AusNet's revised proposal

Base year expenditure

SP AusNet's revised proposal has substituted the partly estimated base year expenditure from its original proposal, with its actual expenditure from 2006-07. SP AusNet made one adjustment to its actual 2006-07 expenditure, being the removal of one-off costs associated with the January 2007 bushfires.

Whilst SP AusNet continues to forecast aspects of controllable opex using this base year expenditure escalated for increased labour costs, in some instances this is now only the first step and SP AusNet adjusts the forecast produced by this approach. For example, SP AusNet forecasts its maintenance costs following this approach, but then adjusted these forecasts downwards to account for the expected opex savings from SP AusNet's capex program, following the opex / capex trade-off methodology in the AER's draft decision.

Labour cost escalator

SP AusNet's revised proposal incorporates a real annual labour cost escalator of 2.83%.

6.6.1.3 Submissions

Energy Users Coalition of Victoria

The EUCV is critical of Econtech's analysis of labour costs and raises the following issues:

- The statistical increase in average wages during the process of deregulation (late 1990s / early 2000s) must be interpreted carefully. The EUCV claims that during this period the statistical increase in average wages was caused by the large numbers of low paid staff culled from the industry, rather than massive wages growth.
- Econtech draws a distinction between wages growth in the utilities sector and that in the construction sector, though the EUCV considers this distinction does not exist in reality as the majority of new investment by the utilities sector is carried out as construction activity.
- Econtech does not perform a statistical analysis of the errors that may be prevalent using the relatively small Victorian utilities and mining data sets.

Overall, the EUCV is of the view that:

- The wages growth forecast for the utilities sector by Econtech has to be treated with caution as it may not be reflective of SP AusNet's employment profile.

- There is not a sufficiently close relationship between wages growth and opex growth to be able to confidently extrapolate an increase for opex based on expected wages growth.¹²³

6.6.1.4 Issues and AER considerations

Base year expenditure

The AER has already accepted SP AusNet's approach of forecasting some components of its controllable opex from a 2006-07 base year, escalated for increased labour costs, as an appropriate first step to forecasting its future opex requirements, and sees no reason to depart from this position. The AER agrees with SP AusNet's removal of the one-off costs, relating to a bushfire, from its base year expenditure.

For use in its opex model, SP AusNet escalated its nominal 2006-07 expenditure by a factor of 1.026 to calculate its base year expenditure in real 2007-08 dollars. The AER understands this factor was based on a forecast of inflation between March 2006 and March 2007 (i.e. a lagged inflation escalation approach). Outturn inflation produced a factor of 1.024, and the AER has updated the escalation for this outturn inflation.

Labour cost escalator

SP AusNet's revised proposal incorporates a labour cost escalator of 2.83%. SP AusNet had previously advised that this forecast was from a draft of the BIS Shrapnel report, with the final report recommending a labour cost escalator of 2.8%. The AER has corrected for this, which has been confirmed by SP AusNet.

The AER notes the EUCV's comments on Econtech's advice. However, the AER considers Econtech's analysis is sufficiently robust has continued to rely on this advice in assessing the reasonableness of SP AusNet's proposal.

6.6.1.5 AER's conclusion

The AER accepts the base year expenditure in SP AusNet's revised proposal as a reasonable starting point from which to forecast SP AusNet's opex, subject to the outturn inflation correction. However, as in the draft decision, the forecasts from this approach have been adjusted (by SP AusNet and/or the AER) in some instances. These instances are discussed in more detail in the sections on routine maintenance and corporate opex.

Subject to the correction above, the AER has accepted the labour cost escalator in SP AusNet's revised proposal, which implements the draft decision, which in turn accepted SP AusNet's original proposal. No new information was contained in or accompanied the revised proposal that has given the AER cause to depart from its draft decision on this matter.

6.6.2 Asset works opex

SP AusNet's asset works program relates to the non-recurrent works on its electricity transmission system. Unlike routine maintenance, the asset works program is directed

¹²³ EUCV, *Victorian electricity transmission revenue reset – AER draft determination – a response by the Energy Users Coalition of Victoria*, November 2007, pp.11-15.

at addressing specific problems on the transmission system. Asset works may include works of a capital nature (such as asset replacements), which SP AusNet classifies as opex rather than capex if the work does not extend the technical life of the asset.

6.6.2.1 AER's draft decision

SP AusNet's asset works program totalled \$90.26m (2007-08) in its original proposal. In its draft decision the AER rejected this forecast and instead approved a substitute forecast of \$85.56m based on the following adjustments to SP AusNet's proposal:

- reduction of \$0.5m from the cable repairs project forecast, which related principally to the unnecessary testing of joints after their removal and replacement
- substitution of the asset works internal cost forecast with the bottom-up estimate that SP AusNet conducted, instead of the historical costs on which SP AusNet had based its proposal
- correction of a minor discrepancy between the costs in the detailed project documentation and the costs in SP AusNet's opex model relating to the tower foundation corrosion program
- correction of an inflation escalation error across several projects
- reduction of SP AusNet's proposed miscellaneous works allowance, from a total of \$6.50m, which the AER found to be unsubstantiated, to 1% of controllable opex

These findings led to an overall reduction of \$4.69m (2007-08).

Table 6.3 AER's draft decision – Asset works (2007-08 \$m)

	SP AusNet's original proposal	AER's adjustment	AER's draft decision
Asset works	90.26	-4.69	85.56

Source: AER¹²⁴

6.6.2.2 SP AusNet's revised proposal

SP AusNet has implemented the AER's draft decision on asset works in its revised proposal.

6.6.2.3 Submissions

Energy Users Coalition of Victoria

The EUCV calculates that SP AusNet underspent on its asset works allowance by approximately \$3m per annum during the current period. The EUCV considers that SP AusNet benefited from this underspend yet it appears SP AusNet is now seeking an opex allowance to carry out these uncompleted works in the forthcoming period,

¹²⁴ AER, *Draft decision – SP AusNet transmission determination 2008-09 to 2013-14*, 31 August 2007, p. 150.

and at higher cost, “effectively double dipping or being paid for the same work twice”.¹²⁵

6.6.2.4 Issues and AER considerations

The calculation of the miscellaneous works allowance, which was set in the draft decision at 1% of controllable opex, has produced a different allowance to that in SP AusNet’s revised proposal, reflecting the AER’s final decision on other components of controllable opex, such as routine maintenance and corporate opex, which are considered later in this chapter. The asset works allowance in this final decision differs from that in SP AusNet’s revised proposal and the AER’s draft decision due principally to this interdependency between the miscellaneous works allowance and the other components of controllable opex, which differ between these documents.

The AER notes the EUCV’s submission, however even if SP AusNet were seeking an allowance for some of the same assets works already provided for under the current revenue determination, the NER does not permit the AER to disallow these forecasts on this basis alone.

6.6.2.5 AER’s conclusion

Subject to the qualifications above, the AER has accepted SP AusNet’s revised proposed forecast of asset works opex, which implements the draft decision. No new information was contained in or accompanied the revised proposal that has given the AER cause to depart from its draft decision on asset works. The asset works forecast in this final decision differs from that in SP AusNet’s revised proposal, principally to incorporate the interdependency between the miscellaneous works allowance and the other components of this decision, the former being set at 1% of controllable opex.

Table 6.4 AER’s final decision – Asset works (2007-08 \$m)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
External contractor costs	10.16	10.27	10.97	10.66	10.96	10.66	63.68
Internal SP AusNet costs	2.12	2.12	2.12	2.12	2.12	2.12	12.72
Increased labour costs ¹²⁶	0.09	0.09	0.10	0.09	0.10	0.09	0.57
Support SNR	1.28	1.29	1.29	1.30	1.30	1.31	7.77
Total	13.66	13.77	14.48	14.17	14.48	14.18	84.74

Source: AER analysis

¹²⁵ EUCV, op. cit., pp.24-25.

¹²⁶ Relates to ‘external contractor costs’ and ‘internal SP AusNet costs’ only. Increased labour costs relating to ‘support SNR’ are already included in that line item.

Table 6.5 AER's final decision – Asset works (2007-08 \$m)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's revised proposal	13.67	13.79	14.50	14.19	14.50	14.20	84.86
AER's adjustment	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.12
AER's final decision	13.66	13.77	14.48	14.17	14.48	14.18	84.74

Source: SP AusNet (revised cost templates), AER analysis

6.6.3 Routine maintenance opex

SP AusNet's routine maintenance opex refers to opex relating to maintenance, system operation, OHS, support SR (system recurrent), taxes and insurance. SP AusNet describes its routine maintenance opex as system recurrent.

6.6.3.1 AER's draft decision

In the draft decision, the AER did not accept SP AusNet's maintenance forecast of \$113.82m (\$2007-08), making two adjustments that lead to a combined reduction of \$9.22m, and substituting an allowance of \$104.60m (\$2007-08). The AER also made adjustments to SP AusNet's proposed allowances for taxes and insurance.

Maintenance (NW contract)

Maintenance of SP AusNet's north-west (NW) region (approximately two thirds of its asset base) is contracted out to a third party. SP AusNet changed contractor at the start of the 2007-08 regulatory year. The new contract was awarded to Powercor and resulted in cost savings to SP AusNet, however as SP AusNet's maintenance costs were forecast from a 2006-07 base year, the new contract savings had not been factored into SP AusNet's forecasts. PB also formed this opinion, estimating the contract savings by comparing Powercor's successful tender with Transfield's unsuccessful tender, and assuming Transfield's unsuccessful tender was a reasonable proxy for the current contract, also held by Transfield. The AER estimated the contract savings in a more direct method, based on the new contract's charges which were submitted by SP AusNet. However this approach required the AER to estimate the proportion of total maintenance costs attributable to the NW contract under the existing contract. The AER made a conservative assumption that the NW region accounted for only 40% of total maintenance costs, which resulted in a reduction of \$6.77m (\$2007-08).

Maintenance (opex / capex tradeoff)

The AER considered that SP AusNet's forecast capex and asset works programs would be expected to lead to savings in maintenance costs, and these had not been captured by SP AusNet's opex modelling. To determine the likely savings, the AER implemented a methodology recommended by PB. This approach involved calculating the annual forecast capex as a portion of the RAB replacement cost, reducing this ratio by 30% to account for expected maintenance savings, and then applying this ratio in SP AusNet's opex model. The AER determined the opex savings resulting from the capex allowance in the draft decision would likely lead to \$4.8m in

savings. As the NW region maintenance had been forecast on a separate basis, this adjustment related only to the non-NW region maintenance forecast.

Taxes

In its original proposal, SP AusNet’s taxes forecast for council rates and water rates was calculated by applying a 4% annual real escalator to a 2006-07 base year expenditure. To forecast its land tax, SP AusNet escalated the value of its land by 4%, before applying the applicable tax rates to produce its forecast. The 4% escalator was based on the 20 year simple average increase in Melbourne house prices. The AER did not consider the use of a simple average was appropriate to determine the escalator, as it does not take into account the timing of historical growth. Using the same inputs, but applying a compound average, the AER approved an escalator of 3.63%, and made a total reduction of \$1.08m (\$2007-08).

Insurance

The AER also adjusted SP AusNet’s proposed insurance allowance to account for the asset split between regulated and unregulated transmission assets, leading to a reduction of \$1.38m (\$2007-08). SP AusNet’s proposal had incorrectly sought an insurance allowance covering both its regulated and unregulated transmission assets.

Table 6.6 AER’s draft decision – Routine maintenance (2007-08 \$m)

	SP AusNet’s original proposal	AER’s adjustment	AER’s draft decision
Routine maintenance	206.63	-11.67	194.96

Source: AER¹²⁷

6.6.3.2 SP AusNet’s revised proposal

In its revised proposal, SP AusNet has implemented the AER’s methodology of adjusting its maintenance forecasts to incorporate the expected opex savings from SP AusNet’s forward capex program (the opex / capex tradeoff). SP AusNet has also implemented the AER’s draft decision on insurance, removing that part of its forecast insurance that relates to its non-regulated transmission assets.

SP AusNet has not implemented the draft decision in respect of NW region maintenance forecasts, or the taxes forecast.

Maintenance (NW contract)

On the new NW contract maintenance forecast, SP AusNet disagrees with the AER’s draft decision in two respects:

- the calculation of the savings from the new contract, and
- the regulatory treatment of those cost savings.

On the calculation of the savings, SP AusNet considers that, in principle, PB’s estimation is conceptually weaker than the AER’s more direct method. However,

¹²⁷ AER, op. cit., p. 159.

SP AusNet disagrees with the two components behind the AER's method that were estimated being:

- the NW contract contains only "labour" and "maintenance" costs, and
- the contract accounts for 40% of total maintenance costs.

SP AusNet considers these two assumptions lead to an overstatement of the cost savings from the new contract, and provided a spreadsheet calculating the savings using the AER's more direct method, but substituting these two assumptions for observed inputs. However, SP AusNet states:

By coincidence, the resulting calculations using the appropriate input data produces cost savings that are not materially different to PB's alternative calculation. For the purposes of this revised proposal, therefore, SP AusNet would be prepared to accept PB's estimate of the cost savings arising from the new contract.¹²⁸

On the treatment of the savings, SP AusNet disagrees with the AER's draft decision that asserted SP AusNet's treatment of these savings lead to a double reward for these savings. Whilst SP AusNet did not decrease its base year expenditure to account for the savings, neither did it include the savings in its calculation of the glide path allowance, as stated by the AER. In light of the draft decision, SP AusNet states:

...SP AusNet has amended the glidepath calculation set out in chapter 10, to take account of the additional savings that are expected to be associated with the new NW contract. This results in a modest increase in the glidepath amounts. Importantly however, SP AusNet has also reduced its opex forecast for the next regulatory period to take account of the savings that are now expected to be delivered by the new NW contract.¹²⁹

Taxes

SP AusNet does not dispute that a compound average would be the most appropriate method if that were the only consideration. Whilst SP AusNet's original proposal used the long term average in Melbourne house prices as a proxy for the increase in its land tax, SP AusNet now states that this ABS measure is not representative of SP AusNet's specific land held. SP AusNet claims that the taxable value of its land has increased by 9.1% pa (real, compound average) over the current regulatory control period. SP AusNet concludes from this that the 4% real land escalator in its original proposal was conservative in comparison, and reinstates this escalator in its revised proposal.

SP AusNet also updated its tax calculation to incorporate its 2007 preliminary land tax assessment, issued by the Victorian State Revenue Office. This means that 2007-08 is now the base year from which SP AusNet's land tax has been forecast.

¹²⁸ SP AusNet, *Electricity Transmission Revised Proposal 2008/09 – 2013/14*, 12 October 2007, p. 157.

¹²⁹ *ibid.*, p. 158.

Table 6.7 SP AusNet’s revised proposal – Routine maintenance (2007-08 \$m)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
Maintenance	18.48	18.70	18.91	19.13	19.36	19.57	114.14
System operation	2.41	2.46	2.52	2.57	2.63	2.69	15.29
OHS	0.69	0.70	0.71	0.72	0.73	0.74	4.31
Support SR	4.91	5.03	5.15	5.27	5.40	5.53	31.30
Taxes	3.68	3.83	3.99	4.15	4.32	4.50	24.46
Insurance	2.71	2.96	3.12	3.25	3.27	3.27	18.58
Total	32.88	33.68	34.40	35.10	35.72	36.30	208.08

Source: SP AusNet (revised cost templates)

6.6.3.3 Submissions

Energy Users Coalition of Victoria

The EUCV notes that SP AusNet’s forecast of its routine maintenance is more consistent with its historical costs than other parts of its proposal, though the EUCV considers the proposed allowances for OHS and support activities appears to overlap with the proposed management fee allowance in corporate opex.¹³⁰

6.6.3.4 Issues and AER considerations

Maintenance (NW contract)

The AER engaged PB to review SP AusNet’s revised proposal. PB maintains that the methodology it used to estimate the likely savings in its original report provide a reasonable insight into the probable savings that will result from the implementation of the new contract. PB has also reviewed the AER’s calculation of the likely savings, with SP AusNet having updated the AER’s assumptions with observed inputs. PB considers this also produces a reasonable estimate of the likely savings. As SP AusNet stated that it was prepared to accept, and in its revised proposal has adopted, PB’s estimate of the contract savings, PB considers there is no reason to depart from this approach.¹³¹

Based on the further information provided by SP AusNet in its revised proposal, the AER considers that both approaches provide a reasonable estimate of the likely savings from the new NW contract. The AER therefore accepts SP AusNet’s implementation of PB’s approach in its revised proposal.

The AER agrees with the approach to the regulatory treatment of these savings that has now been incorporated by SP AusNet in its revised proposal. This provides that SP AusNet’s opex forecast reasonably reflects a realistic opex forecast, whilst rewarding opex savings from the current period in the glide path allowance. This

¹³⁰ EUCV, op. cit., pp.26-27.

¹³¹ PB, *SP AusNet revenue reset – advice on revised revenue proposal*, 8 January 2008, pp.36-37.

implements the approach intended in the AER's draft decision, though the draft decision mistakenly assumed that SP AusNet's glide path allowance calculation incorporated all expected opex savings from the last year of the regulatory control period, when SP AusNet had in fact only included some but not all expected savings.

Maintenance (opex / capex trade-off)

SP AusNet accepted the AER's methodology for calculating the expected opex savings from SP AusNet's forward capex program (i.e. the opex / capex trade-off), which were ignored in the maintenance forecasts in SP AusNet's original opex model. As expected, the predicted opex savings from this methodology is dependant on the level of capex assumed. The opex / capex trade-off maintenance savings in this final decision differs from that in SP AusNet's revised proposal and the AER's draft decision due purely to the interdependency between this methodology and SP AusNet's capex allowance, which differs from that in SP AusNet's revised proposal.

Taxes

Melbourne property prices have been the subject of a very substantial property boom over SP AusNet's current regulatory control period. Whilst the AER considers that the 9.1% real annual increase in SP AusNet's taxable land value is highly unlikely to be sustained throughout SP AusNet's forthcoming period, the AER considers SP AusNet's justification of its original 4% escalator, given the very high historical growth, is reasonable. The AER also accepts SP AusNet's updating of its base year taxable land value with its 2007 preliminary taxable land value.

However the revised tax model submitted by SP AusNet did not reconcile with SP AusNet's cost templates. The AER has assumed this is an error in the cost templates rather than the tax model underlying these templates, and has corrected for this difference.

Insurance

SP AusNet accepted the draft decision's reallocation of SP AusNet's insurance forecast, which had allocated the insurance costs for both the regulated and unregulated transmission assets to the regulated transmission business in SP AusNet's original proposal. However, subsequent to the submission of its revised proposal, SP AusNet provided the AER with its updated insurance premiums, now that these had become available. The AER accepts SP AusNet's updated insurance premiums.

6.6.3.5 AER's conclusion

The AER accepts SP AusNet's revised proposed forecast routine maintenance, which implements the draft decision in respect of insurance (subject to the update of SP AusNet's premiums) and the opex savings expected from the opex / capex trade-off. The maintenance forecast in this final decision differs from that in SP AusNet's revised proposal, principally due to the interdependency between this forecast and the capex forecast as a result of the opex / capex trade-off, with the capex allowance in this decision differing from that in SP AusNet's revised proposal.

The new information contained in and accompanying the revised proposal is such that the AER is now satisfied that the NW contract savings assumed in SP AusNet's

revised maintenance forecasts, and SP AusNet’s forecast taxes reasonably reflect the opex criteria, taking into account the opex factors.

Table 6.8 AER’s final decision – Routine maintenance (2007-08 \$m)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
Maintenance	18.44	18.68	18.90	19.11	19.34	19.55	114.02
System operation	2.40	2.46	2.51	2.57	2.62	2.68	15.24
OHS	0.69	0.70	0.71	0.72	0.73	0.74	4.30
Support SR	4.90	5.02	5.14	5.26	5.38	5.51	31.20
Taxes	3.52	3.66	3.81	3.97	4.13	4.30	23.41
Insurance	3.10	3.20	3.26	3.39	3.41	3.41	19.77
Total	33.05	33.72	34.33	35.02	35.63	36.20	207.94

Source: AER analysis

Table 6.9 AER’s final decision – Routine maintenance (2007-08 \$m)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet’s revised proposal	32.88	33.68	34.40	35.10	35.72	36.30	208.08
AER’s adjustment	+0.17	+0.04	-0.07	-0.08	-0.09	-0.10	-0.14
AER’s final decision	33.05	33.72	34.33	35.02	35.63	36.20	207.94

Source: SP AusNet (revised cost templates), AER analysis

6.6.4 Corporate opex

SP AusNet’s corporate opex comprises management fees, finance, HR, IT and ‘other’ corporate expenditure. SP AusNet describes its corporate opex as system non-recurrent expenditure.

6.6.4.1 AER’s draft decision

SP AusNet’s “management” is essentially entirely outsourced to a management company, SPI Management Services, a related party and wholly-owned subsidiary of its majority shareholder, Singapore Power International, via a management services agreement. The management company employs all of SP AusNet’s senior staff including SP AusNet’s CEO and general managers. SP AusNet’s proposed management fees represented 43% of SP AusNet’s total corporate opex forecast of \$117.71m (\$2007-08).

In the draft decision, the AER did not accept all of SP AusNet’s proposed \$50.32m (\$2007-08) opex allowance for management fees payable under this contract, which on the balance of information available was found to be excessive, and not reasonably

reflective of an efficient level of management expenditure that a prudent operator in SP AusNet’s circumstances would require to achieve the opex objectives.

The AER determined a benchmark cost of management based on salary information provided by SP AusNet, and allowing for real labour increases and on-costs such as superannuation, payroll tax and workcover. This analysis produced an estimate of the efficient costs for management of SP AusNet over the next six years of \$109.29m (\$2007-08). Following SP AusNet’s cost allocation policy, the regulated transmission business’ share of these costs would be \$35.19m (\$2007-08), \$15.19m (\$2007-08) less than SP AusNet’s proposed allowance for management fees.

The AER made a reduction of \$15.19m (\$2007-08) to SP AusNet’s proposal to derive a substitute forecast management fee allowance of \$35.19m (\$2007-08), which the AER was satisfied reasonably reflected the costs that a prudent operator in SP AusNet’s circumstances would require.

The AER accepted SP AusNet’s proposed allowances for the other elements of its corporate opex forecast, which related to finance, HR, IT and ‘other’ corporate.

Table 6.10 AER’s draft decision – Corporate opex (2007-08 \$m)

	SP AusNet’s original proposal	AER’s adjustment	AER’s draft decision
Corporate opex	117.71	-15.19	102.52

Source: AER¹³²

6.6.4.2 SP AusNet’s revised proposal

SP AusNet disagrees with the AER’s draft decision on the management fees, and has reinstated its original proposed forecast, with updated base year costs incorporating actual expenditure for 2006-07.

SP AusNet states that the benchmark approach used by the AER is “seriously flawed”.¹³³ SP AusNet claims that the average salaries in the SAHA report relied upon by the AER are for SP AusNet as a whole, and do not provide a fair representation of the labour costs in the management company. SP AusNet also advises that the salaries stated in the SAHA report (that SP AusNet provided the AER in support of its original self insurance proposal) are inaccurate. The report mistakenly stated that SP AusNet’s general managers earn an average salary of \$212 384. SP AusNet now advises that SP AusNet’s general managers in fact earn an average salary of \$387 767. SP AusNet also claims that the AER’s approach does not provide for non-remuneration costs, such as consulting and administration services.

SP AusNet recognises that the NER¹³⁴ require the AER have regard to benchmark expenditure that would be incurred by an efficient TNSP, but considers a benchmark

¹³² AER, op. cit., p. 166.

¹³³ SP AusNet, op. cit., p. 162.

¹³⁴ NER, cl. 6A.6.6(e)(4)

for management costs is difficult to construct. SP AusNet refers the AER to an international study that found that, overall, SP AusNet is a very cost efficient TNSP.

SP AusNet notes PB's opinion that the introduction of the management company did not lead to an overall increase in corporate overheads. SP AusNet considers this to be the proper focus of the AER's analysis. From the year before the merger and introduction of the management company, to the year after, SP AusNet states that its overall controllable opex decreased by \$1.8m. The overall outcome SP AusNet claims, is therefore demonstrably efficient. In assessing the management fees, SP AusNet does not believe the AER had sufficient regard to its historical opex during the current period.¹³⁵

In addition to its Australian based staff, the management company contracts the services of Singapore based, senior executives of its owner, Singapore Power International. In 2006-07, 18% of the management company's costs were management fees that it paid back to Singapore Power. SP AusNet claims that these services are a fundamental component of the management of SP AusNet, and cover all aspects of good corporate governance, including:

- accountability
- risk management
- planning
- audit
- financial reporting
- due diligence
- corporate funding (treasury)

SP AusNet's base year expenditure for management fees is based on the actual fees SP AusNet paid in 2006-07. SP AusNet notes that in 2006-07, the management company's actual costs were higher than the fees charged to SP AusNet. SP AusNet states that if the AER considers the opex allowance should be based on these higher costs of the management company, rather than the costs incurred by SP AusNet, than SP AusNet would agree to that approach.

SP AusNet believes the management fees in its original proposal should be reinstated in full, subject to the updating of the base year costs.

¹³⁵ NER, cl. 6A.6.6(e)(5)

Table 6.11 SP AusNet's revised proposal – Corporate (2007-08 \$m)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
Management fees	7.44	7.65	7.87	8.09	8.32	8.55	47.91
Finance	2.79	2.84	2.89	2.94	3.00	3.05	17.51
HR	0.76	0.77	0.78	0.79	0.80	0.81	4.69
IT	4.36	4.41	4.47	4.53	4.59	4.65	27.02
Other corporate	3.33	3.37	3.41	3.45	3.49	3.53	20.57
Total	18.67	19.04	19.41	19.80	20.19	20.59	117.71

Source: SP AusNet (revised cost templates)

6.6.4.3 Submissions

Energy Users Coalition of Victoria

The EUCV notes that the Essential Services Commission of Victoria (ESCV) examined SP AusNet's management fees in relation to SP AusNet's gas distribution price review, and concluded that that part of the management fees that was, in turn, paid as management fees to Singapore Power International, the management company's owner, was not a legitimate expense to be included in the regulatory opex.¹³⁶

The EUCV lists the management company's functions, as stated by SP AusNet in its original proposal. The EUCV considers:

Many of these functions do not relate to the business of providing a transmission service. Particularly the activities of evaluation of business opportunities, public and investor relations, and legal and company secretarial services cannot be justified. Further, there are already costs provided for IT, finance management, HR and other corporate activities, indicating a double dip for these corporate services.¹³⁷

The EUCV notes that the AER's approach to assessing management fees was based on the number of staff employed by the management company. The EUCV comments that this approach has validity only if the number of staff employed reflects that needed for an efficient operation, which the AER has not assessed.

The EUCV concurs with the assessments of the ESCV and Essential Services Commission of South Australia (ESCOSA) that management fees need to be carefully examined to ensure all non-network service related costs are excised. The EUCV does not consider the AER has been as rigorous as other regulators in its scrutiny of management fees.

¹³⁶ EUCV, *Victorian electricity transmission revenue reset – AER consultants reports – a response by the Energy Users Coalition of Victoria*, November 2007, p.24.

¹³⁷ *ibid.*, p.26.

More broadly, the EUCV notes that SP AusNet’s forecast corporate opex is nearly 30% of its total opex proposal, extending this to suggest that “for every two people who are physically carrying out work in the field, there is one person in head office”.¹³⁸

The EUCV considers that:

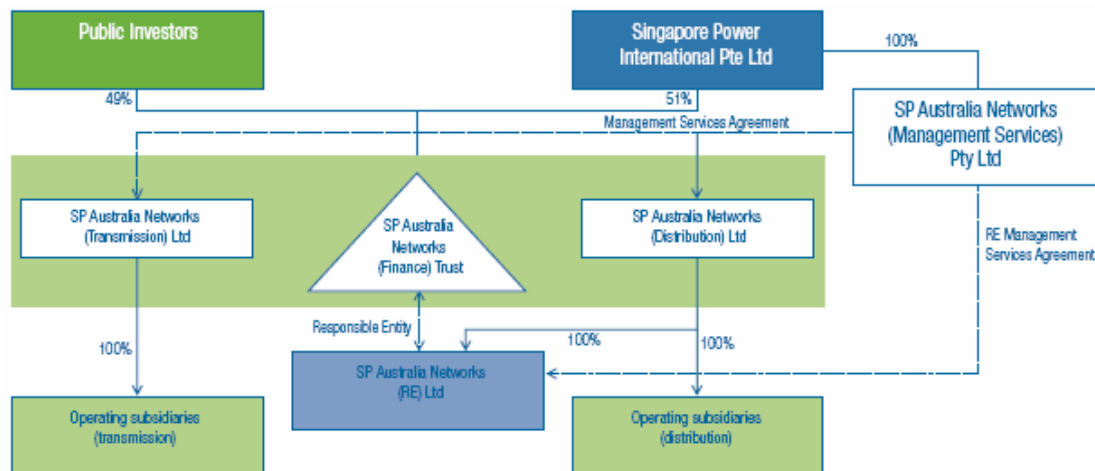
No business in a competitive market will survive if its corporate cost is 30% of its opex, and 10% is seen as a more acceptable benchmark for competitive enterprises.¹³⁹

The EUCV also notes that SP AusNet’s opex costs as a proportion of its RAB have increased from 0.5% to 0.8%, between its 2002 revenue proposal and its current proposal.¹⁴⁰

6.6.4.4 Issues and AER considerations

SP AusNet is a stapled entity comprising a transmission business (electricity), a distribution business (electricity and gas), and a finance trust, which invests and borrows money for the operations of the group. SP AusNet is 51% owned by Singapore Power International. The management company, which is 100% owned by Singapore Power International, has entered into a single management services agreement with SP AusNet transmission and SP AusNet distribution. A separate management services agreement also exists between the management company and the responsible entity of the finance trust. This relationship is illustrated in figure 6.1

Figure 6.1 SP AusNet ownership and management structure



Source: SP AusNet¹⁴¹

No part of the management fees should compensate Singapore Power International for its required return on equity for its ownership of SP AusNet. This is because the cost of equity is compensated for through the WACC. Nor should the management fees

¹³⁸ *ibid.*, p.25.

¹³⁹ *id.*, *Victorian electricity transmission revenue reset – AER draft determination – a response by the Energy Users Coalition of Victoria*, November 2007, p.11.

¹⁴⁰ *ibid.*, p.38.

¹⁴¹ SP AusNet, *SP AusNet prospectus and product disclosure statement*, p.3.

compensate Singapore Power International for the costs it previously incurred to purchase SP AusNet, as a benchmark equity raising cost is provided for elsewhere in SP AusNet's opex allowance. The management fees should only compensate for the efficient, prudent and realistic costs of management required for the provision of prescribed transmission services.

The fact that a function, in this instance management, is outsourced by a TNSP does not of itself affect the AER's assessment of what it considers to be an efficient, prudent and realistic cost – in this case, the cost of management. The key issue is whether the arrangement is efficient rather than whether it is carried out through an in-house process or is outsourced. The fact that SP AusNet has entered into a contract with a third party does not of itself demonstrate that the contract price is efficient and prudent, and so does not automatically mean the price of the contract complies with the opex criteria against which the AER must assess SP AusNet's proposal. Clause 6A.6.6(e)(9) of the NER explicitly requires the AER, in assessing SP AusNet's forecast opex requirements, to have regard to the extent to which SP AusNet's forecast of required opex is referable to arrangements with a person other than SP AusNet that, in the opinion of the AER, do not reflect arm's length terms.

The AER's draft decision relied upon salary information in the SAHA report provided to the AER by SP AusNet (which SP AusNet had itself provided to SAHA). SP AusNet has subsequently informed the AER that this information was inaccurate. As mentioned above, the original SAHA report mistakenly stated that the average salary of SP AusNet's general managers was \$212 384. SP AusNet now states that the average salary of its general managers is \$387 767, an increase of 83%.

Had the correct information been available to the AER at the time, the AER's draft decision would have led to a management fee allowance of \$44.24m (\$2007-08), instead of \$35.19m (\$2007-08).

The AER is concerned at the lack of due diligence on the part of SP AusNet in reviewing the accuracy of the information underlying its revenue proposal.

SAHA describes the error as:

Original calculations were incorrect as there was incomplete data provided (only data for 6 of 9 GMs), and the average calculations were undertaken using a divisor of 9 instead of 6.¹⁴²

Whereas SP AusNet states:

...SP AusNet supplied data to SAHA for the executive costs which included remuneration for only the part of the year the executive was employed. Regrettably, SP AusNet did not alert SAHA to the need to annualise these salary costs before the average was calculated.¹⁴³

¹⁴² SAHA, *SP AusNet – Response to AER on self-insurance risk draft decision – Final report*, October 2007, p.6.

¹⁴³ SP AusNet, *Electricity Transmission Revised Proposal 2008/09 – 2013/14*, 12 October 2007, p. 162. Whilst SAHA's and SP AusNet's descriptions of the error appear to contradict each other, when questioned on this, SP AusNet informed the AER that the error described by SAHA is in addition to that outlined by SP AusNet, and in fact both errors occurred.

SP AusNet criticises the AER’s benchmark, claiming that the salaries in the SAHA report were for “SP AusNet as a whole”, and do not provide a fair representation of the labour costs in the management company.¹⁴⁴ Whilst the presumption that management earns higher salaries than subordinates is entirely reasonable, it is clear that the salaries in the SAHA report are not for SP AusNet as a whole.

The report states SAHA’s assessment of the salaries of SP AusNet’s “key people”. This does not include salaries for linesmen, maintenance workers, administrative staff or other employees whose salaries would be expected to be lower than the senior executives in the relevant entity. Rather the average salaries in the SAHA report are only for senior employees, and specifically:

- general managers (\$387 767)
- team leaders (\$97 947)
- managers (\$178 906)
- specialist engineers (\$135 908)
- lead engineers (\$155 254), and
- other senior officers (\$107 657).

The AER’s draft decision assumed that the salaries for staff such as general managers, managers and team leaders were a very good proxy for the salaries of employees in the management company. As stated by SAHA, the average salaries of the nine general managers in SAHA’s report relate specifically to the nine general managers in the management company.¹⁴⁵

In response to SP AusNet’s comment that the AER’s benchmark did not provide for the non-remuneration costs of the management company, the AER notes that the draft decision in fact stated this assumption, but considered the several conservative assumptions made in deriving the benchmark provided for such costs implicitly. SP AusNet has previously estimated that the non-remuneration costs of the management company (allocated to regulated transmission) were only \$0.71m pa.¹⁴⁶

SP AusNet claims overall benchmarks, rather than management cost specific benchmarks, are easier to construct. Whilst the international study referred to by SP AusNet may suggest that SP AusNet’s *overall* operations are efficient, this assertion says nothing about the efficiency and prudence of SP AusNet’s management fees, which is the issue in point.

SP AusNet also considers that the overall effect of the merger and introduction of the management company, which reduced total controllable opex requirements by \$1.8m between 2004-05 and 2006-07, should be assessed together. SP AusNet’s presentation of this effect may be misleading. The AER considers if the merger and introduction of

¹⁴⁴ *ibid.*

¹⁴⁵ SP AusNet’s executive management team consists of a CEO, seven general managers, and a company secretary – a total of nine “general managers”.

¹⁴⁶ *id.*, *SP AusNet prospectus and product disclosure statement*, p.73. \$0.71m is calculated as \$2.2m times transmission allocation (35%) times regulated transmission allocation (92%).

the management company were to lead to cost savings, that these would most likely occur within recurrent expenditure (routine maintenance and corporate).

The AER engaged PB to review SP AusNet’s revised proposal and the accompanying supporting information. PB found that total recurrent expenditure has remained relatively stable from 2004-05 to 2006-07, and states:

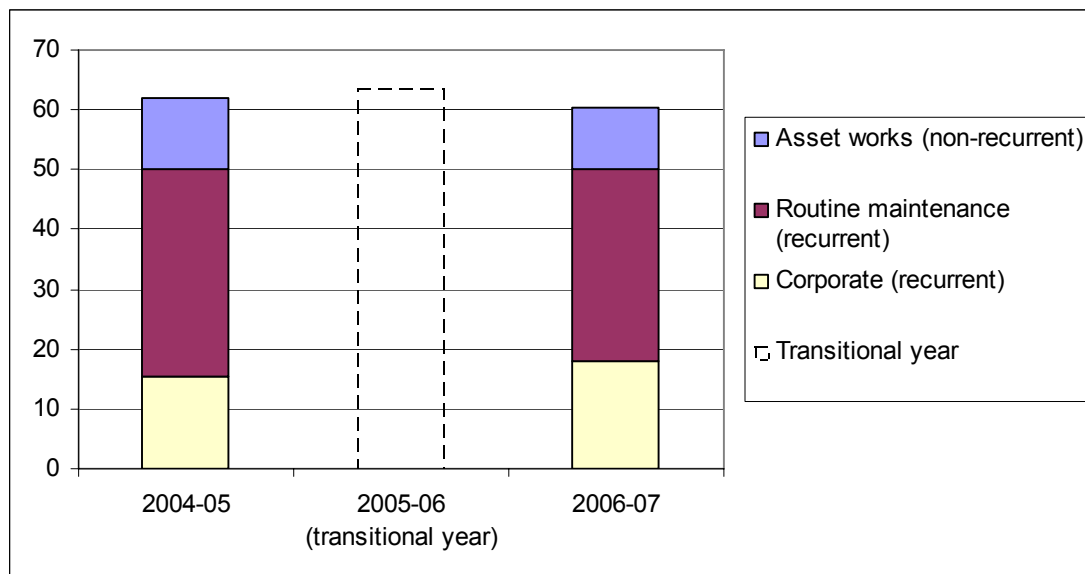
Our conclusion from this review is consistent with the findings of our first review namely that while maintenance and operating expenditures do not appear to have risen as a result of the merger, or the formation of the Management Company, it does not appear that any of the expected economy of scale (or scope) savings have been incorporated into the forecasts for these expenditures for the next regulatory period.¹⁴⁷

The AER has drawn two possible conclusions from PB’s analysis. Either:

- the merger lead to little or no cost savings, and the introduction of the management company lead to little or no cost increases, or
- the merger lead to overall cost savings, however these were negated by an increase in management costs.

As illustrated below, the net effect of the merger and introduction of the management company had almost no effect on recurrent expenditure – in fact, recurrent expenditure increased marginally by \$0.04m expenditure.

Figure 6.2 Effect on opex of merger and introduction of the management company (2007-08, \$m)



Source: SP AusNet, AER analysis

The \$1.8m saving referred to by SP AusNet (\$1.57m after updating the 2006-07 expenditure for actuals) is entirely driven by a reduction in assets works expenditure between 2004-05 and 2006-07. Asset works is by its very nature non-recurrent, and varies each year depending on individual projects. Around 75% of asset works costs are external contractor costs, and the AER can see no logical reason why this would

¹⁴⁷ PB, op. cit., 8 January 2008, p.39.

decrease by any significant amount as a result of the merger. On this basis it seems that the latter of the two possible conclusions prevails, and that the decrease in SP AusNet's controllable opex following the merger and the introduction of the management company cannot be directly attributed to the management contract, which seems if anything to have increased SP AusNet's overall recurrent costs (i.e. routine maintenance and corporate opex). The decrease in controllable opex referred to by SP AusNet, essentially a decrease in asset works costs only, therefore does not support SP AusNet's assertion that its corporate costs are "demonstrably efficient".

SP AusNet's revised proposal includes a breakdown of the costs of the management company, which were \$25.93m (nominal) in 2006-07. Of this, \$7.72m was allocated to the regulated transmission business, though only \$6.86m (nominal) was payable by SP AusNet under contract. This breakdown shows in total the management company paid \$4.50m to Singapore Power International as a "management fee". Of this, \$1.44m (nominal) was attributable to the regulated transmission business. In exchange for this management fee, SP AusNet claims that Singapore Power International provides the management company (and in turn, SP AusNet) the corporate governance services listed in section 6.6.4.2.

Most of these functions are of a very broad nature, such as "accountability" and "due diligence". PB reviewed SP AusNet's corporate governance arrangements and found that there appeared to be a full Australian Board providing governance to SP AusNet, as well as a complete Australian based management team led by the CEO providing management and governance services to the business. PB considered that this management team appeared to have the ability to provide all the services that SP AusNet claims are performed by the Singapore based staff. PB concludes:

PB, therefore, has some difficulty in understanding from the information provided in Appendix L, what additional essential management and corporate governance services are provided by the staff based in Singapore.¹⁴⁸

PB does not consider that the information provided by SP AusNet supports its claim that the Singapore based staff are a fundamental component of the governance and management of SP AusNet, and are an essential addition to the governance and management provided by the SP AusNet Board and Australian based management team. On this basis, PB concludes that the management fee paid to Singapore Power International is not a cost that a prudent operator in SP AusNet's circumstances would require to achieve the opex objectives. PB recommends SP AusNet's allowance be based on the management company's actual costs after deducting the fee paid to Singapore Power International.

The AER agrees with PB's recommendation, and considers it is not clear what, if any, efficient level of "accountability", and the other functions listed above, can be provided by a third layer of management in addition to that already provided by the SP AusNet Board and the 86 Australian based employees of the management company, or how this third layer of management could be considered prudent. On this basis the AER can not see how such a fee would be incurred in a contract negotiated at arm's length with an unrelated third party.

¹⁴⁸ *ibid.*, p.38.

6.6.4.5 AER's conclusion

The AER is not satisfied that the fee paid by the management company to Singapore Power International, which in effect is paid by SP AusNet, is efficient or a cost that a prudent operator in the circumstances of SP AusNet would require to achieve the opex objectives. The AER has therefore rejected SP AusNet's proposed allowance for management fees and in its place approves a substitute allowance of \$43.74m (\$2007-08), based on the management company's 2006-07 actual expenditure, excluding the fee paid to Singapore Power International. This leads to a total reduction of \$4.17m from SP AusNet's revised proposal of \$47.91m (\$2007-08).

The AER is satisfied that this substitute forecast reasonably reflects the opex criteria with regard to the opex factors, and in particular the information included and accompanying SP AusNet's revised proposal¹⁴⁹ and the analysis conducted by and for the AER, and outlined above¹⁵⁰. The duplication of functions evident between SP AusNet's internal management and board structure and the contract with its affiliated management services provider, and the lack of discernable benefits from this, is such that the inclusion of this fee in SP AusNet's opex forecast can not be accepted under a banner of prudence and efficiency.¹⁵¹

This along with the minor correction to the labour cost escalator and inflation escalation in the based year expenditure, outlined in section 6.6.1, lead to a total reduction of \$4.34m (\$2007-08) in SP AusNet's revised corporate opex forecast.

Table 6.12 AER's final decision – Corporate opex (2007-08 \$m)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
Management fees	6.80	6.99	7.18	7.38	7.59	7.80	43.74
Finance	2.78	2.83	2.88	2.93	2.99	3.04	17.46
HR	0.76	0.77	0.78	0.78	0.79	0.80	4.68
IT	4.35	4.40	4.46	4.52	4.58	4.64	26.95
Other corporate	3.32	3.36	3.40	3.44	3.48	3.53	20.53
Total	18.00	18.35	18.70	19.06	19.43	19.81	113.37

Source: AER analysis

¹⁴⁹ NER, cl. 6A.6.6(e)(1)

¹⁵⁰ NER, cl. 6A.6.6(e)(3)

¹⁵¹ NER, cl. 6A.6.6(e)(9)

Table 6.13 AER's final decision – Corporate opex (2007-08 \$m)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's revised proposal	18.67	19.04	19.41	19.80	20.19	20.59	117.71
AER's adjustment	-0.67	-0.69	-0.71	-0.73	-0.76	-0.78	-4.34
AER's final decision	18.00	18.35	18.70	19.06	19.43	19.81	113.37

Source: SP AusNet, AER analysis

6.6.5 Rolled-in assets opex

Some assets owned by SP AusNet are currently unregulated and do not provide prescribed transmission services. SP AusNet has elected to roll most of these assets into its regulated asset base on 1 April 2008, and seeks an allowance to cover the operating expenses associated with these assets in the forthcoming regulatory period.

This assets include non-contestable shared network assets commissioned by VENCORP and connection assets commissioned by other parties during the current regulatory control period. Due to the unique regulatory regime in Victoria, generally these assets are not unregulated by the AER for the duration of the regulatory period in which that are constructed, and become regulated by the AER at the end of that period. Under the AER's draft decision, and this final decision, \$115.85m of assets will be rolled into SP AusNet's RAB.

6.6.5.1 AER's draft decision

The AER's draft decision did not accept SP AusNet's total rolled-in assets opex forecast of \$11.40m (2007-08). In deriving the appropriate substitute forecast, the AER first corrected an error in SP AusNet's calculation of both the value of assets to be rolled into its RAB (from \$118.0m to \$115.85m) and the escalator it proposed to apply to its routine maintenance, asset works and corporate opex costs (from 1.027 to 1.031), and from that point:

- Rejected the application of an escalator to forecast asset works project costs, as these projects had been costed on a bottom-up basis
- Rejected the application of an escalator to the taxes and insurance categories of routine maintenance, as these costs were estimated separately, and effectively already incorporated the impact of rolling in additional assets
- Approved the application of the 1.031 escalator to corporate costs, as these are allocated on a RAB share basis
- For the remaining elements of routine maintenance, rejected SP AusNet's proposed escalator of 1.031, and approved a lower escalator of 1.021 (a reduction of 30%, based on PB's experience in other jurisdictions) to account for the expected reduction in maintenance effort associated with the newer rolled-in assets.

In total, these adjustments led to a substitute forecast of \$6.48m, a reduction of \$4.92m (2007-08) from SP AusNet's original forecast of \$11.40m (2007-08).

Table 6.14 AER's draft decision – Rolled-in assets opex (2007-08 \$m)

	SP AusNet's original proposal	AER's adjustment	AER's draft decision
Rolled-in assets opex	11.40	-4.92	6.48

Source: AER¹⁵²

6.6.5.2 SP AusNet's revised proposal

SP AusNet's revised proposal implements the escalators from the AER's draft decision on rolled-in assets opex, as outlined above. SP AusNet notes that the forecast in its revised proposal differs from that in the draft decision as SP AusNet has not accepted the AER's draft decision on routine maintenance and corporate opex, which inform its forecast of rolled-in assets opex.¹⁵³

6.6.5.3 Issues and AER considerations

The application of rolled-in assets opex escalators to the routine maintenance and corporate opex forecasts will produce a different allowance depending on the routine maintenance and corporate opex forecasts being escalated.

The rolled-in assets opex allowance in this final decision differs from that in SP AusNet's revised proposal and the AER's draft decision due solely to the independency between the rolled-in assets allowance and the routine maintenance and corporate opex forecasts, which differ between these documents.

6.6.5.4 AER's conclusion

SP AusNet's revised proposal implements the AER's draft decision. No new information was contained in or accompanied the revised proposal that has given the AER cause to depart from its draft decision on this matter.

The rolled-in assets opex allowance approved in this final decision differs from that in SP AusNet's revised proposal only to the extent necessary to incorporate the interdependency between the rolled-in assets opex escalators and the AER's final decision on routine maintenance and corporate opex, which differ from SP AusNet's revised proposal.

Table 6.15 AER's final decision – Rolled-in assets opex (2007-08 \$m)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's revised proposal	1.23	1.26	1.29	1.32	1.34	1.37	7.81
AER's adjustment	-0.12	-0.13	-0.14	-0.14	-0.15	-0.15	-0.83
AER's final decision	1.11	1.13	1.15	1.17	1.19	1.21	6.99

Source: SP AusNet (revised cost templates), AER analysis

¹⁵² AER, op. cit., p. 169.

¹⁵³ SP AusNet, *Electricity Transmission Revised Proposal 2008/09 – 2013/14*, 12 October 2007, p. 165.

6.6.6 Inventory

In its draft decision, the AER determined that a minor amount of SP AusNet's non-network capex relating to inventory spares should be reclassified as opex. This led to an increase in SP AusNet's opex allowance of \$0.04m (\$2007-08) per annum, and a \$0.24m (\$2007-08) increase over the regulatory period.

SP AusNet's revised proposal implements the draft decision, and presents no new information that has given the AER cause to depart from its draft decision on this matter.

Table 6.16 AER's final decision – Inventory (2007-08 \$m)

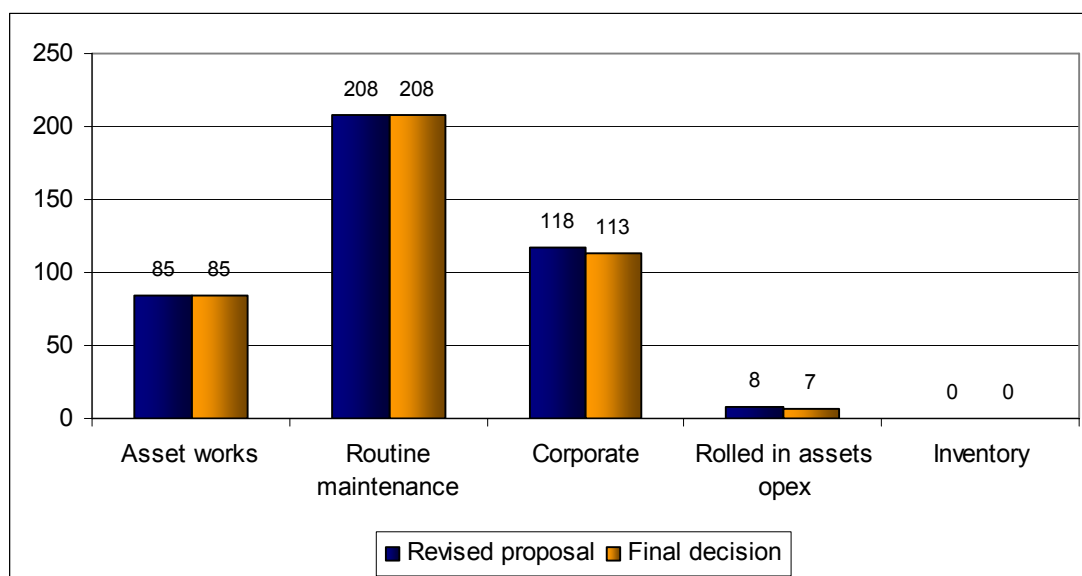
	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's revised proposal	0.04	0.04	0.04	0.04	0.04	0.04	0.24
AER's adjustment	-	-	-	-	-	-	-
AER's final decision	0.04	0.04	0.04	0.04	0.04	0.04	0.24

Source: SP AusNet (revised cost templates), AER analysis

6.6.7 AER's conclusion – Controllable opex

For the reasons outlined above, the AER is not satisfied that SP AusNet's revised proposed forecast of controllable opex reasonably reflects the opex criteria, with regard to the opex factors. As required by cl. 6A.14.1(3)(ii) of the NER, the AER has therefore made adjustments to SP AusNet's proposed forecasts to determine a revised estimate which the AER is satisfied meets the requirements of the NER. SP AusNet's revised proposal and the AER's final decision on each component of controllable opex is summarised in the figure below.

Figure 6.3 AER’s final decision – Controllable opex (2007-08 \$m)¹⁵⁴



Source: SP AusNet (revised cost templates), AER analysis

6.7 Issues and AER considerations – Other opex

This section analyses SP AusNet’s proposed allowances for those components of opex that SP AusNet classifies under the heading of ‘other’ opex. These components are self-insurance, equity raising costs, debt raising costs, AIS rebates and easement land tax.

6.7.1 Self-insurance

For risks associated with the provision of prescribed transmission services that are not compensated for through the WACC or elsewhere in its revenue proposal, a TNSP may propose to “self-insure”, and seek a self-insurance allowance for this purpose.

6.7.1.1 AER’s draft decision

SP AusNet commissioned SAHA to perform an assessment of the appropriate self-insurance allowance for the forthcoming regulatory control period. Based on the SAHA report, SP AusNet’s original proposal identified ten self-insurance risks and attached annual allowances to each, calculated on a “probability times consequence” basis, and totalling \$15.24m over the forthcoming regulatory control period.

In its draft decision, the AER did not consider that the self-insurance premiums proposed for the following risks were prudent or efficient:

- Risk of property damage to towers and lines
- Risk of power and current transformer failure
- Risk of circuit breaker failure

¹⁵⁴ Inventory rounded to nearest million dollars.

To derive its substitute forecast of \$8.37m (\$2007-08), the AER replaced SAHA's assumed asset failure rates for these risks, which were based on international data or common industry assumptions, with failure rates based on SP AusNet's own experience.

Table 6.17 AER's draft decision – Self-insurance (2007-08 \$m)

	SP AusNet's original proposal	AER's adjustment	AER's draft decision
Self-insurance	15.24	-6.86	8.37

Source: AER¹⁵⁵

6.7.1.2 SP AusNet's revised proposal

SP AusNet recommissioned SAHA to review the AER's assessment of the premiums rejected by the AER. Based on SAHA's recommendations, SP AusNet proposed a revised annual self-insurance allowance of \$2.52m, amounting to a total self-insurance allowance of \$15.13m over the forthcoming regulatory control period.

Table 6.18 SP AusNet's revised proposal – Self-insurance (2007-08 \$m)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's revised proposal	2.52	2.52	2.52	2.52	2.52	2.52	15.13

Source: SP AusNet¹⁵⁶

6.7.1.3 AER's considerations

SAHA's revised report contains new and corrected information provided by SP AusNet, including outputs from the asset failure risk models utilised by SP AusNet as an input into its capex planning process. Though the AER notes that SAHA's use of the risk models appears much more simplified than SP AusNet's. For example, SAHA assumes that the oldest assets are always replaced first, instead of those at highest risk of failing as informed by condition monitoring. In addition, SAHA appears to rely on generalised asset failure curves for each asset type.

Risk of power and current transformer failure

Power transformers

In its draft decision the AER rejected SP AusNet's use of an assumed power transformer failure rate of 1% based on experience in the US, as SP AusNet had an historical failure rate of only 0.21% over a population of 238 transformers. Relying on PB's conservative assumption that SP AusNet's historical failure rate was to double due to the aging transformer population, the AER rejected SP AusNet's proposal and approved a substitute allowance of \$484 806 calculated on an assumed failure rate of 0.42%.

¹⁵⁵ AER, op. cit., p. 175.

¹⁵⁶ SP AusNet, op. cit., p.166.

SP AusNet has now provided updated data giving an historical failure rate of 0.33%pa, which when doubled gives a rate of 0.66%pa. The risk models predict slightly different failure rates, as outlined in the table below.

Table 6.19 SAHA’s revised report – Power transformer failure risk premiums (p.a.)

Scenario	Replacements	Failure rate	No. of incidents	Consequence per incident	Risk premium
AER’s draft decision	51	0.599%	1.42	\$485 000	\$691 087
SP AusNet’s original proposal	66	0.570%	1.36	\$485 000	\$657 689

Source: SAHA¹⁵⁷

Based on the risk model outputs, SAHA considers an annual self-insurance allowance of at least \$657 689 is required. PB considers SAHA’s revised approach is reasonable.

The AER considers SAHA’s latest advice is preferable to that in its original report, as it is based on SP AusNet’s own data and risk models. Table 6.19 above includes the calculated risk premiums under the power transformer replacements in SP AusNet’s original proposal and the AER’s draft decision. The AER’s final decision on forecast capex for power transformer replacements is approximately midway between its draft decision and SP AusNet’s original proposal. The AER considers an average of these figures is appropriate, which produces an annual power transformer allowance of \$674 388, above the minimum recommended by SAHA.

Current transformers (CTs)

In its original report, SAHA calculated an annual premium of \$66 667 for CTs, but did not recommend its inclusion, relying instead on its conservative assumptions for power transformers to cover this risk. Having approved a lower premium for power transformers in its draft decision, the AER considered an allowance for CTs should be included. Based on the assumed CT asset failure rate in the original SAHA report, and assumed removal and clean up costs of \$185 000 (though not rounded up to \$200 000 as done by SAHA), the AER determined the risk premiums for 220kV and 500kV current transformers to be \$30 840pa each, or \$61 679pa total.

The information on which SAHA’s original report was based has again been identified as incorrect. SAHA’s revised report states an historical failure rate of 0.054%.¹⁵⁸ Again, the risk models predict slightly different failure rates, outlined in the table below.

¹⁵⁷ SAHA, op. cit., October 2007, p.15.

¹⁵⁸ *ibid.*, p.17.

Table 6.20 SAHA’s revised report – Current transformer failure risk premiums (per annum)

Scenario	Replacements	Failure rate	No. of incidents	Consequence per incident	Risk premium
AER’s draft decision	408	0.143%	2.65	\$200 000	\$530 272
SP AusNet’s original proposal	603	0.135%	2.50	\$200 000	\$499 862

Source: SAHA¹⁵⁹

Based on the risk model outputs, SAHA submits that an annual self insurance allowance of at least \$499 862 is required.

The AER also notes that SAHA’s analysis, based on SP AusNet’s CT age profile as at 2005, appears to ignore the 203 high risk units that SP AusNet will have replaced since that date in the current regulatory control period, and therefore significantly overstates the number of older CTs that will be in service at 1 April 2008.¹⁶⁰

PB notes that SAHA’s new estimated failure rates (0.135%-0.143%) are more than double the historical rate (0.054%).

In PB’s detailed review of SP AusNet’s CT replacement capex, PB considered:

...the overall CT [mean time between failure] is expected to improve **beyond** the historically observed level of 1, given SPA’s historic and the allowed capex, which strongly prioritises and targets the worst condition units.¹⁶¹
[emphasis added]

Drawing on PB’s detailed assessment of SP AusNet’s revised capex proposal, PB recommends the historical average incident rate of one per annum be used to determine SP AusNet’s current transformer failure risk self-insurance allowance.

The AER accepts PB’s recommendation that an assumption of one incident per annum is a reasonable and more realistic estimate in the context of SP AusNet’s ongoing CT replacement program, and does not accept the significantly higher failure and incident rates proposed by SAHA and SP AusNet.

New information submitted by SP AusNet to PB and the AER in support of its revised capex proposal, identifies the average clean up opex associated with a CT failure as \$44 000, based on CT failures that SP AusNet has experienced during the current period.¹⁶² PB recommends this amount be used as the consequential costs (clean up costs) of a CT failure, in determining SP AusNet’s self-insurance allowance.¹⁶³

On this basis, the AER does not accept SAHA’s calculation of the CT risk premium, but approves a substitute premium of \$44 000 per annum, based on a more realistic incident rate of 1pa and clean up costs per incident of \$44 000.

¹⁵⁹ *ibid.*, p.15.

¹⁶⁰ SP AusNet, *CT replacements – 2008-09 – 2013-14 capital works revised proposal*, 10 October 2007, p.15.

¹⁶¹ PB, *op. cit.*, 8 January 2008, p.34.

¹⁶² SP AusNet, *NPV inputs – CT replacement program*, Excel spreadsheet

¹⁶³ PB, *op. cit.*, pp.42-43.

Combined power and current transformer failure risk premiums

The AER is not satisfied that SP AusNet's revised self-insurance allowance for power and current transformers reasonably reflects the efficient and prudent costs of self-insurance, and has rejected this element of SP AusNet's revised self-insurance forecast. The AER considers that annual power and current transformer failure risk premiums of \$674 388 and \$44 000 respectively, is reasonable and prudent and has approved a substitute annual allowance of \$718 388.

Risk of circuit breaker failures

The AER's draft decision rejected SP AusNet's proposal, which assumed a failure rate of 0.72% based on international data from CIGRE when, according to data in SAHA's original report, SP AusNet's historical failure rate was 0.15%.

SP AusNet has now provided SAHA with details of all circuit breaker failures over the ten year period 1997-2007¹⁶⁴, producing a higher historical failure rate of 0.37%. SAHA observes that doubling the long term failure rate to account for an ageing circuit breaker population, as in the AER's draft decision, leads to a risk premium of \$870 980. As this is not dissimilar to that based on the 0.72% international failure rate (\$847 440), SAHA recommends reinstatement of its originally recommended premium of \$847 440.

PB notes that doubling the historical failure rate to account for the ageing of assets, using the more complete list of failures now provided by SP AusNet, results in a similar failure rate to CIGRE (0.74% to 0.72%), and considers that SAHA's revised assessment is reasonable.

The AER considers this a very conservative but not unreasonable proposal, and accepts SP AusNet's proposed annual self-insurance risk premium for CB failure of \$847 440.

Key person risk

In its draft decision, the AER accepted SP AusNet's proposed risk premium of \$63 425 for key person risk without any amendment. However, SAHA's original report was based on the average salary of SP AusNet's general management of \$212 384, when in fact SP AusNet's general management earn an average salary of \$387 767.

While SP AusNet has not requested it, the AER considers it appropriate that the minor error be corrected and SP AusNet's proposed risk premium for key person risk be adjusted upwards to \$70 207pa, as calculated by SAHA.

6.7.1.4 AER's conclusion

The AER is concerned that in all instances where the AER relied on information in the original SAHA report for its own alternative assessment, SP AusNet and SAHA have now advised that the data in the original SAHA report was inaccurate or incomplete, and that the AER's conclusions are therefore also in error. The AER is

¹⁶⁴ In its original report SAHA stated that "SP AusNet had not been able to provide a detailed history of circuit breaker failure incidents".

additionally concerned that SP AusNet does not appear to have provided SAHA with all the relevant information it could have for SAHA's original report, and that the underlying risk data supporting SP AusNet's original self-insurance proposal was inconsistent with that supporting its original capex proposal. This apparent lack of due diligence and provision of relevant information to its consultant reflects poorly on SP AusNet's original proposal, and on SP AusNet's regard for the integrity of the transmission determination process.

The AER does not consider SP AusNet's revised self-insurance proposal of \$2.52m (\$2007-08) per annum, or \$15.13m (\$2007-08) in total, reasonably reflects the prudent and efficient costs of self-insurance, and must therefore reject it. In its place, the AER has approved a substitute forecast of \$2.09m per annum, or \$12.55m in total, which it is satisfied reasonably reflects the opex criteria, taking into account the information included in and accompanying SP AusNet's revised proposal, and analysis undertaken by and for the AER.

Table 6.21 AER's final decision – Self-insurance p.a. (2007-08 \$m)

	SP AusNet's revised proposal	AER's adjustment	AER's final decision
Risk of property damage to towers and lines ¹⁶⁵	\$287 452	-	\$287 452
Bushfire liability risk	\$2 023	-	\$2 023
Risk of theft at remote stations	\$125 000	-	\$125 000
Risk of power and circuit transformer failure	\$1 154 300	-\$435 912	\$718 388
Risk of circuit breaker failure	\$847 440	-	\$847 440
Risk of GIS failure	\$27 155	-	\$27 155
Risk of bomb threats, extortion and acts of terrorism	\$11 600	-	\$11 600
Key person risk	\$63 425	+\$6 782	\$70 207
Insurer's credit risk	\$1 625	-	\$1 625
Risk of non-terrorist impact of planes and helicopters	\$1 000	-	\$1 000
Annual allowance	\$2 521 047	-\$429 130	\$2 091 917

Source: AER analysis

¹⁶⁵ The AER's draft decision inadvertently excluded a \$23 143pa allowance for conductor damage from the total allowance in its draft decision. The AER accepts SP AusNet's revised annual self-insurance proposal of \$287 452 (\$2007-08) for risks of property damage to towers and lines which corrects this error.

The AER's final decision leads to a reduction of \$0.43m (\$2007-08) in SP AusNet's annual self-insurance allowance, and a total reduction \$2.57m (\$2007-08) over the forthcoming regulatory control period.

Table 6.22 AER's final decision – Self-insurance (2007-08 \$m)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's revised proposal	2.52	2.52	2.52	2.52	2.52	2.52	15.13
AER's adjustment	-0.43	-0.43	-0.43	-0.43	-0.43	-0.43	-2.57
AER's final decision	2.09	2.09	2.09	2.09	2.09	2.09	12.55

Source: SP AusNet, AER analysis

6.7.2 Equity raising costs

In raising equity, a business may incur costs such as legal fees, brokerage fees, costs associated with issuing a prospectus if it is an initial public offering, and other expenses. Raising equity often incurs an upfront cost with little or no ongoing costs over the life of the equity. Whilst the bulk of the equity a firm will raise is typically at its inception, firms may also choose external equity funding, instead of debt or internal funding, post inception, incurring additional once-off costs associated with that equity.

6.7.2.1 AER's draft decision

In its original proposal SP AusNet proposed an equity raising cost allowance in each year of its forthcoming regulatory control period, calculated as 21.5 basis points of the benchmark equity share (40%) of its opening RAB in each year. This amounted to a total allowance of \$11.81m (\$2007-08) – around \$2m annually.

SP AusNet's approach implicitly sought compensation for both equity raising costs associated with its initial capital base, and equity raising costs associated with its forward capex program. Consistent with the last Powerlink decision, the AER considered the prudence of these two types of equity raising costs should be considered individually on their own merits, and on a case-by-case basis for individual TNSPs.

The AER did not consider it was appropriate for SP AusNet to receive an allowance for equity raising costs associated with the initial capital base. This position was based on an ACG report commissioned by the ACCC which states that:

If [a RAB] has already been established for the regulated entity there is no case for now including an allowance for IPO costs. It must be assumed that such costs have already been included in the [RAB], either explicitly or implicitly.¹⁶⁶

SP AusNet claimed that its RAB had not been established *prior to* its 2002 revenue cap decision, and that it should therefore be provided an allowance. The AER

¹⁶⁶ ACG, *Debt and equity raising transaction costs – final report*, December 2004, p.54.

considered the relevant issue to be whether a RAB had been established in a previous regulatory decision. As the ACCC had established a RAB for SP AusNet in 2002, and that RAB is now being rolled forward, the AER considered that it was not appropriate to include an allowance for equity raising costs in the forthcoming regulatory control period.

The AER accepted that equity raising costs associated with the forward capex program were a legitimate cost if it could be demonstrated that, under benchmark capital financing arrangements, SP AusNet would be unable to fund its capex program over the forthcoming regulatory control period without the need to raise additional equity. However, the AER considered that under benchmark financing arrangements, SP AusNet would be able to fund the capex program provided for in the draft decision through debt and internal funding without requiring additional external equity, and did not provide an allowance.

Combining this analysis, the AER considered that SP AusNet did not require any allowance for equity raising costs in the forthcoming regulatory control period, and rejected SP AusNet’s proposal.

Table 6.23 AER’s draft decision – Equity raising costs (2007-08 \$m)

	SP AusNet’s original proposal	AER’s adjustment	AER’s draft decision
Equity raising costs	11.81	-11.81	0.00

Source: AER¹⁶⁷

6.7.2.2 SP AusNet’s revised proposal

Following the approach in the draft decision, SP AusNet’s revised proposal distinguishes between equity raising costs on the initial capital base and those associated with the forward capex program.

Initial capital base

SP AusNet considers that “the drafting of the ACG report is unfortunate” and “may not have been sufficiently clear”, and submits that the AER has misinterpreted the report.¹⁶⁸ SP AusNet commissioned ACG to clarify its original report, and to advise on the application of the report to SP AusNet’s circumstances.

ACG reiterates and expands upon its original advice, recommending that equity raising costs be included in the asset base where a regulated entity’s asset base is to be established for the first time. Where the RAB has already been established and ‘locked-in’, with a commitment made to update that value thereafter using the ‘roll-forward’ approach, then:

- if the asset value did not include an allowance for equity raising costs, it should not be reopened to include such an allowance given that a central feature of the roll-forward approach is to not reopen the locked-in value; but

¹⁶⁷ AER, op. cit., p. 178.

¹⁶⁸ SP AusNet, *Electricity Transmission Revised Proposal 2008/09 – 2013/14*, 12 October 2007, p. 167.

- if the initial asset value did include an allowance for equity raising costs, then clearly that allowance should remain...¹⁶⁹

In applying these principles to SP AusNet, ACG notes that it may be appropriate to infer that the ACCC locked-in SP AusNet's RAB in 2002 which did not include equity raising costs. However, ACG considers that the inclusion in the ACCC's 2002 decision of an opex allowance for equity raising costs was analogous to including equity raising costs in the RAB. ACG concludes that an application of the principles set out in its 2004 report would imply that such an allowance should continue.¹⁷⁰

Following ACG's advice, SP AusNet submits that an allowance for equity raising costs on the initial capital base should be provided in the forthcoming regulatory control period. SP AusNet's revised proposal calculates the proposed allowance on SP AusNet's RAB at the end of the current regulatory period, and depreciated over the forthcoming regulatory period.¹⁷¹

Forward capital program

SP AusNet accepts the draft decision that, under benchmark financing arrangements, it would be able to fund its forward capital program without additional equity funding. SP AusNet's revised proposal implements this aspect of the draft decision, and does not seek any equity raising cost allowance associated with its forward capital program.

In total, SP AusNet proposes an equity raising cost allowance of \$9.31m (\$2007-08) over its forthcoming regulatory control period, for equity raising costs associated with its initial capital base.

Table 6.24 SP AusNet's revised proposal – Equity raising costs (2007-08 \$m)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
Equity raising costs	1.72	1.65	1.58	1.51	1.45	1.39	9.31

Source: SP AusNet¹⁷²

6.7.2.3 Submissions

Energy Users Coalition of Victoria

The EUCV considers there is little reason to include the establishment costs for equity in the RAB. As SP AusNet was a government owned corporation prior to privatisation, the EUCV considers these costs have already been borne by the state government and paid for by the public. It would therefore be inappropriate for users to be charged a second time for these costs.¹⁷³

¹⁶⁹ ACG, *SP AusNet draft decision: transaction cost of raising equity*, 12 October 2007, p.3, as found in 'Appendix O – ACG letter on equity raising costs', SP AusNet, *Electricity transmission revised proposal 2008-09 – 2013-14*, 12 October 2007.

¹⁷⁰ *ibid.*, p.5..

¹⁷¹ SP AusNet, *op. cit.*, pp.167-168.

¹⁷² *ibid.*, p.168.

¹⁷³ EUCV, *op. cit.*, p.9.

On the other hand, the EUCV accepts that equity raising costs should apply to new equity that is raised as part of the capex program, if indeed any equity needs to be raised.¹⁷⁴

The EUCV suggests that equity previously raised has been in part returned to SP AusNet in the form of depreciation allowances, and that for any future equity raising requirements a deduction proportionate to the equity share of SP AusNet's capital base should be applied to depreciation returned to SP AusNet. Given SP AusNet's acceptance of the AER's draft decision on equity raising costs for its forward capital program, this issue does not require further consideration in this final decision.

Transend

Transend notes that whilst equity raising costs for new capital expenditure may not apply for SP AusNet, these costs would be appropriate in circumstances where new capex cannot be financed from retained earnings.

Transend also notes that the ACCC's approach to equity raising costs had been inconsistent, in part because it was unsure of the appropriate regulatory treatment of this issue. Transend considers it is important that the AER develop a consistent approach – the additional advice from the ACG being a constructive step forward in the process.¹⁷⁵

6.7.2.4 Issues and AER considerations

Initial capital base

The AER agrees that, if an asset base is locked in, the integrity of that valuation should be preserved regardless of whether or not it includes equity raising costs. If at the time of locking in a RAB it was not considered appropriate to include equity raising costs, the RAB should not be subsequently altered, even if views on the appropriateness of equity raising costs change. Revaluing one section of the RAB to account for changed views, without reopening the entire asset base to account for changed views on the other valuation of other assets, would be inconsistent. To provide certainty to service providers and end users, it is clearly preferable to maintain the integrity of the initial valuation, rather than reopening the entire RAB. Chapter 6A permits adjustment of a TNSP's RAB only in limited circumstances, which do not include changing views on the regulatory treatment of equity raising costs.

ACG notes that whilst equity raising costs were not included in the 2002 RAB, a separate opex allowance for equity raising costs was granted in this decision. In effect, ACG argues that the inclusion of this opex allowance was analogous to including equity raising costs in the RAB, and on this basis that it would be appropriate to continue that allowance in this decision. The AER considers this a valid argument, and an appropriate application of the principles in ACG's original and updated advice to SP AusNet's specific circumstances.

¹⁷⁴ *id.*, *Victorian electricity transmission revenue reset – AER draft determination – a response by the Energy Users Coalition of Victoria*, November 2007, p.42.

¹⁷⁵ Transend, *op. cit.*, p.5.

The AER has reviewed SP AusNet's calculation of the allowance in its proposal. SP AusNet has taken its closing RAB from the current regulatory control period and depreciated this over each year of the forthcoming period. It has then multiplied this annually declining value by 25.6 basis points, leading to a decreasing equity raising cost allowance. This approach leads to SP AusNet being compensated for both equity raising cost associated with its initial capital base (as at 2002), and equity raising costs associated with its capex over the current period. Whilst it is unlikely SP AusNet's relatively minor capex program from the current period required external equity funding, and therefore equity raising costs, to disallow these costs now in response to a changing view on the appropriate regulatory treatment of equity raising costs would in effect be retrospective, and not in keeping with the principals of the ACG report. However, the AER found that SP AusNet's proposed RAB and depreciation schedule were not consistent, as the RAB included capex from the current period, whilst the depreciation schedule did not. The AER corrected for this by taking the depreciation schedule from the PTRM that did include capex from the current period. In addition, the AER incorporated a minor adjustment in its final decision on SP AusNet's RAB, analysed in chapter three.

The 21.5 basis point benchmark proposed by SP AusNet is equal to the benchmark determined by the ACCC for SP AusNet's last revenue determination. This benchmark was based on an average equity raising fee of 3.55% and a real vanilla WACC of 5.95%.¹⁷⁶ In the 2004 report, and more recently, the ACG recommended a benchmark fee of 3.00%. However the decreasing effect of this is negated by SP AusNet's higher real vanilla WACC. Accordingly, the AER considers SP AusNet's proposed continuation of the 21.5 basis point benchmark, used in its current revenue determination, is reasonable at this time.

SP AusNet has proposed compensation for these costs through an opex allowance. The AER finds this approach reasonable. Alternatively, these costs could be capitalised and included in the RAB, however the AER notes that due to the limitations on reopening the RAB, this approach may not be allowed under the current version of the NER.

Forward capex program

SP AusNet has accepted that under benchmark financing arrangements, it will be able to fund its proposed forecast capex program without additional equity funding, and consequently an equity raising cost allowance is not required. The AER is satisfied that its final decision on SP AusNet's forecast capex for the forthcoming regulatory control period does not necessitate a change in this position.

6.7.2.5 AER's conclusion

Having adjusted the RAB and depreciated schedule discussed above, the AER is satisfied 21.5 basis point benchmark equity raising cost allowance, associated with the initial capital base and capex from current regulatory control period, in SP AusNet's revised proposal reasonably reflects the prudent and efficient costs of achieving the opex objectives. This decision has been made having regard to, among other factors,

¹⁷⁶ ACCC, Decision – Victorian transmission network revenue caps 2003-2008, 11 December 2002, p.86.

the ACG advice accompanying SP AusNet’s revised proposal, and the equity raising costs that would likely be incurred by an efficient TNSP under benchmark financing arrangements.

Table 6.25 AER’s final decision – Equity raising costs (2007-08 \$m)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet’s revised proposal	1.72	1.65	1.58	1.51	1.45	1.39	9.31
AER’s adjustment	0.00	-0.01	-0.01	-0.01	-0.02	-0.02	-0.07
AER’s final decision	1.71	1.64	1.57	1.50	1.43	1.37	9.24

Source: SP AusNet (revised cost templates), AER analysis

6.7.3 Debt raising costs

Unlike equity raising costs, which are generally only incurred when capital is raised, debt raising costs are usually incurred not only when the debt is initially raised, but each time the debt is rolled over. Debt raising costs may include underwriting fees, legal fees, company credit rating fees and other costs.

The AER has routinely accepted that debt raising costs are a legitimate expense that a TNSP should be provided an allowance for. However the appropriate approach to calculating a benchmark allowance is the subject of some debate.

6.7.3.1 AER’s draft decision

In its draft decision, the AER did not accept SP AusNet’s proposal to include in its opex forecast a benchmark allowance for debt raising costs equal to 0.125% (12.5 basis points) of the benchmark debt share (60%) of the opening RAB in each year.

In its draft decision the AER applied the 2004 ACG methodology, which it had recently updated for the Powerlink decision. This methodology first determines how many multiples of the benchmark median bond issue size (\$200m) comprise the benchmark debt share (60%) of the RAB in each year. The number of multiples is then matched with the corresponding debt raising cost benchmark in the table below. The concept behind the decreasing benchmark is that the relative cost of raising debt is expected to decrease with higher levels of debt raised, due to the spread of company credit rating costs across the multiples of bonds being issued. The rest of the components of the benchmark are based on the actual costs of raising debt, such as an underwriting fee, as first sampled by the ACG in 2004, and updated by the AER in 2007. These benchmarks are listed in the table below.

Table 6.26 Updated ACG benchmark debt raising cost methodology

Bonds issued	1	2	3	4	5	6	7	8	9	10
Amount raised (\$m)	200	400	600	800	1 000	1 200	1 400	1 600	1 800	2 000
Debt raising cost benchmark (bppa)	10.4	9.1	8.7	8.5	8.4	8.3	8.2	8.2	8.1	8.1

Source: AER¹⁷⁷

At the time of the draft decision, SP AusNet’s debt share of RAB was between \$1 200m-\$1 400m in each year of the forthcoming regulatory control period. This lead to a benchmark of 8.3 basis points, rounded conservatively to the nearest lower multiple.

The AER considered 8.3 basis points to be the prudent level of debt raising costs for a TNSP in SP AusNet’s circumstances, and on this basis derived a substitute forecast of \$6.8m (\$2007-08) – a \$3.72m (\$2007-08) reduction from SP AusNet’s original proposal, which was based on 12.5 basis points.

Table 6.27 AER’s draft decision – Debt raising costs (2007-08 \$m)

	SP AusNet’s original proposal	AER’s adjustment	AER’s draft decision
Debt raising costs	10.30	-3.72	6.58

Source: AER¹⁷⁸

6.7.3.2 SP AusNet’s revised proposal

SP AusNet accepted the updated ACG methodology to calculating debt raising costs. For the purposes of its revised proposal, SP AusNet implemented the 8.3 basis point benchmark approved in the draft decision, but noted that this and the amount of the allowance may change depending on the opening RAB and capex approved in the final decision.¹⁷⁹

6.7.3.3 Submissions

Energy Users Coalition of Victoria

The EUCV accepts that debt raising costs are a legitimate expense incurred by a business. However, the EUCV considers debt is typically rolled over every 6-8 year period. Accordingly the EUCV recommends the AER:

- apply the 8.3 basis points on the average amount of debt in the RAB once in the period, or
- apply the 8.3 basis points on one sixth of the debt in the RAB each year of the six year regulatory control period.

¹⁷⁷ AER, op. cit., p. 183.

¹⁷⁸ *ibid.*, p. 183.

¹⁷⁹ SP AusNet, op. cit., p.168.

The EUCV does not consider that applying the 8.3 basis points to all the debt in the RAB for each year of the regulatory control period recognises that debt is secured for much longer periods than annually.¹⁸⁰

6.7.3.4 Issues and AER's considerations

The application of the updated ACG methodology will produce a different benchmark and different allowance depending on the debt share of the opening RAB, which is the single input into this methodology.

As foreshadowed by SP AusNet, the allowance in this final decision differs from that in SP AusNet's revised proposal and the AER's draft decision due solely to the differing RAB debt share, the principal cause of this is the differing capex forecasts between these documents.

The AER notes the EUCV's submission, however the benchmarks produced by the ACG methodology have been amortised in perpetuity, and are therefore applicable to be applied to the entire debt portion of the RAB on an annual basis.

6.7.3.5 AER's conclusion

SP AusNet's revised proposal implements the draft decision, and presents no new information that has given the AER cause to depart from its draft decision on debt raising costs.

The amount of the debt raising cost allowance approved in this final decision differs from that in SP AusNet's revised proposal only to the extent necessary to incorporate the interdependency between the debt raising cost methodology and the debt share of the opening RAB in each year, which varies in this final decision and from that assumed in SP AusNet's revised proposal.

Table 6.28 AER's final decision – Debt raising costs (2007-08 \$m)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's revised proposal	1.09	1.11	1.12	1.13	1.14	1.16	6.75
AER's adjustment	0.00	-0.01	-0.02	-0.02	-0.02	-0.03	-0.10
AER's final decision	1.09	1.10	1.10	1.11	1.12	1.12	6.64

Source: SP AusNet, AER analysis

6.7.4 Rebates (Availability Incentive Scheme)

The network services agreement between SP AusNet and VENCORP includes an availability incentive scheme (AIS), whereby the network charges payable by VENCORP to SP AusNet are reduced (i.e. rebated) based on the level of network outages. An outage rebate value is attached to individual items of plant, with higher values attached to more critical plant, and generally higher values attached to peak

¹⁸⁰ EUCV, op. cit., p.43.

periods, than intermediate and off-peak periods. The scheme creates an incentive for SP AusNet to minimise outages in general, and to move necessary outages to off-peak times, in order to incur a lower rebate penalty. The AIS itself is not an element of SP AusNet's transmission determination (or VENCORP's). The AIS is not created under the NER, or managed by the AER. It features in SP AusNet's revenue determination as an operating expense and in VENCORP's under the banner of prescribed service charges payable to SP AusNet, and recovered through TUOS charges.

6.7.4.1 AER's draft decision

In its original proposal, SP AusNet proposed an annual rebate allowance of \$6.69m (\$2007-08), totalling to \$40.13m (\$2007-08) over the forthcoming regulatory control period, to fund the expected value of the rebates payable to VENCORP under the AIS. SP AusNet's proposal, which essentially continued the \$6.00m annual allowance granted in the ACCC's 2002 decision when the scheme was first considered in this context, was equal to half the annual cap on the rebates under the AIS (\$12.00m, \$2003-04), which is subject to an annual inflation adjustment (\$6.00m, \$2003-04, is equivalent to \$6.69m, \$2007-08).

The ACCC's acceptance of the \$6.00m pa allowance was on the basis that this was the expected annual value of the rebates for the current regulatory control period. This was supported by a report from Trowbridge. SP AusNet had engaged Trowbridge to determine, based on the details of the proposed scheme (pre-2002), what scaling factor would need to be applied to the proposed rebate values such that the expected annual value of the scheme would be \$6m during the current period. Trowbridge recommended a scaling factor based largely on SP AusNet's historical levels of outages and its forecast capex program for the current period. Trowbridge's scaling factor was only applicable to the current period, and Trowbridge stated that it expected the scheme would be subject to renegotiation for the forthcoming regulatory control period. No such renegotiation, or rescaling, occurred.

The AER investigated the historical rebates paid by SP AusNet for the 3 ¼ years that data was available. The AER found that the average rebate paid over that period, on an annualised basis, was \$1.42m (\$2007-08), with the maximum rebate paid in any full year being \$1.66m (\$2007-08), in 2005-06.

On the basis of SP AusNet's historical performance, the AER considered that it was highly unlikely that the expected annual value of the rebates over the forthcoming regulatory control period would be \$6.69m (\$2007-08) per annum. The AER was not satisfied that the \$40.13m proposed by SP AusNet to cover the costs of expected AIS rebates reasonably reflected the prudent and efficient costs required by SP AusNet to achieve the opex objectives, or a realistic expectation of those costs, and did not accept SP AusNet's forecast.

The AER considered the average historical annual value of the rebates over the current regulatory control period (for years where actual data was available), being \$1.42m (\$2007-08), was a reasonable estimate of the expected value of the rebates for the forthcoming regulatory control period. The AER adjusted SP AusNet's proposed rebate allowance to reflect the costs actually incurred over the current period, to

derive a substitute allowance for the forthcoming period of \$8.52m (\$2007-08), a reduction of \$31.60m (\$2007-08).

Table 6.29 AER’s draft decision – Rebates (2007-08 \$m)

	SP AusNet’s original proposal	AER’s adjustment	AER’s draft decision
Rebates	40.13	-31.60	8.52

Source: AER¹⁸¹

6.7.4.2 SP AusNet’s revised proposal

In its revised proposal, SP AusNet no longer forecasts the rebates to equal half the annual cap of the scheme over the forthcoming regulatory control period. However, SP AusNet believes the rebate allowance in the AER’s draft decision significantly understates SP AusNet’s expected cost of the rebate payments over the forthcoming period.

SP AusNet’s revised proposal forecasts the major categories of the rebates individually:

- Opex outages
- Capital works outages
- Forced and fault outages
- Major plant risk outages

For three of these categories, SP AusNet’s revised proposal is based on the historical average of the rebates over the current period, which is either left at the historical average or scaled up to reflect SP AusNet’s expected increase in this type of outage over the forthcoming regulatory control period. Whilst SP AusNet claims no outages for the fourth category have occurred during the current period, SP AusNet believes it is appropriate to set the allowance equal to the allowance from the current period.

SP AusNet’s opex outage rebates from the current period averaged \$605 000 pa, compared to the expected opex rebate of \$5.09m pa. SP AusNet attributes this dramatic decrease to the substantial improvements it made to outage management, virtually eliminating opex outages from peak periods. Nonetheless, SP AusNet is forecasting an increase in its asset works opex program over the forthcoming period, and has adjusted the historical average opex rebate upwards by 12% to reflect its estimate of the increase in rebateable opex outage hours expected in the forthcoming period. This results in forecast allowance of \$680 115 pa for opex outages.

SP AusNet considers that forced and fault outages “tend to be largely random in nature” and considers the historical average rebate of \$314 993 pa is appropriate to set the allowance for the forthcoming period. This historical average is less than what was the expected forced and fault outage rebate for the current period of \$482 727.¹⁸²

¹⁸¹ AER, op. cit., p. 186.

¹⁸² SP AusNet, op. cit., p.72.

For capital works outages, SP AusNet forecasts an annual allowance of \$1 902 055, set at the current average (\$844 458) plus 125%. SP AusNet states that there is a clear relationship between the level of capex and the level of capex rebates, noting that during the current period the level of capex was higher than expected, as was the level of capex rebates.

SP AusNet believes that the historical average must be adjusted on a similar basis to the STPIS. SP AusNet estimates that the level of rebateable capex outage hours will increase by 125% during the forthcoming regulatory control period, as a result of its higher revised capex proposal. SP AusNet also considers the capex rebates will rise from the historical average as its forward capex program involves more works in critical stations, which incur higher outage rebates under the AIS.

Whilst SP AusNet claims that it has not incurred any major plant failure risk outages over the current period, and consequently paid no major plant failure risk rebates, SP AusNet does not believe that this is an appropriate basis on which to set its allowance. SP AusNet claims that although force majeure clauses are included in the network services agreement, these provisions do not cover many unplanned plant outages that would “normally” be attributed to force majeure.¹⁸³ SP AusNet claims that the original analysis behind the scheme considered data sets covering 15-20 years for major plant risk failure outages, and that this analysis is “still sound”. Accordingly SP AusNet proposes the \$617 273 pa forecast from the original analysis be retained for the current period.

The basis of SP AusNet’s annual proposed rebate allowance is summarised below.

Table 6.30 SP AusNet’s revised proposal – Rebates (2007-08)

Rebate outage category	Allowance (current period)	Historical average (current period)	SP AusNet’s proposed adjustment	SP AusNet’s revised proposal
Opex	\$5 087 810	\$605 462	Historical average + 12%	\$680 115
Fault and forced	\$482 727	\$314 993	Historical average	\$314 993
Capex	\$510 482	\$844 458	Historical average + 125%	\$1 902 055
Major plant failure risk	\$617 273	Zero	Continue current allowance	\$617 273
Total pa	\$6 698 291	\$1 764 913¹⁸⁴		\$3 514 435

Source: SP AusNet¹⁸⁵

¹⁸³ *ibid.*

¹⁸⁴ SP AusNet’s calculation of the historical average differs from that in the AER’s draft decision (\$1.76m to \$1.42m) as it includes the rebate from 2006-07, which was not available to the AER in time to be incorporated into the draft decision.

¹⁸⁵ *ibid.*

SP AusNet’s proposed rebate allowance of \$3.51m (\$2007-08) per annum leads to a total forecast of \$21.09m (\$2007-08) over the forthcoming regulatory control period.

Table 6.31 SP AusNet’s revised proposal – Rebates (2007-08 \$m)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
Rebates	3.51	3.51	3.51	3.51	3.51	3.51	21.09

Source: SP AusNet (revised cost templates)

6.7.4.3 Submissions

The EUCV considers that the existence of the AIS and the AER’s STPIS is an unnecessary duplication, and considers that AIS should be removed.

If the AER is unable to remove the AIS, the EUCV considers the AER should adjust the STPIS such that the combined revenue at risk for both schemes does not exceed 1% of SP AusNet’s MAR.¹⁸⁶

The EUCV supports the AER’s draft decision setting SP AusNet’s rebate allowance at approximately \$1.4m pa, the historical level of the rebates.¹⁸⁷

6.7.4.4 Issues and AER considerations

The AER engaged PB to review the level of rebates forecast by SP AusNet. PB’s recommendations on each of the major categories of outage rebates, and the AER’s consideration of SP AusNet’s proposal in light of those recommendations, follow.

In response to the EUCV’s submissions, the AER notes that the STPIS is mandated under the NER with the minimum revenue at risk of 1% of MAR, and the introduction or removal of the AIS is not within the discretion of the AER, but subject to a voluntary agreement between SP AusNet and VENCORP.

Capital works outages

PB and the AER agree with SP AusNet that the capex rebate forecast should be based on the forward capex program. This is consistent with the original basis of the AIS and acknowledges that capex can vary widely in scale and scope between regulatory periods, affecting the likely amount of capex rebates.

PB evaluated SP AusNet’s proposed annual capex rebate allowance of \$1.90m (\$2007-08) pa, by comparing historical average rebate per dollar of capex with the forecast average.

PB considers that some increase is likely to occur, given the typically higher rebates associated with circuit elements in urban areas, however PB found that the forecast average of 0.014 was significantly higher than the historical average of 0.010, indicating that SPA has allocated a significantly higher average level of rebate to each outage hour. After examining the average levels of rebates for various circuit elements, PB considers the level of

¹⁸⁶ In its submission, the EUCV mistakenly refer to the revenue at risk for SP AusNet’s current STPIS being set at 1% of RAB, instead of 1% of MAR.

¹⁸⁷ EUCV, op. cit., pp.43-44.

increase per dollar of capex unreasonable given that SPA is likely to expand its workforce (directly or through the use of contractors) rather than working the same workforce during peak and intermediate periods.¹⁸⁸

PB considered an upper limit could be established by taking one standard deviation above the historical average, which provided a high estimate of \$0.011 rebate per dollar of capex, and an annual forecast of \$1.26 (\$2007-08) capex rebates. The AER agrees with PB's recommendation. Updating these the capex figures assumed by PB with the final figures in this decision leads to an annual capex works outages rebate of \$1.46m (\$2007-08).

Opex outages

PB does not support SP AusNet's proposal to increase the historical average of opex outages from the current period by 12% to reflect SP AusNet's estimate of the increase in rebatable outage hours over the forthcoming period. PB states:

Basing the forecast on historical averages without adjustment provides an equitable means of setting targets. Fluctuations in work volume in one regulatory period are corrected for in future regulatory periods. This also means that efficiency gains made over a regulatory period are 'held' by the business for a period of time in the next regulatory period through the target being set at a higher (average) level than the current performance.

Additionally, attempting to identify the impact of step changes in work volumes requires a detailed understanding of how the future work program relates to rebate payments, and may require the adjustment of historical data to remove the impact of one off events.¹⁸⁹

The AER considers there is merit in the principle behind PB's recommendation, under which it is unnecessary to adjust the historical average of rebatable opex outages for expected increases during the forthcoming period, as this increase would be reflected in a higher opex rebate allowance the following period, which would again be set at the new historical average, even if rebatable opex outages were expected to fall in the following period.

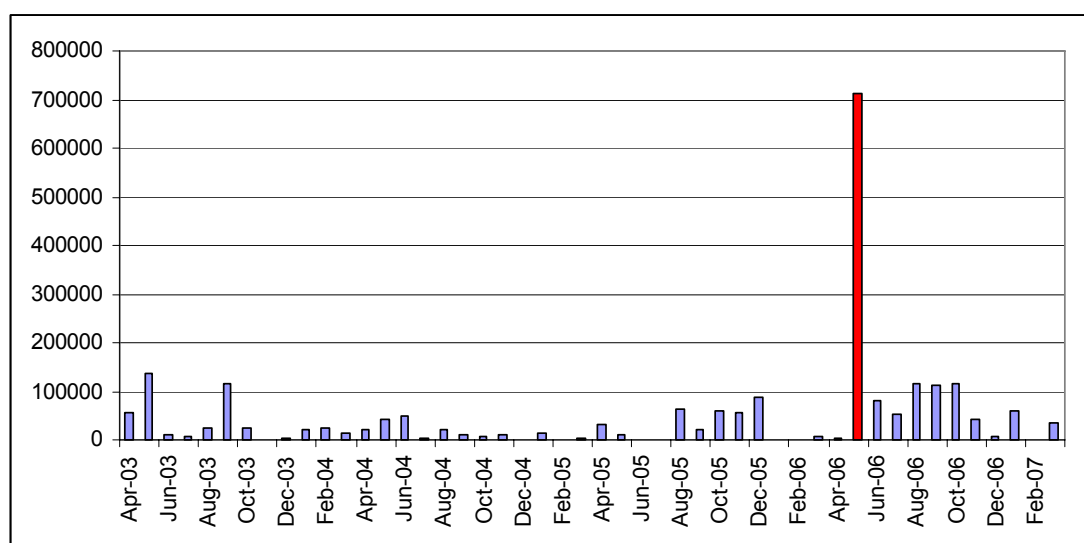
However, while this treatment would be consistent with the STPIS, the regulatory requirements for opex against which the AER must assess this element of SP AusNet's proposal differ from that for the STPIS. Clause 6A.6.6(c)(3) requires the AER to be satisfied that SP AusNet's opex forecast reasonably reflects a realistic expectation of the cost inputs required to achieve the opex objectives. Accordingly the AER accepts SP AusNet's approach of adjusting its historical average for the expected increase in rebatable opex hours (as a proxy for the expected increase in opex rebates). Using the increase in SP AusNet's proposed routine maintenance and asset works costs as a guide, approximately 15%, the AER considers SP AusNet's proposed 12% increase is reasonable.

As PB has noted, this approach requires the adjustment of historical data to remove the impact of one off events. The AER examined SP AusNet's monthly opex rebates for one off events over the four year averaging period, and identified a clear outlier in data, as illustrated in the figure below.

¹⁸⁸ PB, op. cit., p.46.

¹⁸⁹ *ibid.*, p.45.

Figure 6.4 SP AusNet’s monthly opex outage rebates 2003-04 – 2006-07 (nominal \$)



Source: AER analysis

In May 2006, SP AusNet incurred an opex rebate of \$711 293 (nominal), 2102% times greater than the average (excluding the outlier) for the four year period of \$33 831 (nominal). Inclusion of the May 2006 data is likely to distort the historical average so that it does not reasonably reflect a realistic expectation of the rebates likely to be payable by SP AusNet in the forthcoming regulatory control period. The AER has therefore removed this outlier from the historical average before applying the 12% escalation. This results in a decrease of \$188 895 to SP AusNet’s proposed annual opex rebate allowance of \$680 115, resulting in an allowance of \$491 220.

Forced and fault outages

PB agrees with SP AusNet’s proposal that the forced and fault outages component of its rebates forecast should be based on the historical average. The AER agrees with PB’s recommendation and accepts SP AusNet’s approach. The largely random nature of forced and fault outages makes the historical average a reasonable forecast of the level of forced and fault outages in the forthcoming regulatory control period.

However the AER notes that, in the model provided by SP AusNet supporting its proposal, major plant risk outage rebates from September and October 2005 were mistakenly included in the calculation of the historical average of the forced and fault outages. This error has been corrected by the AER.

Major plant risk outages

SP AusNet’s revised proposal submits that the major plant risk outage allowance be kept at its current level, despite SP AusNet not incurring any major plant risk outage rebates during the current regulatory control period. As stated above, SP AusNet’s supporting model indicates that SP AusNet did incur this type of rebate in two months in the current period – September 2005 (\$18 695, nominal) and October 2005 (\$99 682, nominal). These two isolated rebates still amount for far less than the expected annual rebate for 2005, and no major plant risk outage rebates were incurred in any other years of the current regulatory control period.

PB notes that:

...the categories of major plant failures includes the failure of associated secondary equipment that would be affected by changed risk profiles from work undertaken in the current regulatory period and will be further reduced by the capex program to be undertaken in the next regulatory period. For instance, the risk of a CB failure has reduced by 15% since 2002 and is expected to reduce by 35% by 2013...

While it is not possible at this time to undertake a full review of the risk of a major plant failure, PB considers it reasonable to assume that a reduction of 10% should be applied to the major plant failure component to represent the expected reduction in overall risk.¹⁹⁰

PB supports this recommendation by referring to its capex analysis, where PB found that SP AusNet's overall risk had increased by 1% between 2003 and 2008, however on the basis of SP AusNet's capex proposal, SP AusNet's overall risk was expected to fall by 10% between 2003 and 2013.

The AER accepts SP AusNet's assertion that even if no (or few) major plant failure risk outage rebates were incurred during the current period, this does not mean that it is realistic to expect no rebates during the forthcoming period. However the AER again notes that Trowbridges's analysis was intended only for the current regulatory control period, and was not intended to be used for the forthcoming regulatory control period. Given the minimal level of major plant failure rebates from the current period, the AER does not consider SP AusNet's proposal of \$617 273 reasonably reflects a realistic expectation of the level of major plant failure rebates over the forthcoming regulatory control period. Whilst noting that the 10% reduction in overall risk referred to by PB is based on SP AusNet's capex proposal, which has been altered by this decision, given the historical account and outdated nature of the Trowbridge analysis, the AER considers a reduction of 10% from the 2002 forecast to be a reasonable assumption.

6.7.4.5 AER's conclusion

The AER does not consider that SP AusNet's revised proposed rebate allowance of \$3.51m (\$2007-08) per annum, reflects a realistic expectation of the likely level of rebates SP AusNet will incur during the forthcoming regulatory period. Based on the preceding analysis, the AER has substituted this forecast with \$2.79m (\$2007-08) per annum, which the AER does consider reflects such a level. This adjustment has reduced SP AusNet's total rebate allowance from \$21.09m (\$2007-08) to \$16.74 (\$2007-08).

¹⁹⁰ *ibid.*, p.47.

Table 6.32 AER's final decision – Rebates (2007-08)

Rebate outage category	Historical average (current period)	SP AusNet's proposed adjustment	SP AusNet's revised proposal	AER's adjustment	AER's final decision
Opex	\$605 462	Historical average + 12%	\$680 115	Adjusted historical average + 12%	\$491 220
Fault and forced	\$314 993	Historical average	\$314 993	Historical average	\$283 609
Capex	\$844 458	Historical average + 125%	\$1 902 055	\$0.011 rebate per \$ forecast capex	\$1 459 476
Major plant failure risk	Zero	Continue current allowance	\$617 273	Current allowance – 10%	\$555 546
Total pa	\$1 764 913		\$3 514 435	-\$724 585	\$2 789 851

Source: SP AusNet¹⁹¹, AER analysis

Table 6.33 AER's final decision – Rebates (2007-08 \$m)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's revised proposal	3.51	3.51	3.51	3.51	3.51	3.51	21.09
AER's adjustment	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	-4.35
AER's final decision	2.79	2.79	2.79	2.79	2.79	2.79	16.74

Source: SP AusNet, AER analysis

6.7.5 Easement land tax

In 2004, the Victorian Parliament introduced the *Land Tax (Amendment) Act 2004*. The effect of this was to extend Victoria's land tax regime to easements held by electricity transmission companies. As the tax was not included in SP AusNet's current revenue determination, for the years 2004-05, 2005-06, 2006-07 and 2007-08, SP AusNet applied for, and was granted by the ACCC/AER, full pass through of the easement tax, under the pass through rules in its current revenue determination. However, for the forthcoming regulatory control period SP AusNet is required to forecast its easement land tax liability as part of the forecast opex component of its revenue proposal. Where the forecast accepted in this final decision differs from the actual tax paid, SP AusNet will be entitled to apply for a pass through. Under the new pass through rules, which are now prescribed in the NER, a materiality threshold (1% of the MAR) must be met before a pass through is granted.

¹⁹¹ SP AusNet, loc. cit.

6.7.5.1 AER's draft decision

In its draft decision, the AER was not satisfied that SP AusNet's easement tax forecast reasonably reflected a realistic expectation of the easement land tax likely to be incurred in the forthcoming regulatory control period. The AER made the following adjustments to the easement land tax forecast submitted by SP AusNet:

- amended the tax forecast so that it changes every second year in nominal terms, rather than in real terms¹⁹²
- forecast the tax by reference to a forecast easement value in each year, which was necessary to implement the easement tax change event provision, and
- applied an escalator based on the long term increase in urban and rural house values (compound average), and weighted on the proportion of SP AusNet's urban and rural easements – producing a real escalator of 3.55%.¹⁹³

Based on these adjustments, the AER's draft decision approved a substitute forecast of easement land tax of \$516.25m which it was satisfied represented a realistic expectation the easement land tax payable by SP AusNet over the forthcoming regulatory control period, taking into consideration the opex factors.

Table 6.34 AER's draft decision – Easement land tax (2007-08 \$m)

	SP AusNet's original proposal	AER's adjustment	AER's draft decision
Easement land tax	530.85	-14.60	516.25

Source: AER¹⁹⁴

6.7.5.2 SP AusNet's revised proposal

In its revised proposal, SP AusNet states that it seeks certainty in the pass through of the easement land tax.

SP AusNet has submitted two forecasts of its easement tax for the forthcoming regulatory control period. Table 6.32 presents the forecast of easement tax SP AusNet seeks if the AER permits SP AusNet full pass through¹⁹⁵ of its easement land tax for the forthcoming regulatory control period, as it did in the current period before the application of chapter 6A. This forecast applies the AER draft decision escalator of 3.55%.

¹⁹² The *Land Tax Act 2005* (Vic) and the *Valuation of Land Act 1960* (Vic) (both as amended), clearly infer that SP AusNet's easement tax will change every second year in nominal terms. SP AusNet recognised these provisions, but has incorrectly forecast its easement tax such that it increased every second year in real terms, not nominal terms.

¹⁹³ AER, *op. cit.*, p. 191

¹⁹⁴ *ibid.*, p. 192

¹⁹⁵ In this context, SP AusNet is referring to a full pass through of any difference between the actual amount of the tax and the allowance in this final decision, without the application of the materiality threshold, see SP AusNet, *op cit*, p. 169

Table 6.35 SP AusNet’s revised proposal – Easement land tax (2007-08 \$m)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
Easement land tax	76.14	84.10	81.64	90.18	87.54	96.70	516.30

Source: SP AusNet¹⁹⁶

SP AusNet states that the easement tax escalator (4%) contained in its original proposal was a conservative estimate, given the actual increase in the taxable value of SP AusNet’s land portfolio over the current regulatory control period.¹⁹⁷ SP AusNet is concerned about the impact of using such a low escalator (or alternately, the AER’s escalator of 3.55%) on its ability to fully recover the cost of the easement tax.

SP AusNet submits that a higher forecast is appropriate if the AER is to apply the materiality threshold prescribed in the NER to pass through applications relating to the easement land tax, in order to substantially reduce the risk to SP AusNet that the actual easement tax payable is greater than its forecast. Table 6.36 presents an alternative forecast based on an alternate analysis, and applying an escalator of 9.1%. which SP AusNet claims represents the per annum real increase (compound average) in the actual assessable tax value of SP AusNet’s land, during the current regulatory control period.¹⁹⁸ SP AusNet offers a commitment to only recover the actual amount of the easement tax, even if the NER does not require it to pass back these savings to consumers.¹⁹⁹

Table 6.36 SP AusNet’s revised proposal (alternate analysis)– Easement land tax (2007-08 \$m)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
Easement land tax (alternative forecast)	76.10	93.40	90.60	111.10	107.90	132.30	611.40

Source: SP AusNet²⁰⁰

The AER does not have the discretion to waive the application of the materiality threshold prescribed in the NER that applies to SP AusNet, and on that basis has taken the higher, alternate forecast in table 6.36 to be the forecast sought in SP AusNet’s revised proposal.

6.7.5.3 Submissions

Energy Users Coalition of Victoria

The EUCV states that whilst the AER notes that the actual amount of tax payable by SP AusNet is not quantifiable at this stage, there has been an attempt to ‘second

¹⁹⁶ SP AusNet, *op cit*, p. 169

¹⁹⁷ *ibid.*, p. 170

¹⁹⁸ *ibid.*

¹⁹⁹ *ibid.*, p. 169

²⁰⁰ *ibid.*

guess' the actual amounts of easement tax.²⁰¹ The EUCV considers this approach to be inappropriate, as:

There is potentially a significant source of error in an estimate of land values and movements, therefore the AER would as a matter policy institute bias in any estimate.²⁰²

To remove this potential error, the EUCV asserts that SP AusNet should be able to pass through actual costs incurred under the tax.

The EUCV also states that as easement land tax equates to approximately 20% of the MAR, factors contributing to the calculation of the easement tax should be accurate, rather than estimates. The EUCV considers that even minor variations between actual and expected costs would have an adverse and substantial impact on the MAR. The EUCV notes that:

SPA has developed an approach on this matter where its risk is reduced by increasing the amount in the MAR for this easements tax.... The converse of this approach is that the higher the amount, the higher the risk that consumers will be giving SPA unearned income.²⁰³

The EUCV states that the AER should modify its approach to easement land tax by either treating it as a pass through, or including an estimate in the revenue determination but allowing adjustments to be made to reflect actual amounts.²⁰⁴ The EUCV considers that this approach will remove the exposure to consumers and SP AusNet of the risks associated with locking in predetermined amounts for easement tax.

6.7.5.4 AER's considerations

Whilst the AER has considered the EUCV's submission and SP AusNet's arguments for a full pass through of the easement land tax (as opposed to treatment as a component of forecast opex), the NER do not permit the AER the discretion to implement these recommendations.

Before the commencement of chapter 6A, the AER/ACCC was able to determine the pass through provisions for each TNSP at the time of the reset, with the discretion to tailor the pass through provision to incorporate the specific circumstances of individual TNSPs. Under the current version of the NER, the AER's discretion is limited. The AER does not have the discretion to continue the current approach of treating the full amount of the tax as a pass through.

The AER is bound to consider the easement tax as part of forecast opex, and as such must assess it against the opex criteria listed in cl.6A.6.6 (c) of the NER. While the criteria of prudence and efficiency have no relevance in this instance, the requirement that SP AusNet's forecast of the opex required in the forthcoming regulatory control period reasonably reflect a realistic expectation of costs remains applicable. While SP AusNet's commitment to only recover its actual costs is admirable and welcomed

²⁰¹ EUCV, op. cit., p. 39

²⁰² *ibid.*, p. 40

²⁰³ *ibid.*, p. 41

²⁰⁴ *ibid.*, p.42

by the AER, in the interests of balancing the risks to SP AusNet and users, the AER can not accept an inflated forecast of SP AusNet's easement tax liability to mitigate the risks to SP AusNet in a way that would leave users exposed to cost increases that are not justified under the NER. The AER considers that SP AusNet's revised proposal does not reflect a realistic expectation of SP AusNet's future easement tax costs, as required by cl. 6A.6.6(3)(c) of the NER.

In its analysis, SP AusNet determined the real compound average increase in its non-easement taxable land value from the last six years. The AER does not consider the historical growth in the taxable value of SP AusNet's non-easement land to be a good predictor of the future growth in the value of SP AusNet easements.

Although an historical average growth rate is often a reasonable basis from which to determine a forecast, the AER has concerns over the reasonableness of SP AusNet's proposed escalator as it is in fact the historical average increase in the taxable value of SP AusNet's *non-easement* land, rather than the historical average increase in the taxable value of its easements. Whilst forming the position, the AER understands that due to the transitional legislative provisions regarding the valuation of SP AusNet's easements, using the historical growth rate in taxable value, which has remained relatively flat, would not be an appropriate basis for forecasting future tax values.

In addition, to having concerns over basing the escalator on the historical growth rate of non-easement land, the AER is also concerned about the time period over which SP AusNet calculated the growth rate. This historical growth rate was calculated over the last six years during which time Melbourne has experienced a very significant property boom, which has resulted in higher than average price increases. The taxable value of SP AusNet's non-easement land has increased by 54% in the past six years. The AER considers this sort of increase is unlikely to continue for the entire duration of the forthcoming regulatory period, and accordingly considers that data from the past six years alone cannot be reasonably used to forecast land value changes for the forthcoming regulatory control period. Such a forecast is likely to materially overstate the growth in land value of this period.

For these reasons, the AER considers using SP AusNet's proposed land value escalator would produce an unrealistic expectation of the easement land tax payable by SP AusNet in the forthcoming regulatory control period.

To determine an appropriate forecast of SP AusNet's easement tax liability, the AER has calculated both the average annual increase in Melbourne metropolitan house prices, and rural Victorian house prices, between June 1987 and June 2006.

The average annual compound increase over this period for house prices in Melbourne was 3.88% (real). The average annual compound increase over this period for house prices in rural Victoria was 3.62% (real).

In its revised proposal, SP AusNet advised that the distribution of the value of its easements was 61% metro, 39% rural.²⁰⁵ Applying these long term compound average

²⁰⁵ *ibid.*, sourcing State Revenue Office valuation provided to the AER 30 April 2007 p. 170

increases, and the weightings advised by SP AusNet, results in a weighted average escalator of 3.78%.

The AER notes that SP AusNet has again forecast its easement land tax without reference to a forecast easement value in each year of the forthcoming regulatory control period. Instead, SP AusNet has forecast the tax by applying the escalator directly to its 2007 easement tax liability. As stated in the draft decision, for the easement tax change event provision in cl. 11.6.21 of the NER to be implemented, the easement tax must be forecast with reference to a stated forecast easement value in each year of the forthcoming regulatory control period.

The AER has derived a forecast of SP AusNet's annual easement land tax liability by:

1. forecasting the easement land tax by first estimating the value of the easements for the first year of the forthcoming regulatory control period (by applying the 3.78% escalator to SP AusNet 2007 easement tax valuation), and then escalating by this figure in each subsequent year of the regulatory control period
2. applying the easement land tax formula specified in the *Land Tax Act 2005* (being \$22 480 and 5% of the taxable value that exceeds \$2 700 000) to the forecast value of the easements in each year.

SP AusNet's easement land tax will change only every second year, as the Valuer General reassesses the easement values every second year. Consistent with the draft decision, the AER has forecast the tax such that there is a *nominal* increase every second year, rather than a *real* increase.

6.7.5.5 AER's conclusion

The AER is not satisfied that SP AusNet's easement tax forecast reasonably reflects a realistic expectation of the easement land tax likely to be incurred in the forthcoming regulatory control period, and on that basis must reject it.

Using the methodology set out in the analysis in section 6.7.4.4, the AER has derived a substitute forecast on the basis of the information provided in SP AusNet's proposal. The AER approves a forecast of \$520.85m to be included in SP AusNet's total forecast opex for easement land tax, which it is satisfied achieves symmetry in balancing the risks to SP AusNet and users associated with under or over-estimating the costs that will actually be incurred (and is in this way consistent with the symmetrical application of the materiality threshold), and reasonably reflects the opex criteria, taking into account the opex factors.

Table 6.37 AER’s final decision – Easement land tax (real 2007-08 \$m)

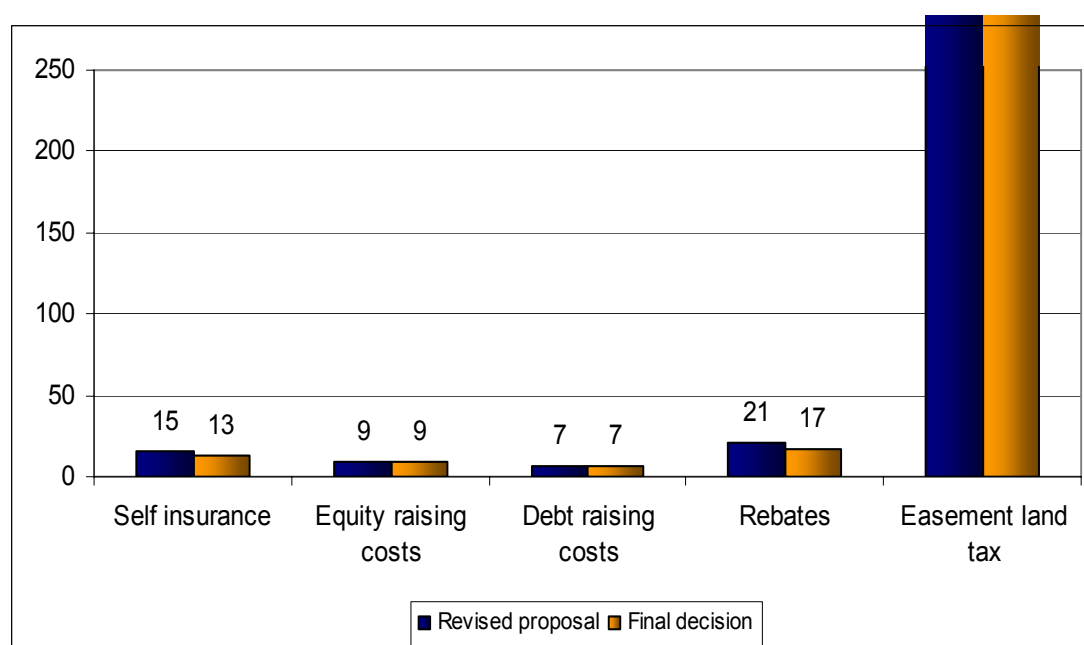
	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet’s revised proposal	76.10	93.40	90.60	111.10	107.90	132.30	611.40
AER’s adjustment	+0.33	-8.94	-8.27	-20.13	-19.22	-34.31	-90.55
AER’s final decision	76.43	84.46	82.33	90.97	88.68	97.99	520.85

Source: SP AusNet²⁰⁶, AER analysis

6.7.6 AER’s conclusion – Other opex

For the reasons outlined above, the AER is not satisfied that SP AusNet’s revised proposed forecast of other opex reasonably reflects the opex criteria, with regard to the opex factors. As required by cl. 6A.14.1(3)(ii) of the NER, the AER has therefore made adjustments to SP AusNet’s proposed forecasts to determine a revised estimate which the AER is satisfied meets the requirements of the NER. SP AusNet’s revised proposal and the AER’s final decision on each component of other opex is summarised in the figure below.

Figure 6.5 AER’s final decision – Other opex (2007-08 \$m)²⁰⁷



Source: SP AusNet (revised cost templates), AER analysis

6.8 AER’s conclusion

The AER has considered SP AusNet’s forecast opex of \$1082.36m (\$2007-08), and for the reasons outlined in this chapter is not satisfied that the total opex forecast proposed by SP AusNet reasonably reflects:

²⁰⁶ *ibid.*

²⁰⁷ Easement land tax – revised proposal \$611m – final decision \$521m.

- the efficient costs of achieving the opex objectives
- the costs that a prudent operator in the circumstances of SP AusNet would require to achieve the opex objectives, and
- a realistic expectation of the demand forecast and cost inputs required to achieve the opex objectives.

In drawing this conclusion the AER has had regard to the opex factors set out in cl. 6A.6.6(e) of the NER, and in particular:

- the information included in and accompanying SP AusNet's revised revenue proposal, including that provided in and with its original proposal
- submissions received from Transend, the EUAA and the EUCV in response to the draft decision and SP AusNet's revised revenue proposal
- analysis undertaken by the AER and for the AER by its consultants PB, as published in and with this final decision
- benchmark opex that would be incurred by an efficient TNSP over the regulatory control period, as informed by advice from the AER's independent consultants, and by the experience of the AER/ACCC in past electricity transmission revenue determinations
- the actual and expected opex incurred by SP AusNet in the current regulatory control period
- the relative prices of operating and capital inputs
- the substitution possibilities between operating and capital expenditure
- potential inconsistencies between the total labour costs in SP AusNet's opex forecasts with the incentives provided by the AER's service target performance incentive scheme
- the extent to which SP AusNet's forecast of required opex is referable to arrangements with other parties that do not reflect arm's length terms.

No projects included in SP AusNet's forecasts of capex for the forthcoming regulatory control period have been identified as more appropriately included as contingent projects under cl. 6A.8.1(b) of the NER, and therefore cl. 6A.6.6(e)(10) of the NER had no bearing on the AER's consideration of SP AusNet's proposal.

As the AER is not satisfied that SP AusNet's forecast opex reasonably reflects the opex criteria, pursuant to cl. 6A.6.6(d), the AER must not accept the forecast opex in SP AusNet's revenue proposal.

On the basis of its analysis of SP AusNet's proposed opex forecast, and the conclusions set out in this chapter, the AER has applied a reduction of \$103.08m (\$2007-08) (approximately 10%) to SP AusNet's proposed forecast to produce a revised estimate of the total opex costs that a prudent operator in the circumstances of SP AusNet would require to achieve the opex objectives. The AER is satisfied that the revised forecast of \$979.29m (\$2007-08) for the forthcoming period, reasonably reflects the opex criteria, taking into account the opex factors.

Table 6.38 AER draft and final decisions – Opex (2007-08 \$m)

	SP AusNet original proposal	AER adjustment	AER draft decision	SP AusNet revised proposal	AER adjustment	AER final decision
Asset works	90.26	-4.69	85.56	84.86	-0.12	84.74
Routine maintenance	206.63	-11.67	194.96	208.8	-0.14	207.94
Corporate	117.71	-15.19	102.52	117.71	-4.34	113.37
Rolled-in assets opex	11.40	-4.92	6.48	7.81	-0.83	6.99
Inventory	-	+0.24	0.24	0.24	Nil	0.24
Subtotal - Controllable opex	426.00	-36.24	389.76	418.70	-5.43	413.27
Self- insurance	15.24	-6.86	8.37	15.13	-2.57	12.55
Equity raising costs	11.81	-11.81	0.00	9.31	-0.07	9.24
Debt raising costs	10.30	-3.72	6.58	6.75	-0.10	6.64
Rebates	40.13	-31.60	8.52	21.09	-4.35	16.74
Easement land tax	530.85	-14.60	516.25	611.40	-90.55	520.85
Subtotal - Other opex	608.34	-68.60	516.25	663.67	-97.65	566.02
Total	1 034.34	-104.84	929.49	1082.36	-103.08	979.29

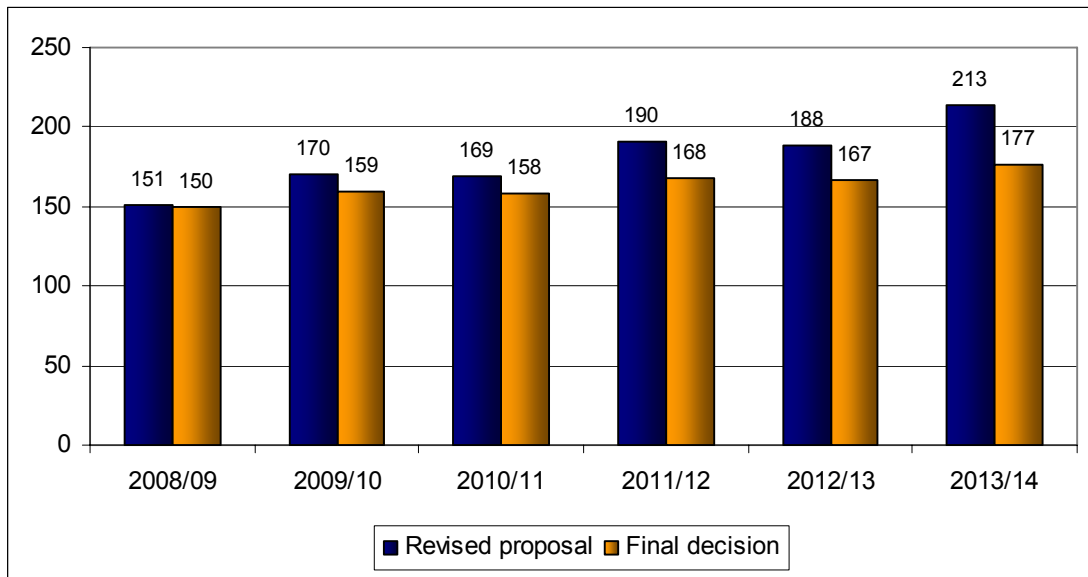
Source: SP AusNet (revised cost templates), AER analysis

Table 6.39 AER's final decision – Opex (2007-08 \$m)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's revised proposal	151.44	170.00	168.99	190.23	188.32	213.39	1082.36
AER's adjustment	-1.46	-10.91	-10.40	-22.30	-21.43	-36.58	-103.08
AER's final decision	149.98	159.09	158.59	167.93	166.89	176.81	979.29

Source: SP AusNet (revised cost templates), AER analysis

Figure 6.6 AER's final decision – Opex (2007-08 \$m)



Source: SP AusNet (revised cost templates), AER analysis

7 Service target performance incentives

7.1 Introduction

Under the current regulatory regime, the AER approves a maximum allowed revenue (MAR) that caps the amount of revenue that TNSPs can earn. However, TNSPs are able to increase profits from regulated activities by reducing costs. Such cost reductions may result from either capex or opex efficiency gains, or by the inefficient deferral or reduction of either form of expenditure. As the latter may result in a decline in the level of service and impose costs on other market participants, the service target performance incentive scheme (STPIS) developed in accordance with the NER aims to balance the incentive for TNSPs to minimise expenditure with the need to maintain and improve reliability for customers, by providing TNSPs with a financial incentive to maintain or improve service levels.

7.2 AER's draft decision

The AER engaged PB to conduct an independent review of SP AusNet's original proposal. Based on PB's advice, the AER in its draft decision, made a number of adjustments to SP AusNet's proposed service performance targets to reflect the impact of SP AusNet's forecast capex on expected service performance. Table 7.1 below sets out the AER's conclusions regarding the values and weightings that will apply to SP AusNet for the forthcoming regulatory control period.

Table 7.1 AER’s draft decision — SP AusNet’s service target performance incentive scheme values and weightings

Parameters	Collar	Target	Cap	Weighting
<i>Availability measures</i>	%	%	%	%MAR
Total circuit	98.41	98.73	99.05	0.20
Peak critical	98.76	99.53	99.92	0.20
Peak non-critical	98.95	99.53	99.81	0.05
Intermediate critical	97.71	99.09	99.78	0.025
Intermediate non-critical	97.94	99.10	99.68	0.025
<i>Loss of supply events</i>		No.		%MAR
>0.05 min per annum	9	6	3	0.125
>0.3 min per annum	4	1	0	0.125
<i>Average outage duration</i>		Minutes		%MAR
Lines	667	382	98	0.125
Transformers	556	412	268	0.125

Source: AER draft decision

The AER’s draft decision accepted the weightings proposed by SP AusNet, which place half of the revenue at risk against parameters related to security of supply and allocate the remainder equally to parameters related to reliability of supply and operational response.

However, the AER rejected SP AusNet’s application of asymmetric caps and collars as this provided a greater benefit for exceeding the target than penalty for falling short of the service performance target. Instead, the AER applied symmetric caps and collars, which prevent variations in performance resulting in significant revenue swings due to the cap/collar being exceeded. For parameters where applying symmetric caps and collars would result in the cap being above 100% performance, the AER set the cap at one standard deviation above the target.

SP AusNet’s original proposal included eight exclusions to the scheme. Of these, the AER accepted two, amended one, and rejected five.

Table 7.2 AER’s draft decision — Exclusions from STPIS

Proposed exclusion	AER’s draft decision
Outages on shunt reactors (for peak targets only)	Accepted
Outages required to control voltage	Accepted
Third party outages exclusion definition	Rejected
BTS to RTS 220 kV planned maintenance cable outages	Rejected
Fault level mitigation works	Modified and accepted
Line up-rating	Rejected
Interconnector upgrades	Rejected
Switchyard busbar up-rating	Rejected

The AER rejected the proposed exclusion of line up-ratings, inter-connector upgrades and switchyard busbar up-ratings as SP AusNet stated that no work of this nature was forecast the forthcoming regulatory control period, and the AER considered it appropriate to apply incentives to reduce any outages should the need arise. The AER did not accept that SP AusNet’s proposed exclusion of outages associated with maintenance of the Brunswick to Richmond cable was appropriate, or consistent with the requirements of the STPIS and the NER. On the basis of the information provided by SP AusNet in support of the proposed exclusion, the AER noted that this maintenance is likely to affect the total circuit availability parameter.

7.3 SP AusNet's revised proposal

SP AusNet’s revised proposal implements the AER’s draft decision in relation to the targets for loss of supply parameters and average outage duration parameters. The revised proposal also recognises the AER’s approval of SP AusNet’s proposed weightings, and makes no further changes to these.

SP AusNet has not fully implemented the AER’s draft decision in relation to availability parameter targets. SP AusNet states that it has implemented the AER’s draft decision in relation to:

- the number of forecast outage hours used to calculate availability targets for the forthcoming regulatory control period for all categories of outages (forced and fault; SP AusNet initiated capex; SP AusNet opex; and customer augmentation)
- the allocation of outage hours used in calculating availability targets for forced and fault outages, SP AusNet opex, and customer augmentation.

However, in calculating the availability parameter targets in its revised proposal SP AusNet has not implemented the AER’s allocation of outage hours for SP AusNet

initiated capex into peak, intermediate and off-peak periods. Where the AER in its draft decision has allocated outage hours using historical capex outages as a percentage of all historical outages, SP AusNet considers that the correct allocation is as a percentage of historical capex outages only.²⁰⁸ In its revised proposal SP AusNet has recalculated the percentage split between peak, intermediate and off-peak outages on this basis, and presented revised targets.

Table 7.3 SP AusNet’s revised proposal — STPIS values and weightings

Parameters	Collar	Target	Cap	Weighting
<i>Availability parameters</i>	%	%	%	%MAR
Total circuit	98.43	98.74	98.90	0.200
Peak critical	98.64	99.41	99.79	0.200
Peak non-critical	98.83	99.40	99.69	0.050
Intermediate critical	97.31	98.69	99.38	0.025
Intermediate non-critical	97.58	98.73	99.31	0.025
<i>Loss of supply events</i>		No.		%MAR
>0.05 min per annum	9	6	3	0.125
>0.3 min per annum	4	1	0	0.125
<i>Average outage duration</i>		Minutes		%MAR
Lines	667	382	98	0.125
Transformers	556	412	268	0.125

Source: SP AusNet Electricity Transmission Revised Proposal 2008/09-2013/14, and SP AusNet email to the AER on 13 November 2007.

SP AusNet’s revised proposal also reiterates the need for the five exclusions rejected in the AER’s draft decision, which it maintains are necessary due to specific planned maintenance outages that are large and unusual in nature, and the inclusion of augmentation outages in availability measures for the first time.²⁰⁹

7.4 Submissions

The EUCV raised concerns about the strength of the STPIS as implemented in the draft decision. The EUCV stated that targets in the draft decision are lower than those

²⁰⁸ SP AusNet Electricity Transmission Revised Proposal 2008/09-2013/14, 12 October, 2007, p.59.

²⁰⁹ *ibid.*, p. 68.

in the current regulatory control period despite increases in capex and opex, which would be expected to improve performance. The EUCV has noted that SP AusNet has achieved its targets in the current regulatory control period despite concurrent capex works, and notes that the capex program set out by the AER for the forthcoming regulatory control period differs little from that imposed in recent years. The EUCV argues that consumers should not be expected to pay for increased capex and opex, and also pay bonuses for a lower standard of performance than they have experienced in the past.

Transend expressed support for the arguments in SP AusNet's revised proposal regarding exclusions for third party outages.²¹⁰

7.5 Regulatory requirements

7.5.1 NER requirements

The AER's final decision must set out the reasons for its decision regarding the values to be applied to the performance incentive scheme parameters and the efficiency benefit sharing scheme parameters.²¹¹ Under 6A.14.3(d) the AER must approve the values attributed to the performance incentive scheme parameters in SP AusNet's revenue proposal if the AER is satisfied that those values comply with the requirements of the service target performance incentive scheme. If the AER's final decision refuses to approve these values then the AER must estimate a substitute amount or value. This substitution must be determined on the basis of the current revenue proposal, and amended only to the extent necessary to enable it to be approved in accordance with the NER.²¹²

7.5.2 The STPIS

The STPIS prescribes the parameters against which values and weightings are set for each TNSP. In each transmission determination, the AER will set the values, weightings and other elements that will apply to each parameter for the relevant regulatory control period. The maximum allowed revenue that the TNSP can earn in each year of the regulatory control period will be adjusted according to the TNSP's performance against the service performance targets, caps and collars included in its transmission determination.

Appendix B of the STPIS states that the following parameters (and sub-parameters) will apply to SP AusNet.

²¹⁰ Transend, Submission of the AER's Draft Decision on SP AusNet's Revenue Proposal, p.6.

²¹¹ NER, cl. 6A.14.1(1).

²¹² *ibid.*, cl 6A.13.2(a).

Table 7.4 Parameters applicable to SP AusNet under the first proposed STPIS

Transmission circuit availability	Loss of supply event frequency
Total circuit availability	Number of events greater than 0.05 system minutes p/a
Transmission circuit availability (peak critical)	Number of events greater than 0.3 system minutes p/a
Transmission circuit availability (peak non-critical)	Average outage duration
Transmission circuit availability (intermediate critical)	Average outage duration – Transmission lines
Transmission circuit availability (intermediate non-critical)	Average outage duration – Transmission transformers/plant

Source: AER First Proposed Service Target Performance Incentive Scheme (January 2007).

7.6 Issues and AER considerations

Each element of the AER’s final decision on the application of the STPIS to SP AusNet in the forthcoming regulatory control period is discussed in turn in the sections below:

- Section 7.6.1 sets out the AER’s consideration of SP AusNet’s proposed targets
- Section 7.6.2 sets out the AER’s consideration of the caps and collars around those targets
- Section 7.6.3 sets out the AER’s consideration of the weightings assigned to the various performance measures
- Section 7.6.4 sets out the AER’s consideration of SP AusNet’s proposed exclusions from the STPIS

7.6.1 Service performance targets

The targets applying to each parameter of the STPIS are considered separately in the sections below:

- Section 7.6.1.1 considers circuit availability targets
- Section 7.6.1.2 considers loss of supply targets
- Section 7.6.1.3 considers average outage duration targets
- Section 7.6.1.4 considers the issues raised by the EUCV in relation to the relationship between past and forecast capex and service performance targets.

7.6.1.1 Circuit availability targets

Draft decision

In its draft decision, the AER rejected SP AusNet’s proposed exclusions to customer works involving line up-ratings, busbar up-ratings and interconnector upgrades. The reasons for the AER’s rejection of these customer works exclusions are set out in section 7.6.4 of this final decision. Under cl. 2.5(g) of the STPIS, proposed service

performance targets for circuit availability and average outage duration parameters are based on historical data for the five years from 2002 to 2006.²¹³ SP AusNet’s initial proposal had allocated outage hours between peak, intermediate and off peak periods based on its allocation of outage hours for past capex and opex outages. The AER considered that this allocation should only be based on past capex outages and made the necessary adjustments.

Table 7.5 AER’s draft decision — Circuit availability parameters

Parameters	Collar	Target	Cap	Weighting
<i>Availability parameters</i>	%	%	%	%MAR
Total circuit	98.41	98.73	99.05	0.20
Peak critical	98.76	99.53	99.92	0.20
Peak non-critical	98.95	99.53	99.81	0.05
Intermediate critical	99.71	99.09	99.78	0.025
Intermediate non-critical	97.94	99.10	99.68	0.025

Source: AER draft decision.

Revised proposal

SP AusNet agrees that the allocation of outage hours should be based on past capex outages only. SP AusNet’s revised proposal accepts the AER’s draft decision on the number of forecast outage hours used to calculate availability targets for the forthcoming regulatory control period for all categories of outages (forced and fault; SP AusNet initiated capex; SP AusNet opex; and customer augmentation). SP AusNet has also implemented the AER’s draft decision on the allocation of outage hours used in calculating availability targets for forced and fault outages, SP AusNet opex, and customer augmentation.

However, SP AusNet notes that the AER’s draft decision allocated outage hours for SP AusNet initiated capex into peak, intermediate and off-peak periods and allocated outage hours using historical capex outages as a percentage of *all* historical outages. In its revised proposal, SP AusNet has accepted that the allocation should be based on capex only but has recalculated this allocation as a percentage of historical *capex* outages and presented revised targets.²¹⁴

SP AusNet submits that, should the AER maintain its rejection of the proposed customer works exclusions, a reduction must be made to the availability parameter targets based on the forecast outage plans for the projects that the AER did not allow

²¹³ SP AusNet, op.cit., p.46.

²¹⁴ SP AusNet, Electricity Transmission Revised Proposal 2008/09-2013/14, 12 October, 2007, p.59.

to be excluded. In its revised proposal, SP AusNet suggests that works of this nature are in fact planned for the forthcoming regulatory control period, and proposed a value of 24 hours to an outages day for forecast customer works. Following submission of its revised proposal, SP AusNet amended its revised proposal to reflect the outage hours for customer works projects where assets are put back into service overnight.²¹⁵

Table 7.6 SP AusNet’s revised proposal — STPIS values and weightings

Parameter	Collar	Target	Cap	Weighting
<i>Availability parameter</i>	%	%	%	%MAR
Total circuit	98.43	98.74	98.90	0.200
Peak critical	98.64	99.41	99.79	0.200
Peak non-critical	98.83	99.40	99.69	0.050
Intermediate critical	97.31	98.69	99.38	0.025
Intermediate non-critical	97.58	98.73	99.31	0.025

Source: SP AusNet Electricity Transmission Revised Proposal 2008/09-2013/14, and SP AusNet email 13 November 2007.

Consultant’s review

PB notes that SP AusNet’s revised proposal implemented the allocation of outage hours associated with SP AusNet initiated capex to peak, intermediate and off-peak periods based on capex only.²¹⁶ PB also acknowledges SP AusNet’s correction of the data error in PB’s report to the AER, identified above, which had reduced the allocation of outage hours to peak and intermediate periods to half of the true value derived from historical data.²¹⁷

PB has confirmed the accuracy of the values recalculated by SP AusNet in its revised proposal, which are 3.78% (peak), 12.04% (intermediate) and 84.18% (off peak). These values result in lower targets for the circuit availability parameters for peak and intermediate periods.²¹⁸

Having considered the revised proposal, PB maintains its recommendation that the AER reject SP AusNet’s revised proposed exclusion for customer works relating to line up-ratings, inter-connector upgrades and switchyard busbar up-ratings. This is discussed further in section 7.6.4 below. PB reviewed the adjustments proposed to the

²¹⁵ SP AusNet’s amendments covered all customer works projects and not just those associated with the proposed customer works exclusions.

²¹⁶ PB Strategic Consulting, SP AusNet Reset, Advice on revised revenue proposal, p. 47.

²¹⁷ *ibid.*

²¹⁸ *ibid.*

targets should the AER reject the proposed exclusions and found them to be based on reasonable outage plans. It should be noted that SP AusNet's proposed availability parameter targets do not include this downward adjustment.

PB also reviewed SP AusNet's re-estimation of outage hours (submitted 13 November 2007) for overall customer works and found no reason to believe the outage hours assigned to each project were unreasonable. The re-estimations resulted in an overall reduction of 8% in outage hours in total customer works from those initially estimated in SP AusNet's revised proposal.²¹⁹ This adjustment is reflected in SP AusNet revised proposal.

AER's considerations

The AER accepts SP AusNet's correction of the error in calculation of the circuit availability parameters in PB's report and the AER's draft decision, and PB's confirmation that the calculations in SP AusNet's revised proposal are correct. This adjustment represents the majority of the shift in targets from those in the draft decision.

The AER accepts SP AusNet's proposal to adjust the availability targets down to account for works associated with the rejected exclusions (line up-ratings, interconnector upgrades and switchyard busbar up-ratings).²²⁰ As this adjustment was not included in SP AusNet's revised targets (as SP AusNet proposed an exclusion for these events), the AER's approved availability targets are lower than those proposed by SP AusNet.

Conclusion

The AER is satisfied that the allocation of outage hours associated with SP AusNet's initiated capex to peak, intermediate and off-peak periods for the purposes of calculating its availability targets in its revised proposal is consistent with the STPIS. On that basis, the AER accepts SP AusNet's revised targets subject to a minor adjustment to include outage hours associated with line up-ratings, interconnector upgrades and switchyard busbar up-ratings exclusions, which was not included in the figures proposed by SP AusNet.

²¹⁹ *ibid.*, p. 48.

²²⁰ SP AusNet's revised proposal requested that the AER treat these events as exclusions, but also calculated the necessary adjustment to targets if the AER maintained the position taken in its draft decision and rejected the proposed exclusions. This calculation was not however included in SP AusNet's proposed targets.

Table 7.7 AER's final decision — availability parameter values

Measures	Collar	Target	Cap	Weighting
<i>Availability parameters</i>	%	%	%	%MAR
Total circuit	98.41	98.73	99.05	0.20
Peak critical	98.62	99.39	99.78	0.20
Peak non-critical	98.83	99.40	99.69	0.05
Intermediate critical	97.29	98.67	99.36	0.25
Intermediate non-critical	97.57	98.73	99.31	0.25

7.6.1.2 Loss of supply targets

Draft decision

In its draft decision, the AER was satisfied that the four years of data available for the loss of supply parameters in SP AusNet's original revenue proposal was sufficient to determine the service performance targets and was consistent with the objectives of the STPIS.

However, the AER did not accept SP AusNet's rounding of loss of supply service performance targets to the next highest integer. The AER's draft decision rounded loss of supply targets to the nearest whole number, in accordance with previous transmission determinations. The AER was satisfied that the rounding of loss of supply targets to the nearest whole number is an appropriate adjustment and recognises the achievable outcomes for these parameters in any one year.

Revised proposal

SP AusNet's revised proposal implemented the AER's draft decision in regard to loss of supply targets.²²¹

AER's considerations

SP AusNet's revised proposal accepts the loss of supply targets in the AER's draft decision without amendment. No changes have been made in the information contained in the revised proposal that would require the AER to vary its position in relation to this matter.

Conclusion

The AER is satisfied that the loss of supply parameter targets as set out in its draft decision, and incorporated in its final decision are consistent with the STPIS. On that basis, the AER accepts the loss of supply targets included in SP AusNet's revised proposal.

²²¹ SP AusNet revised proposal, 12 October 2007, p. 61.

Table 7.8 AER’s final decision — Loss of supply parameter values

Parameters	Collar	Target	Cap	Weighting
<i>Loss of supply events</i>		No.		%MAR
>0.05 min per annum	9	6	3	0.125
>0.3 min per annum	4	1	0	0.125

7.6.1.3 Average outage duration targets

Draft decision

In its draft decision the AER accepted SP AusNet’s proposal to cap the impact of an individual outage on the average outage duration parameters at seven days. The AER was satisfied that the cap was sufficiently low to limit the risk to SP AusNet of a single event while still maintaining appropriate incentives. The average outage duration parameters were determined through the use of historical data adjusted for consistency with the introduction of a seven day cap. The AER is of the view that the capex program will not significantly increase reliability within the forthcoming regulatory control period, and therefore has not adjusted service targets. The proposed level of SP AusNet’s capex is not likely to lead to a significant reduction in relative asset failure risk level over the forthcoming regulatory control period.

Revised proposal

SP AusNet’s revised proposal accepted and implemented the AER’s draft decision recommendations regarding average outage duration measures.²²²

AER’s considerations

SP AusNet’s revised proposal accepts the AER’s draft decision on average outage duration measures with no amendments. No changes have been made in the information contained in or accompanying the revised proposal that has caused the AER to move from its initial position in relation to this project.

The AER’s consideration of the EUCV’s submission in relation to the setting of targets is discussed at section 7.6.1.4 below.

Conclusion

The AER is satisfied that the average outage duration targets set out in its draft decision and implemented by SP AusNet in its revised proposal are consistent with the STPIS. A cap of one week (168 hours) will apply to individual events.

²²² *ibid.*, p. 61.

Table 7.9 AER’s final decision — Average outage duration parameter values

Parameters	Collar	Target	Cap	Weighting
<i>Average outage duration</i>		Minutes		%MAR
Lines	667	382	98	0.125
Transformers	556	412	268	0.125

7.6.1.4 Relationship between capex and targets

In its submission on the AER’s consultants report, the EUCV states that,

The recommendation from PB would allow SPA to achieve a bonus in every year of the current period based on the past five years of performance. This is not a feasible incentive scheme as the near certainty of achieving a bonus must not be taken as a given but something to be strived for.²²³

This position is reiterated in the EUCV’s submission on the AER’s draft decision which states “it is of grave concern that the AER proposes to allow SPA to almost automatically collect a bonus which SPA is almost certain to attain based on recent past performance”.²²⁴

The downward adjustments the AER has made to SP AusNet’s service performance targets, accord with both the STPIS and clause 6A.7.4 of the NER. There are several factors that have led to the AER setting lower targets when compared against those that apply to SP AusNet in the current period. Firstly, at the AER’s request, SP AusNet changed the exclusions it applies to its performance reporting. This change was to include the impact of customer initiated capex and third party outages on its performance reporting, which was necessary to bring SP AusNet into line with its own definitions under the STPIS, and with other TNSPs. This change led to a lower historical average, and therefore lower targets going forward.

It is incorrect to state that either PB’s recommendation to the AER, or the AER’s decision on the targets will make it easier for SP AusNet to receive a bonus, or that the lower targets will reduce the incentive properties of the scheme. This change to the targets is necessary to ensure that the basis upon which the targets are set is consistent with the exclusion definitions that apply to SP AusNet over the forthcoming period. Therefore, any reduction in targets for this reason is simply the result of a change in reporting methodology, and will not make it easier for SP AusNet to achieve its targets, as more outage hours are now captured in SP AusNet’s reported performance.

SP AusNet’s targets were also reduced due to the forecast increase in capex over the forthcoming period. The reason this downward adjustment is necessary is that the increase in capex proposed for the forthcoming regulatory control period (measured by outage hours not by expenditure) will necessarily result in a lower level of performance, as a TNSP must take assets out of service while undertaking capital

²²³ EUCV, *AER Consultants Reports, A response*, November 2007, p.19.

²²⁴ EUCV, *AER Draft Determination, A response*, November 2007, p.48.

works. Consistent with the STPIS, the AER has adjusted the targets to take the increase in outage hours associated with the increased capex into account. In undertaking this process the AER, through its consultants has undertaken a ‘bottom up’ assessment of SP AusNet’s outage plans to determine the appropriate adjustment to the availability targets resulting from the forecast capex program, and is satisfied that it has made a reasonable adjustment that is consistent with cl. 1.4 of the STPIS. It should be noted that this adjustment does not reduce the incentive for SP AusNet to undertake its forecast capex in an efficient manner.

The EUCV also states that investment in recent years should have resulted in an improvement in reliability, so that higher targets should be applied to SP AusNet over the forthcoming period. While the AER has not attempted to quantify the impact of either past or forecast capex on overall reliability, the AER notes that it is incorrect to assume that capex is always intended to *improve* reliability, as opposed to *maintain* reliability. As stated in its draft decision,²²⁵ the AER considers that SP AusNet’s proposed capex program will not significantly increase reliability within the forthcoming regulatory control period, and does not consider it appropriate to make any adjustment, as the allowed level of capex is not expected to significantly reduce SP AusNet’s relative asset failure risk over the six years for which these targets will apply. The AER’s consideration of the appropriate targets for the forthcoming regulatory period has been informed by detailed outage plans provided by SP AusNet that demonstrate that the capital works forecast for the next six years will have a material impact on SP AusNet’s performance against its availability parameters. The targets approved in this final decision impose the necessary discipline on SP AusNet’s management of these works to ensure that it undertakes the works in an efficient manner, and minimises the impact on consumers.

7.6.2 Caps & Collars

7.6.2.1 Draft decision

In its draft decision, the AER rejected SP AusNet’s proposal to set caps at one standard deviation above the target, but set collars two standard deviations below. This proposal would create asymmetry by providing a greater reward for exceeding the target than penalty for failure to reach it. The AER instead applied symmetric caps and collars. For parameters where this would result in the cap being above 100% performance, the AER set the cap at one standard deviation above the target.

7.6.2.2 Revised proposal

In proposing revised values, SP AusNet’s revised proposal did not accept the AER’s draft decision on caps and collar values. SP AusNet again set caps at one standard deviation above the revised targets with collar values set at two standard deviations below the revised targets.

²²⁵ AER, *SP AusNet transmission determination 2008-09 to 2012-2014, Draft decision*, p.208.

7.6.2.3 Consultant's review

PB recommended that both caps and collars be set at two standard deviations unless this would result in the cap exceeding 100% performance or being so close to 100% performance as to be unreasonable.²²⁶

7.6.2.4 AER's considerations

The AER rejects SP AusNet's proposal to have caps at one standard deviation above the target, and agrees with PB that caps and collars be set at two standard deviations, as in the AER's draft decision. This methodology allows for natural variations in the performance that will balance incentives and encourage improvement without risking large losses or gains due to statistical outliers.

7.6.2.5 Conclusion

The AER is satisfied that the caps and collars set out in its draft decision, and incorporated in this final decision are consistent with the STPIS.

7.6.3 Weightings

7.6.3.1 Draft decision

The STPIS places 1% of SP AusNet's MAR at risk. This is an increase from the 0.5% of revenue at risk in the current regulatory control period. Each performance measure in the STPIS is weighted to determine what proportion of the total revenue at risk is attached to each target. The AER's draft decision accepted that the weightings proposed by SP AusNet in its initial proposal were reasonable and appropriate to apply to SP AusNet's service targets in the forthcoming regulatory control period. The weightings place half of the revenue at risk for parameters related to security of supply and allocate the remainder equally to parameters related to reliability of supply and operational response. This allocation is consistent with the value placed on services by SP AusNet's customers and the objectives of the STPIS.

7.6.3.2 Revised proposal

SP AusNet's revised proposal notes that the AER's draft decision accepted the weightings proposed by SP AusNet in its initial proposal, and does not propose to change them.

7.6.3.3 AER's considerations

No changes have been made in SP AusNet's revised proposal that have given the AER cause to change its stance in regards to this matter. The weightings will provide incentives for SP AusNet to plan and minimise outages to assets highly valued by its customers, and at times that are highly valued to customers.

7.6.3.4 Conclusion

The AER is satisfied that the proposed weightings in SP AusNet's initial proposal and approved in the AER's draft decision, are appropriate and consistent with the objectives of the STPIS.

²²⁶ PB, op cit, p.51.

Table 7.11 AER’s final decision — Weightings

Parameters	Weighting (%MAR)	Parameters	Weighting (%MAR)
<i>Availability parameters</i>		<i>Loss of supply events</i>	
Total circuit	0.20	>0.05 min per annum	0.125
Peak critical	0.20	>0.3 min per annum	0.125
Peak non-critical	0.05	<i>Average outage duration</i>	
Intermediate critical	0.025	Lines	0.125
Intermediate non-critical	0.025	Transformers	0.125

7.6.4 Exclusions

7.6.4.1 Draft decision

The STPIS provides that SP AusNet may propose additional exclusions in its revenue proposal. The AER’s draft decision accepted that the existing shunt reactor and voltage control exclusions set out in SP AusNet’s original proposal should be maintained in the forthcoming regulatory control period. The AER considers that the exclusion on shunt reactors is reasonable as shunt reactors are not required to be in service during peak periods. The exclusion on voltage control outages is also considered appropriate.

However, the AER rejected SP AusNet’s proposed variation to the standard third party exclusion, as SP AusNet can influence the timing of construction and demolition activities, and the incentive should therefore apply. The AER also rejected proposed exclusions to line up-ratings, interconnector upgrades and busbar up-ratings. Exclusions for such works were considered inappropriate given SP AusNet’s contention at the time that there were no works of this nature forecast for the forthcoming regulatory control period. The AER considered it appropriate to maintain the incentive for SP AusNet to minimise any such outages should the need for such works arise.

The AER also rejected SP AusNet’s proposed exclusion of the planned works to be carried out on the Brunswick to Richmond cable. SP AusNet claims that the Brunswick to Richmond cable should be excluded from the STPIS as the years containing work on the cable joints would have outages substantially above the historical average. However, the ‘circuit availability total’ parameter is the only parameter likely to be affected by the planned outages associated with the joint replacements in the cable, as planned outages are not included in the loss of supply and average outage duration parameters.²²⁷ Given the importance of the cable during

²²⁷ PB Strategic Consulting, op cit, p.51.

peak and intermediate periods, the planned works are likely to be performed in off-peak periods.

The STPIS does not allow service performance targets for circuit availability parameters to be adjusted for changes in the amount of maintenance work. Nor does it contain specific exclusions for the failure of equipment to reach its technical life. It is not unreasonable to expect a TNSP to carry the risk that equipment requires more or less planned maintenance than envisaged at the time of purchase.²²⁸ For these reasons, the AER did not consider the Brunswick to Richmond cable exclusion was warranted.

7.6.4.2 Revised proposal

In its revised proposal, SP AusNet accepted the AER's draft decision that existing shunt reactor and voltage control exclusions be continued, but sought clarification in the AER's final decision as to whether excluded outages on shunt reactors applied during both peak and intermediate periods.

SP AusNet did not accept the AER's rejection of the Brunswick to Richmond cable exclusion and exclusions for customer works associated with line up-ratings, busbar up-ratings and interconnector upgrades. Where its initial proposal suggested that no works of this nature would take place in the forthcoming regulatory control period, SP AusNet's revised proposal attached a spreadsheet outlining ten previously unidentified line up-rating projects and two interconnector projects.

SP AusNet also sought further clarification of the standard third party exclusion.

7.6.4.3 Consultant's review

Customer works involving line up-ratings, busbar up-ratings and interconnector upgrades

PB disagrees with SP AusNet's proposed exclusion of customer works for line up-ratings, busbar up-ratings and interconnector upgrades. PB notes that such an exclusion would provide an incentive for these works to be undertaken in peak periods, so that other works subject to the incentive scheme could be scheduled in the off-peak and intermediate periods in preference to excluded works which do not attract an incentive payment.

Instead, PB recommends that to the extent that these projects can be verified, that an appropriate allowance should be made when setting incentive targets.²²⁹

PB notes that two of the line up-rating projects have been forecast to commence in 2015, outside the forthcoming regulatory control period, and that the outage hours associated with these projects should be removed from the calculation.²³⁰

Shunt reactors

PB recommends that the exclusion of outages on shunt reactors should apply to both peak and intermediate periods.²³¹ PB considers this reasonable as shunt reactors are not required to be in service during periods of high demand for electricity.

²²⁸ *ibid.*, p.50.

²²⁹ *ibid.*, p. 47.

²³⁰ *ibid.*

Brunswick to Richmond cable

PB does not accept SP AusNet's proposed exclusion of outages associated with planned works on the Richmond to Brunswick cable, and considers it not unreasonable to expect a TNSP to carry the risk that equipment requires more or less planned maintenance than envisaged at the time of purchase. PB recommends that no exclusion be granted for this project.

SP AusNet has estimated an average of 800 hours to replace each joint bay. With two joint bays being replaced each year, SP AusNet based its assessment of the likely impact on reported performance by assuming 1600 outage hours per annum, representing 5.6% of its revenue at risk.²³² As a result, PB is of the view that the risk of breaching the collar is sufficiently minimal that the incentive properties of the scheme will not be lost, and that the maintenance works will not result in a situation where the cap/collar may be breached.

Standard third party exclusions

SP AusNet proposed that the standard third party exclusion be clarified by a statement in the AER's final decision, to make clear that outages occurring at the same time as a customer's outage request may be excluded. PB is of the view that such outages meet the standard exclusion criterion, which allows outages shown to be caused by 'other events' on a third party system to be excluded.²³³ PB suggests that any attempt to clarify the standard exclusion criterion for third party events outside of a process that involves all TNSPs may not address all relevant issues. PB recommends that no adjustment be made to the standard third party definition.

7.6.4.4 AER's considerations

Customer works involving line up-ratings, busbar up-ratings and interconnector upgrades

The AER accepts PB's recommendation to reject the additional exclusions proposed by SP AusNet for customer works for line up-ratings, busbar up-ratings and interconnector upgrades. As it has not allowed this exclusion, the AER has made a corresponding adjustment to the relevant targets, which is discussed in section 7.6.1.1 above.

Shunt reactors

The AER agrees that the shunt reactor exclusion should apply to both peak and intermediate period outages.

Brunswick to Richmond cable

The AER agrees with PB's reasoning and does not consider the proposed exclusion of outages associated with maintenance work on the Brunswick to Richmond cable is justified. The impact of this maintenance on the STPIS is likely to be limited to the total circuit availability parameter, and it is not unreasonable to expect a TNSP to carry the risk of more or less planned maintenance than anticipated at the time of purchase.

²³¹ *ibid*, p.47.

²³² *ibid*, p.49.

²³³ *ibid*, p.50.

The AER considers that SP AusNet does have control over many elements of the maintenance works, and it is therefore inappropriate to exclude the events. The AER does not consider that the inclusion of these events in SP AusNet’s performance calculations will distort the incentive properties of the scheme.

Standard third party exclusions

The AER shares PB’s view that there should be no changes to the standard exclusion criterion for third party events.

7.6.4.5 Conclusion

The AER has accepted that existing exclusions to shunt reactor and voltage control be continued in the next regulatory control period. However, the AER does not consider the Brunswick and Richmond cable exclusion is warranted. The AER also rejects the proposed exclusions involving line up-ratings, busbar up-ratings and interconnector upgrades, and has instead modified the relevant targets, which is consistent with the STPIS. The AER is satisfied that its decision on exclusions is appropriate and consistent with the objectives of the STPIS.

Table 7.12 AER’s final decision — Exclusions

Proposed exclusions	Final decision
Outages on shunt reactors (peak and intermediate targets)	Accepted
Outages to control voltage	Accepted
Standard third party exclusions	Rejected
Fault level mitigation works	Modified and accepted
Line up-rating	Rejected
Interconnector upgrades	Rejected
Switchyard busbar up-rating	Rejected
Richmond to Brunswick cable	Rejected

7.7 AER’s conclusion

The AER is required by the NER to apply the STPIS to SP AusNet over the forthcoming regulatory control period. The values and weightings to be applied to SP AusNet are set out in table 7.13.

Table 7.13 AER’s final decision — SP AusNet’s service target performance incentive scheme values and weightings

Parameters	Collar	Target	Cap	Weighting
<i>Availability parameters</i>	%	%	%	%MAR
Total circuit	98.41	98.73	99.05	0.20
Peak critical	98.62	99.39	99.78	0.20
Peak non-critical	98.83	99.40	99.69	0.05
Intermediate critical	97.29	98.67	99.36	0.25
Intermediate non-critical	97.57	98.73	99.31	0.25
<i>Loss of supply events</i>		No.		%MAR
>0.05 min per annum	9	6	3	0.125
>0.3 min per annum	4	1	0	0.125
<i>Average outage duration</i>		Minutes		%MAR
Lines	667	382	98	0.125
Transformers	556	412	268	0.125

8 Maximum allowed revenue

8.1 Introduction

This chapter sets out the Australian Energy Regulator's (AER) calculation of SP AusNet's maximum allowed revenue (MAR) for the provision of prescribed transmission services for each year of the next regulatory control period, in accordance with the building block approach.

8.2 AER's draft decision

The AER's draft decision specified SP AusNet's annual building block requirement and MAR as outlined in table 8.1. The AER applied an X factor of -1.52% to derive an expected total revenue cap of \$2 762.26m (nominal).

Table 8.1: AER's draft decision – building block calculation and expected MAR (\$m, nominal)

Year ending 31 March	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Return on capital	195.01	200.90	207.48	215.44	221.11	224.97
Economic depreciation	44.26	51.35	57.36	62.45	68.02	63.27
Opex (incl. easement land tax)	146.37	160.62	165.06	179.19	183.25	200.20
Glide-path	8.65	7.12	5.50	3.78	1.95	0.00
Tax liability	13.61	14.22	14.72	14.93	15.26	14.21
Building block requirement	407.89	434.22	450.13	475.79	489.59	502.65
MAR	410.56	429.30	448.91	469.40	490.84	513.25

Source: AER draft decision, p. 223.

Details of the AER's draft decision relating to past capex, the regulatory asset base (RAB), forecast capex and opex have been discussed previously in this final decision.

In relation to other building block components, the AER accepted SP AusNet's glide path calculation but required a minor change to its proposed depreciation schedule (affecting the standard life of vehicles and the remaining lives of non-contestable assets). SP AusNet's proposed tax liability and return on capital were calculated in accordance with the post-tax revenue model (PTRM) and were revised as a result of the AER's adjustments to related building block components.

The implied unit cost of the MAR under the AER's draft decision was \$7.84/MWh in 2008-09 and increased at an annual nominal rate of 4.16% to \$9.61/MWh in 2013-14. In real (2007-08) terms, this represented an average annual increase of 1.13% from \$7.54/MWh in 2007-08 to \$8.05/MWh in 2013-14.

8.3 SP AusNet's revised proposal

SP AusNet's revised proposal contests the AER's draft decision relating to several inputs in the building block calculation, notably opex and capex allowances for the period.

SP AusNet accepts the AER's decision regarding the minor changes required to its depreciation schedule.

SP AusNet submits a revised glide-path calculation to reflect opex savings arising in 2007-08 from its NW contract that were not previously included. This is discussed further in chapter 6.

The PTRM submitted by SP AusNet did not incorporate the inflation forecast of 2.5% or its "alternative" easement land tax allowance of \$611.44m (\$2007-08) which the AER has considered as forming part of SP AusNet's revised proposal.²³⁴ Accordingly, the AER has incorporated these values in presenting SP AusNet's proposed building block requirement and MAR which differ from those in its proposal document.

SP AusNet's proposal results in an X factor of -4.34% to escalate the MAR from 2007-08 to 2013-14. This results in the MAR in the final year of the period being \$20.58m (approximately 3.6%) higher than the building block requirement for that year.

SP AusNet's revised calculation of its building block requirement and MAR is outlined in table 8.2.

Table 8.2: SP AusNet's revised proposal – building block calculation and expected MAR (\$m, nominal)

Year ending 31 March	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Return on capital	193.88	201.91	209.41	216.50	223.83	232.57
Economic depreciation	53.94	60.60	66.73	72.00	77.04	70.87
Opex (incl. easement land tax)	155.26	178.61	181.98	209.97	213.07	247.46
Glide-path	8.66	7.06	5.46	3.73	1.91	0.00
Tax liability	15.39	16.04	16.53	16.70	17.04	15.94
Building block requirement	427.14	464.21	480.11	518.90	532.88	566.84
MAR	419.90	449.06	480.25	513.60	549.28	587.43

Source: SP AusNet PTRM submitted 12 October 2007 with amendments by the AER.

²³⁴ See pages 170 and 189 of SP AusNet's revised proposal for details of these proposed amounts.

8.4 Submissions

The EUCV notes that the draft decision would result in a significant increase in the per MWh cost of SP AusNet's MAR from 2007 to 2008. It states that when the cost of VENCORP's charges are added (approximately \$1/MWh) the 'real' tariff in 2013 is approximately \$9.50/MWh.²³⁵

It also notes that SP AusNet's revised proposal provides for revenue to decrease by \$10.0m per year over the period (relative to its original proposal), and an increase in tariffs of 10.0% from their current levels.²³⁶

8.5 Regulatory requirements

In relation to revenue requirements, cl. 6A.4.2 of the National Electricity Rules (NER) requires that a revenue determination must specify, amongst other things:

- (1) the amount of the estimated total revenue cap for the regulatory control period or the method of calculating that amount;
- (2) the annual building block revenue requirement for each year of the regulatory control period;
- (3) the amount of the maximum allowed revenue for each year of the regulatory control period or the method of calculating that amount.

8.5.1 Annual building block revenue requirement

Clause 6A.5.4 outlines the calculation of the annual building block revenue requirement for each year of the regulatory control period, which is comprised of the following components:

- (1) indexation of the regulatory asset base (RAB) by the amount referred to in cl. S6A.2.4(c)(4)
- (2) a return on capital for that year calculated in accordance with cl. 6A.6.2;
- (3) depreciation for that year calculated in accordance with cl. 6A.6.3;
- (4) the estimated cost of corporate income tax of the transmission network service provider (TNSP) for that year determined in accordance with cl. 6A.6.4;
- (5) revenue increments or decrements for that year arising from the efficiency benefit sharing scheme (EBSS) referred to in cl. 6A.6.5;
- (6) operating expenditure (opex) forecast under cl. 6A.6.6;
- (7) compensation for risks not otherwise compensated for.

The requirements of the NER in relation to each of these components are discussed below, with the exception of the return on capital (see chapter 5) and opex and compensation for other risks (see chapter 6).

²³⁵ EUCV, p. 9.
²³⁶ *ibid.*, p. 10.

8.5.1.1 Indexation of the RAB

Indexation of the RAB is compensated for in the method used to roll forward the RAB under cl. S6A.2.4(c). That is, the roll forward calculation must incorporate an adjustment to maintain the real value of the RAB from the beginning of one year to the next.

Clause 6A.4.2(a)(4) requires the AER to specify, in its revenue determination, appropriate methodologies for indexation of the regulatory asset base.

8.5.1.2 Depreciation

Under cl. 6A.6.3 of the NER, depreciation for each regulatory year must be calculated on the value of the assets included in the RAB, as at the beginning of that year.

A TNSP must, in its revenue proposal, nominate depreciation schedules for assets or categories of assets that conform to the following requirements:

- the schedules must depreciate using a profile that reflects the nature of the assets or category of assets over the economic life of that asset or category of assets
- 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 RAB) must be equivalent to the value at which that asset or category of assets was first included in the RAB
- the economic life of the relevant assets and the depreciation methodologies and rates underpinning the calculation of actual depreciation for a given regulatory control period must be consistent with those determined for the same assets on a prospective basis in the transmission determination for that period.

If the depreciation schedules nominated by the TNSP conform to these requirements, depreciation must be calculated using those schedules. However, to the extent that the schedules nominated by the TNSP do not conform, cl. 6A.6.3(a)(2) provides that depreciation must instead be calculated using depreciation schedules determined for that purpose by the AER in its final decision.

8.5.1.3 Corporate income tax

The estimated cost of corporate income tax (ETC_t) must be calculated in accordance with the following formula:

$$ETC_t = (ETI_t \times r_t)(1 - \gamma)$$

where:

ETI_t is an estimate of the taxable income for that regulatory year that would be earned by a benchmark efficient entity as a result of the provision of prescribed transmission services if such an entity, rather than the TNSP, operated the business of the TNSP, such estimate being determined in accordance with the PTRM;

r_t is the expected statutory income tax rate for that regulatory year as determined by the AER; and

γ is the assumed utilisation of imputation credits, which is deemed to be 0.5.

8.5.1.4 Efficiency benefit sharing scheme

Adjustments to the MAR from the AER's EBSS, as provided under cl. 6A.5.4, will not take effect until the regulatory control period commencing on 1 April 2014. These adjustments will be in the form determined in accordance with the AER's first proposed EBSS, as required by the transitional provisions in cl. 11.6.18 of the NER.

Clause 6A.4.2(a)(6) requires the AER to specify, in its revenue determination, values for the efficiency benefit sharing scheme parameters for the purposes of the EBSS that applies for the forthcoming regulatory control period.

The transitional provisions in cl. 11.6.10 of the NER provide for adjustments to the MAR arising from such mechanisms implemented as part of the previous revenue determination and other arrangements agreed between the AER and the TNSP. This includes the glide path mechanism provided for in the ACCC's 2002 decision, which was made under the ACCC's Draft statement of principles for the regulation of transmission revenues (DRP).

8.5.2 Post tax revenue model

Clause 6A.5.2 requires the AER to develop a PTRM to calculate the annual building block revenue requirement for each year of the regulatory control period using the approach described in cl. 6A.5.4. A TNSP's revenue proposal must be prepared using the PTRM. The AER is required to publish its PTRM by 28 September 2007. For the purposes of this transmission determination, the transitional provision in cl. 11.6.18 of the NER provides that SP AusNet must use the AER's first proposed PTRM, which was published on 31 January 2007.

The first proposed PTRM estimates the MAR for each year of the relevant regulatory control period by escalating the previous year's MAR using a CPI-X methodology, beginning with the MAR that applies to the TNSP in the final year of the previous regulatory control period. The PTRM incorporates a forecast inflation rate to calculate the expected MAR, whereas the actual MAR is escalated by an actual rate of inflation.

Clause 6A.6.8 requires a TNSP to specify the value(s) of the X factor such that:

- the net present value (NPV) of the expected MAR for each regulatory year is equal to the NPV of the annual building block revenue requirement for each year of the regulatory control period; and
- the expected MAR for the last year of the period is as close as reasonably possible to the annual building block revenue requirement for that regulatory year.

Providing they comply with the above requirements, the X factor for each regulatory year must be that nominated in the TNSP's revenue proposal. However, to the extent that the X factors nominated in the TNSP's proposal do not so comply, the X factors will be those determined for that purpose by the AER in its final decision.

8.6 Issues and AER considerations

As noted in chapter 3, the AER identified a minor error in SP AusNet's revised roll-forward calculation which, when corrected, results in a \$0.4m increase in the value of its opening RAB.

The AER notes that SP AusNet has accepted the AER's draft decision in relation to the amendments to its depreciation schedule. These amendments form part of this final decision.

8.6.1 Forecast capital expenditure

As explained in chapter 4, the AER has provided SP AusNet with a net forecast capex allowance of \$769.64m (\$2007-08, as incurred) for the next regulatory control period. In accordance with the PTRM's timing assumptions, which provide for a half year return on capex before it is rolled into the RAB, this increases to a nominal roll in value of \$874.40m.

8.6.2 Weighted average cost of capital

The AER has applied the nominal vanilla weighted average cost of capital (WACC) determined in chapter 5 of this decision to SP AusNet's opening RAB for each year of the regulatory control period to determine the return on capital building block amount. The nominal vanilla WACC of 9.76% is based on a post-tax nominal return on equity of 12.09% and a pre-tax nominal return on debt of 8.20%.

This WACC is significantly higher than that used in SP AusNet's initial and revised proposal (i.e. 8.85%), which was provided for indicative purposes only, and was based on financial data from late 2006 and early 2007. Since this time, the cost of debt has increased significantly, reflecting prevailing conditions in debt markets and the general economy.

8.6.3 Operating and maintenance expenditure

The AER has determined that SP AusNet should recover a real opex allowance of \$979.29m (\$2007-08) during the forthcoming regulatory control period. This includes allowances for easement land tax (\$520.85m), debt raising costs (\$6.64m) and rebates (\$16.74m), and is discussed further in chapter 6.

8.6.4 Estimated taxes payable

Tax estimates relate to SP AusNet's regulated activities only. The AER has modelled SP AusNet's income tax payable during the forthcoming regulatory control period, based on its tax depreciation and expense profiles, and a statutory income tax rate of 30% for the period. Table 8.3 includes the AER's estimate of SP AusNet's tax payments.

8.6.5 Efficiency glide-path amounts

The AER notes the minor revision to SP AusNet's glide path amounts resulting from changes to its base opex calculation. This has resulted in an increase in the glide path allowance but with a corresponding reduction in SP AusNet's opex forecasts to reflect the ongoing savings associated with the NW contract.

The AER's first proposed EBSS did not provide for any values to be specified as part of revenue determinations. Accordingly the AER has not made any determination under cl. 6A.4.2(a)(6) for SP AusNet in the transmission determination for the 2008-14 regulatory control period.

8.7 AER's conclusion

In accordance with cl. 6A.14.3(b) the AER does not approve SP AusNet's proposed total revenue cap and MAR as a result of the various changes to forecast amounts outlined in chapters 2 to 7 of this decision.

Pursuant to cl. 6A.4.2(a), the AER has determined SP AusNet's annual building block revenue requirement, estimated total revenue cap and indicative MAR for each year of the regulatory control period as shown in table 8.3. The method of calculating SP AusNet's MAR involves an inflation adjustment that will be calculated after the publication of this decision, as outlined in attachment 1.1.

Table 8.3: AER's final decision – building block calculation and expected MAR (\$m, nominal)

Year ending 31 March	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Return on capital	213.84	220.79	226.82	234.81	243.47	250.10
Economic depreciation	52.15	59.40	65.23	70.70	75.47	69.50
Opex (incl. easement land tax)	153.86	167.44	171.23	186.01	189.65	206.13
Glide-path	8.66	7.07	5.47	3.74	1.92	-
Tax liability	15.69	16.29	16.73	16.92	17.32	16.10
Building block requirement	444.20	470.98	485.48	512.19	527.82	541.82
MAR	453.35	469.80	486.86	504.53	522.84	541.82

Source: AER

Under cl. 6A.6.8(c)(2) the AER is required to determine X factors such that the MAR and building block requirement in the final year are as close as reasonably possible. In making this determination the AER has considered the need to ensure that SP AusNet's revenues are aligned to its costs over the period, as well as the resulting impact of X factors on the prices faced by consumers.

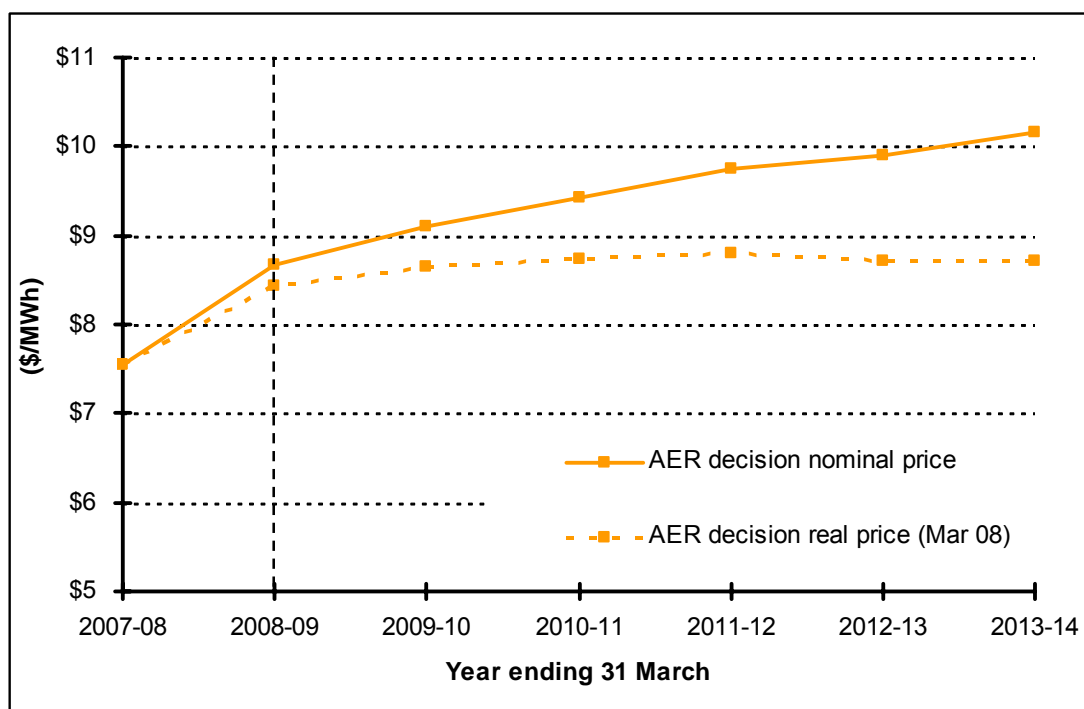
As per general regulatory practice the AER has determined a different X factor in the first year of the regulatory control period to account for the increase in SP AusNet's revenue requirements from 2007-08 to 2008-09. Using an X factor of -12.55% in 2008-09 and of -1.01% in subsequent years results in the expected MAR and building block requirement in the final year of the regulatory control period being equal. They also result in the expected MAR and building block requirements being equal in net present value terms for the period, as required by cl. 6A.6.8(c)(1).

Given that transmission contributes a relatively small component of end use prices for most customers, the AER does not consider the increase in the MAR in 2008-09, which is expected to produce a real price increase for small end users in the order of

less than 1%, to be unreasonable.²³⁷ For larger users, the expected real price increase in 2008-09 is estimated to be less than 3.0%.²³⁸ The initial price increase resulting from this determination may be offset by the treatment of the substantial accumulated surplus held by VENCORP. The AER proposed in its draft decision for VENCORP that this surplus (approximately \$25.1m) would be passed back to Victorian electricity users in 2008-09.²³⁹ For the remaining years of SP AusNet’s determination, an X factor of -1.01% from 2009-10 to 2013-14 is expected to have a negligible real impact on prices faced by all users.

In terms of a nominal per MWh transmission “price”, the expected MAR equates to \$7.54 in 2007-08, increasing by an average of 5.08% per year to \$10.15 in 2013-14. In real terms, the expected MAR per MWh resulting from this final decision increases at an average annual rate of 2.42% over the period. The real and nominal transmission price paths implied by the AER’s final decision are illustrated in figure 8.1.

Figure 8.1 AER’s final decision – implied transmission price path from 2007-08 to 2013-14 (\$/MWh)



Source: AER.

The similarities between the forecast revenues resulting from the AER’s final decision and those in SP AusNet’s revised proposal reflect the following offsetting factors:

- the reductions made by the AER to SP AusNet’s proposed allowances for capex and opex

²³⁷ Assuming an annual electricity bill of \$1 200, of which 7% is attributed to transmission costs.

²³⁸ Assuming an annual electricity bill of \$10.0m, of which around 20-25% is attributed to transmission costs.

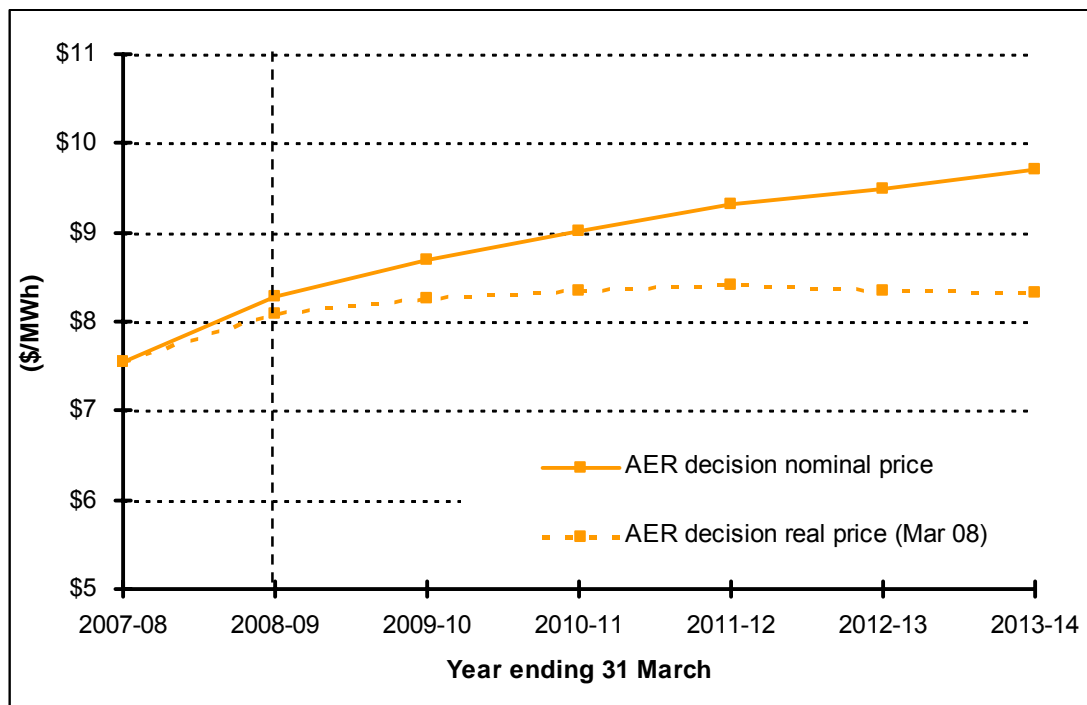
²³⁹ AER, *Draft Decision VENCORP transmission determination 2008-09 to 2013-14*, November 2007, p. 19

- the increase in the WACC determined by the AER (from that which SP AusNet included in its revised proposal for purely indicative purposes), reflecting, in particular, the significant increase in the cost of debt.

The AER notes comments made by the EUCV regarding the significant price increases resulting from SP AusNet’s proposal. The AER notes that increases in SP AusNet’s cost of capital are reflective of the higher cost of borrowing which currently prevails, and would be faced by a benchmark TNSP. Movements in the cost of capital are largely uncontrollable and the AER has determined SP AusNet’s WACC according to the prescribed methodology set out in the NER.

If the effects of changes in the risk free rate and debt risk premium are removed (i.e. valued at the time SP AusNet submitted its original proposal), SP AusNet’s total revenue cap would have been \$127.9m less, at \$2 851.28m. The per MWh price of the MAR would have increased at a nominal rate of 4.31% per year, or 1.68% in real terms. The price paths under this scenario are illustrated in figure 8.2 below.

Figure 8.2 Implied transmission price path (based on WACC as at Feb 2007) from 2007-08 to 2013-14 (\$/MWh)



Source: AER.

Table 8.4 compares the expected MAR for each year resulting from SP AusNet revised proposal and significant increases to these amounts that result only from recent changes to the risk free rate and cost of debt.

Table 8.4: MAR under SP AusNet's revised proposal and incorporating updated WACC parameters (\$m, nominal)

Year ending 31 March	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's revised proposal	419.90	449.06	480.25	513.60	549.28	587.43	2999.51
SP AusNet's revised proposal with updated WACC	425.44	460.99	499.51	541.25	586.48	635.49	3149.15
difference	5.54	11.93	19.26	27.65	37.20	48.06	149.64

Source: SP AusNet PTRM submitted 12 October 2007 with amendments by the AER.

9 Negotiating framework

9.1 Introduction

The AER's transmission determination for SP AusNet must include a determination relating to SP AusNet's negotiating framework.

The negotiating framework specifies the minimum procedure that a TNSP must follow when negotiating the terms and conditions of access with an applicant that seeks to receive a negotiated transmission service. Where an access dispute occurs a commercial arbitrator must have regard to the negotiating framework.

There are three types of negotiated transmission services that a service applicant may request and negotiate with a TNSP. These services include:

- connection services (which might include entry, exit and TNSP to MNSP connection services)
- use of system services supposed by the shared transmission network that exceed or are below the networks specified performance standard under any legislation of a participating jurisdiction and
- use of system services relating to augmentation or extension for loads of the transmission network²⁴⁰.

The negotiating framework only relates to negotiated services. The pricing of prescribed transmission services is covered by the pricing methodology discussed in chapter 11 of this final decision.

9.2 AER's draft decision

In its draft decision, the AER assessed SP AusNet's proposed negotiating framework against the minimum requirements contained in cl. 6A.9.5(c) of the NER.

The AER determined that SP AusNet's proposed negotiating framework was, in a number of respects, not compliant with the NER. The AER's draft decision specified a number of changes required before the AER would approve the proposed framework.

The changes required by the AER were the minimum changes required to ensure compliance with cl. 6A.9.5(c) of the NER.

9.3 SP AusNet's revised proposal

SP AusNet's revised proposal includes a revised proposed negotiating framework that implements the amendments required in the AER's draft decision in full and without further amendment.

²⁴⁰ NER, Definition "Negotiated Transmission Service" Chapter 10

9.4 Submissions

The AER received no submissions in response to SP AusNet's revised proposed negotiating framework.

9.5 Regulatory requirements

In its final decision, the AER must, under cl 6A.14.3 (f), approve SP AusNet's revised proposed negotiating framework if it meets the requirements set out in cl. 6A.9.5 (c). If SP AusNet's revised proposed negotiating framework contains the changes required by the AER in its draft decision, or otherwise adequately addresses the matters that prompted the AER to require those changes, then except to the extent that -

- either or both the following apply:
 - i) other changes have been made in the revised proposed negotiating framework, or
 - ii) the information contained in or accompanying the revised proposed negotiating framework differs from that contained in or accompanying the previous proposed negotiating framework, and
- the changes would justify the AER, in its final decision, in refusing to approve the revised proposed negotiating framework,

the AER must approve the revised proposed negotiating framework²⁴¹.

9.6 Issues and AER considerations

SP AusNet has made the amendments required by the AER in its draft decision of 31 August 2007.

SP AusNet has made no other changes to its revised proposed negotiating framework. The information contained in and accompanying the framework does not differ in any respect from that provided in or accompanying the previous framework.

9.7 AER's conclusion

SP AusNet's revised proposed negotiating framework contains, without further amendment, the changes required by the AER in its draft decision. The AER therefore approves the revised proposed negotiating framework in accordance with cl.6A.14.3 (h) of the NER.

The AER has determined that the negotiating framework set out in attachment 1.2 to this final decision will apply to SP AusNet for the duration of the forthcoming regulatory control period (1 April 2008 – 31 March 2014). SP AusNet may seek to amend or replace its negotiating framework at the time it submits its revenue proposal for the regulatory control period commencing 1 April 2014, by submitting a new proposed negotiating framework in accordance with the NER as in force at that time.

²⁴¹ NER, cl. 6A.14.3 (h)

10 Negotiated transmission service criteria

10.1 Introduction

The NER require the AER to include in a transmission determination the negotiated transmission service criteria (negotiating criteria) that will apply to the TNSP for the forthcoming regulatory control period.²⁴² The negotiating criteria are to be used by the TNSP in negotiating the terms and conditions, including price, and any access charges for accessing a negotiated transmission service. In the event of a dispute in relation to the terms and conditions of access, or any charges to be paid to the TNSP, a commercial arbitrator must consider the negotiating criteria when making a decision under part K of the NER.

TNSPs are not required to submit negotiating criteria to the AER with their revenue proposals. The AER must determine the negotiating criteria in accordance with the NER.

In Victoria, the functions relevant to the provision of negotiated transmission services are shared between SP AusNet and VENCORP, such that VENCORP has primary responsibility for the provision of use of system or shared network services. The AER recognises that this may mean that the application of individual negotiated transmission services principles to SP AusNet, as given effect in the negotiated transmission service criteria determined by the AER, may be limited.

10.2 Regulatory requirements

Clause 6A.9.4(a) states that the AER's determination must set out the negotiated transmission service criteria that will be applied:

- by the TNSP in negotiating the terms and conditions of access for negotiated transmission services
- by a commercial arbitrator in resolving any dispute between a TNSP and a person wishing to receive a negotiated transmission service

The negotiating criteria must give effect to, and be consistent with, the negotiated transmission service principles set out in cl. 6A.9.1.

10.3 AER's draft decision

In accordance with cl. 6A.11.3, the AER published the proposed negotiating criteria for SP AusNet for the forthcoming regulatory control period for consultation prior to the release its draft decision.

In its draft decision, the AER determined negotiating criteria that gave effect to and were consistent with the negotiated transmission service principles set out in cl. 6A.9.1.

²⁴² NER, cl. 6A.2.2(3)

10.4 SP AusNet's revised proposal

SP AusNet has not sought to address the negotiating criteria in its revised proposal.

10.5 Submissions

The AER received no submissions in relation to the proposed negotiating criteria.

10.6 Issues and AER considerations

The AER has not altered the negotiating criteria from its draft to its final decision.

10.7 AER's conclusion

The negotiated transmission service criteria set out in attachment 1.3 of this final decision will apply to SP AusNet for the forthcoming regulatory control period (1 April 2008 – 31 March 2014).

11 Pricing methodology

11.1 Introduction

The AER's transmission determination for SP AusNet must include a determination relating to SP AusNet's pricing methodology.

SP AusNet undertakes three roles in relation to transmission pricing:

3. the allocation of its aggregate annual revenue requirement (AARR) to each of the categories of prescribed transmission services
4. the allocation of its aggregate service revenue requirement (ASRR) for prescribed entry and prescribed exit services to transmission network connection points and
5. the pricing of connection services (prescribed entry and exit services).

The AER's determination in relation to SP AusNet's pricing methodology for the forthcoming regulatory control period will relate to prescribed transmission services only. The pricing of negotiated transmission services is governed by the negotiating framework and negotiated transmission services criteria discussed in chapters 9 and 10 of this final decision, and the provisions of rule 6A.9.

11.2 AER's draft decision

In its draft decision the AER assessed SP AusNet's proposed pricing methodology against the minimum requirements in cl. 6A.24.1(b) of the NER.

The AER determined that SP AusNet's proposed pricing methodology was, in a number of respects, not compliant with the NER. In accordance with cl. 6A.12.1(e) of the NER, the AER's draft decision specified the changes required and matters to be addressed before the AER would approve the proposed pricing methodology.

The changes required by the AER were the minimum changes to ensure compliance with cl. 6A.24.1(b) of the NER.

11.3 SP AusNet's revised proposal

SP AusNet's revised proposal includes a revised proposed pricing methodology that implements the amendments required in the AER's draft decision in full and without further amendment.

SP AusNet's revised proposal also includes extra information where further drafting was required by the AER.

11.4 Submissions

The AER received one submission in relation to pricing methodology, from the Energy Users Coalition of Victoria (the EUCV). In its submission, the EUCV notes that SP AusNet will not be subject to the new pricing guidelines, but rather the interim

ones. The EUCV consider that as SP AusNet is aware of the new guidelines, it should be given the opportunity to implement them.²⁴³ The EUCV also state that

The SPA regulatory period will be for six years... and therefore there should be an effort made to incorporate the new guidelines due to the long period between resets. It would be a pity if the new guidelines were not implemented when there is ample opportunity to do so within the time frames permitted.²⁴⁴

11.5 Regulatory requirements

A transmission determination made by the AER pursuant to cl. 6A.2.1 must include a determination relating to the TNSP's pricing methodology. The pricing methodology must:

6. give effect to and be consistent with the Pricing Principles for Prescribed Transmission Services and
7. comply with the requirements of, and contain or be accompanied by such information as is required by, the pricing methodology guidelines made for that purpose under rule 6A.25.

The AER's draft decision was to refuse to approve SP AusNet's proposed pricing methodology. As required by cl. 6A.12.1 (e) of the NER, the AER included in its draft decision details of the changes required before the AER would approve the proposed pricing methodology.

The transitional provisions in chapter 11 of the NER²⁴⁵ provide that SP AusNet's proposed pricing methodology is to be assessed against the AER's agreed interim requirements, released 16 February 2007. Transmission determination processes for ElectraNet and VENCORP have permitted those TNSPs, by election, to submit a revised proposed pricing methodology under the final pricing guidelines published on 29 October 2007. However, the timing of the AER's final decision and transmission determination for SP AusNet is such that submission of a revised proposed methodology following the release of the final guidelines and public consultation on that methodology was not possible. SP AusNet's revised proposed pricing methodology and the AER's final decision have therefore been made in accordance with the agreed interim requirements.

If SP AusNet's revised proposed pricing methodology contains the changes made by the AER in its draft decision, or otherwise adequately addresses the matters that prompted the AER to require those changes, then except to the extent that:

- either or both of the following apply:
 - i) other changes have been made in the revised proposed pricing methodology; or

²⁴³ *Victorian Electricity Transmission Revenue Reset – AER Draft Determination - A response by the Energy Users Coalition of Victoria*, November 2007, p. 45

²⁴⁴ *ibid.*

²⁴⁵ NER, cl. 11.8.4

- ii) the information contained in or accompanying the revised proposed pricing methodology differs from that contained in or accompanying the previous proposed pricing methodology, and
 - the changes would justify the AER, in its final decision, in refusing to approve the revised proposed pricing methodology

the AER must approve the revised pricing methodology.²⁴⁶

11.6 Issues and AER's considerations

SP AusNet has made the amendments required by the AER in its draft decision of 31 August 2007.

SP AusNet has made no further changes to its revised pricing methodology, other than those specified by the AER. The information contained in and accompanying the pricing methodology does not differ in any respect from that provided in or accompanying the previous pricing methodology.

The AER has considered the EUCV's submission and is of the opinion that due to time constraints, the application of the new guidelines to this revenue reset was not possible. The AER also considered that an assessment of SP AusNet's pricing methodology under the interim guidelines is adequate for the purposes of this reset.

In its draft decision, the AER required further drafting in two areas of SP AusNet's pricing methodology. These are set out below.

Switchgear

In accordance with cl.6A.23.2 (c)(1), each portion of the AARR must be allocated. In its initial proposal, SP AusNet had erroneously classified some switchgear assets as prescribed entry/exit services, and subsequently had applied a shallow asset connection policy to determining the allocation of some switchgear assets. The AER required SP AusNet to further specify which switchgear assets were allocated as prescribed entry/exit services, so that only the correct assets would be classified under a shallow asset connection policy. In its revised proposal, SP AusNet allocated switchgear assets as follows:

Switchgear is assigned to *prescribed entry services* and *prescribed exit services* only when those assets provide *supply* to *Network Users* connected at the *connection point*. The remainder is assigned to *prescribed TUOS services*.²⁴⁷

Schedule 6.2 of the old NER states that a shallow asset connection policy can only be applied to those prescribed entry/exit assets which provide supply to only those Transmission Network Users connected at the connection point.

The AER considers that this amendment renders the allocation of switchgear assets consistent with schedule 6.2.

²⁴⁶ NER cl. 6A.14.3 (h)

²⁴⁷ SP AusNet Revised Proposed Pricing Methodology 2008-09 -2013-14, p. 8

Lines

The AER, in its draft decision, also required reasons to be given for the allocation of two lines into the prescribed exit services category. SP AusNet's revised proposed pricing methodology now states:

The line assets listed above are allocated to prescribed exit services, as each of the above lines is radial and connects a particular user to the transmission network.²⁴⁸

Schedule 6.2 provides that lines should be allocated to prescribed TUOS services, unless the line connecting a particular user is radial, in which case the line can be allocated as a prescribed entry/exit service.

The AER considers that this amendment renders the allocation of the relevant lines assets consistent with schedule 6.2.

11.7 AER's conclusion

SP AusNet's revised proposed pricing methodology contains, without further amendment, the changes required by the AER in its draft decision. The AER therefore approves revised proposed pricing methodology.

The AER has determined that the pricing methodology set out in attachment 1.4 of this final decision will apply to SP AusNet for the duration of the forthcoming regulatory control period (1 April 2008 – 31 March 2014). SP AusNet may seek to amend or replace its pricing methodology at the time it submits its revenue proposal for the regulatory period commencing 1 April 2014, by submitting a new proposed pricing methodology framework in accordance with the NER as in force at that time.

²⁴⁸ *ibid.*, p.8.

Appendix A: Forecast Capex

This section sets out the AER's detailed consideration of SP AusNet's revised proposal on the following forecast capex projects:

- Refurbishment of Hazelwood Power Station Switchyard (HWPS)
- Redevelopment of Richmond Terminal Station (RTS)
- Transformer replacements
- Replacement of station and control centre SCADA
- Response capability for undefined works
- Replacement of post-type current transformers
- Vehicle replacements
- Inventory
- Replacement of 500kV CBs
- Replacement of 66kV CBs at Morwell and Horsham
- Redevelopment of Brooklyn Terminal Station (BLTS)
- Refurbishment of Thomastown Terminal Station (TTS)
- Refurbishment of Glenrowan Terminal Station (GNTS)
- Refurbishment of Keilor Terminal Station (KTS)
- Refurbishment of Geelong Terminal Station (GTS)

A.1 Refurbishment of Hazelwood Power Station Switchyard (HWPS)

A.1.1 Draft decision

In its draft decision the AER was satisfied that SP AusNet had demonstrated a clear need to replace 24 bulk-oil circuit breakers (CBs) as part of the HWPS project, given that the assets had been assigned a relatively high risk of failure in its CB risk model.

However on the basis of PB's advice, the AER was not satisfied that SP AusNet's proposed capex on a number of ancillary items included in the cost estimate for HWPS reasonably reflected prudent and efficient capex required to meet the capex objectives over the forthcoming regulatory control period. The items included:

- replacement of pin and cap insulators
- replacement of the line-side disconnectors
- replacement of associated CTs and CVTs
- surge arrestors.

The AER therefore rejected this element of SP AusNet’s forecast capex proposal. In substituting a capex allowance for the HWPS project, the AER made a downward adjustment of \$4.0m to remove the cost of the items listed above. The AER also removed \$0.33m of forecast control building costs, which were found to be in excess of PB’s efficient benchmark unit costs.

The AER made a further downward adjustment of \$1.7m to remove SP AusNet’s proposed contingency allowance for the HWPS project. The treatment of this allowance in the AER’s draft decision and SP AusNet’s revised proposal is set out separately in section 4.6.2.1.

Table A.1: AER’s draft decision – Refurbishment of HWPS switchyard (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet’s original proposal**	4.90	11.70	8.60	3.40	5.60	1.50	35.70
AER’s draft decision	4.62	10.29	7.52	2.32	4.52	0.42	29.67
AER’s adjustment	-0.28	-1.41	-1.08	-1.08	-1.08	-1.08	-6.03

Table source: AER draft decision, 31 August 2007, pp.104, 272.

* Capex as incurred

** In its original proposal submitted on 28 February 2007, SP AusNet proposed capex of \$36.60m for this project. This was later updated by SP AusNet to \$35.70m.

A.1.2 Revised proposal

In its revised proposal SP AusNet states that much of the ancillary equipment for which a capex allowance was excluded in the AER’s draft decision (eg. pin & cap insulators, line side disconnectors, CVTs, surge arrestors) exceeds 40 years of age and is showing increased signs of age-based deterioration.

SP AusNet has presented economic analysis to support its original proposal to replace the ancillary equipment in conjunction with the 220kV CB replacements at HWPS. The analysis focuses on the optimal timing for replacement of the equipment, given the assumed incremental costs associated with deferred replacement on a stand-alone basis compared with upfront replacement as part of the integrated project at HWPS. SP AusNet concludes from its analysis that in order to reach the ‘break-even’ point – where the present value of deferred replacement costs equates to that of upfront replacement costs – the assets must remain in service for a further 20 to 40 years. Given the current age and condition of the equipment in question, SP AusNet submits that upfront replacement as part of the wider HWPS project is the least-cost option.²⁴⁹

In relation to the control building costs at HWPS, SP AusNet has submitted a revised cost estimate of \$1.38m based on a site-specific external quote. This represents an increase of \$0.69m (100%) over the control building cost estimate submitted with SP AusNet’s original proposal.

Finally, SP AusNet submits that a 5% contingency allowance (\$1.7m) is reasonable and prudent for the HWPS project given its technical complexity and six-year

²⁴⁹ SP AusNet, *HWPS JW420 CB replacement – ancillary equipment*, 23 August 2007, p.20.

duration. In response to the AER's draft decision SP AusNet engaged consultants Evans & Peck (E&P) to identify and quantify risks associated with each of its station rebuild projects and recommend an appropriate contingency allowance.²⁵⁰ SP AusNet states that the E&P report supports its proposed contingency allowance for each of the seven station rebuild projects forecast for the forthcoming regulatory control period. This argument is considered separately by the AER in section 4.6.2.1.

Overall, SP AusNet's revised proposal reinstates its original proposed scope of works for the HWPS project, at a higher total cost of \$36.39m.²⁵¹

A.1.3 Consultant's advice

PB examined the information submitted by SP AusNet in support of its revised proposal for the HWPS project. PB considers that some of the assumptions underlying SP AusNet's economic analysis are subjective and may overstate the break-even period for replacement of the ancillary equipment. However despite this PB states that:

...accounting for some sensitivity analysis concerning the replacement costs and possibilities of capturing economies of scale, PB is satisfied that the break-even period will be greater than 10 years and therefore that the inclusion of all the assets for replacement as part of the wider project is an efficient and prudent outcome.²⁵²

In considering the \$1.40m proposed for control building costs at HWPS, PB examined the external quotation provided by SP AusNet and revisited the scope specification of its benchmark control room (valued at \$0.3m). PB makes the following observations:

- After excluding a number of cost items considered inappropriate, SP AusNet's cost estimate is reduced from \$1.40m to \$0.92m.
- SP AusNet's proposed control building has a floor area of 335m², significantly greater than the floor area of PB's benchmark control building of 250m².

PB concludes that the increased floor space largely explains the difference in cost between SP AusNet's proposed control building at HWPS and PB's benchmark control building. On this basis, PB accepts SP AusNet's original control building costs of \$0.69m as a reasonable and efficient allowance given the defined scope. PB recommends removing the additional \$0.69m of control building costs included in SP AusNet's revised cost estimate.

PB recommends inclusion of a total capex allowance of \$35.70m for the HWPS project.²⁵³

A.1.4 AER's consideration

SP AusNet has submitted a substantial amount of additional information to support its capex estimate for the HWPS project.

²⁵⁰ Evans & Peck, *SP AusNet capital works program – risk model report*, 11 October 2007.

²⁵¹ SP AusNet, *HWPS JW420 CB replacement – ancillary equipment*, 23 August 2007, p.5.

²⁵² PB Strategic Consulting, *SP AusNet revenue reset - Advice on revised revenue proposal*, 8 January 2008, p.18.

²⁵³ *ibid.*, p.19.

After examining the information provided, the AER agrees with PB's view that there are a number of subjective assumptions included in SP AusNet's analysis that appear to overstate the 'break-even' period and disadvantage the deferral option. In particular, SP AusNet has assumed that there is a significant cost penalty associated with targeted replacement of the ancillary equipment independently of the integrated HWPS project, as shown in table A.2.²⁵⁴

Table A.2: SP AusNet's revised proposal – cost penalty for deferral of ancillary equipment

Asset	Cost to replace with CB works	Cost to replace as an independent, deferred project	Cost penalty for deferral
Pin and cap insulators	\$4,500/set	\$54,600/set	1113%
Disconnectors	\$55,000/set	\$255,000/set	364%
CVTs	\$13,000/set	\$44,800/set	245%

Table sources: SP AusNet, *HWPS JW420 CB replacement – ancillary equipment*, 23 August 2007, p.20; AER analysis.

The AER agrees in principle that there are likely to be efficiencies in undertaking replacement of this type of equipment as part of an integrated station project compared with targeted replacement. However cost penalties of the magnitude suggested by SP AusNet appear excessive.

Despite these reservations with SP AusNet's input assumptions, the AER agrees with PB that the 'break-even' point is not likely to fall below 10 years even with sensitivity analysis. Based on the additional information provided by SP AusNet on the condition of this equipment, the AER accepts PB's recommendation that replacement as part of the integrated HWPS project appears to represent a prudent and efficient alternative to deferral.

In relation to the control building costs, the AER accepts PB's recommendation to remove an allowance of \$0.69m on the basis that PB's benchmark control building costs (adjusted for the difference in floor space) reasonably reflect efficient and prudent costs in accordance with the capex criteria.

A.1.5 Conclusion

Having considered the new information included in and accompanying SP AusNet's revised proposal,²⁵⁵ and in light of the analysis conducted by PB,²⁵⁶ the AER accepts PB's recommendations with respect to SP AusNet's revised proposal for the HWPS project. The AER is not satisfied that SP AusNet's revised forecast of \$1.38m for control building costs at HWPS reasonably reflects prudent and efficient capex required to meet the capex objectives at cl. 6A.6.7(a) of the NER, and has substituted a revised forecast of \$0.69m. In making this assessment the AER has taken into

²⁵⁴ SP AusNet has assumed that: the cost of integrated replacement (i.e. as part of the wider HWPS project) reflects the supply of materials only; and the cost to replace independent of the station project reflects the replacement of a single unit/set at a time.

²⁵⁵ NER, cl. 6A.6.7(e)(1)

²⁵⁶ NER, cl. 6A.6.7(e)(3)

account benchmark capex that would be incurred by an efficient TNSP over the forthcoming regulatory control period.²⁵⁷

The AER has included a contingency allowance of \$1.58m in the capex allowance for the HWPS project, which represents a downward adjustment of \$0.12m from SP AusNet’s revised proposal. The details of the E&P analysis and the AER’s conclusions regarding SP AusNet’s proposed contingency allowance for station rebuild projects are contained at section 4.6.2.1 of this final decision.

On this basis the AER has rejected the forecast of required capex in SP AusNet’s revised revenue proposal. The AER’s approved substitute allowance of \$35.58m for the HWPS project represents a downward adjustment of \$0.81m.

Table A.3: AER’s final decision – Refurbishment of HWPS switchyard (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER’s draft decision	4.62	10.29	7.52	2.32	4.52	0.42	29.67
SP AusNet’s revised proposal**	4.90	12.39	8.60	3.40	5.60	1.50	36.39
AER’s final decision	4.89	11.64	8.58	3.39	5.59	1.50	35.58
AER’s adjustment	-0.01	-0.75	-0.02	-0.01	-0.01	0.00	-0.81

Table sources: AER draft decision, 31 August 2007, pp.104, 272; SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.112.

* Capex as incurred.

** In the absence of an annual break-down in SP AusNet’s revised proposal the AER has assumed that all control building costs for the HWPS project are to be incurred in 2009-10.

A.2 Redevelopment of Richmond Terminal Station (RTS)

A.2.1 Draft decision

In its draft decision the AER was not satisfied that all the elements of SP AusNet’s proposed scope of works at RTS reasonably reflected prudent and efficient capex required to meet the capex objectives over the forthcoming regulatory control period. The AER rejected SP AusNet’s proposed capex allowance for this project, and approved a substitute allowance which excluded the following elements of SP AusNet’s forecast:

- replacement of three 220/66 kV transformers
- redevelopment of the 66kV switchyard
- incremental cost of reconfiguring the 220kV switchyard.

The AER considered that SP AusNet’s inclusion of a \$2.0m capex allowance to refurbish the two worst condition units at RTS (as part of another proposed forecast capex project) would negate the need to replace the three 220/66kV transformers over the forthcoming regulatory control period.

²⁵⁷ NER, cl. 6A.6.7(e)(4)

On the basis of the information available the AER was not satisfied that there was a clear technical or economic justification for the redevelopment of the entire 66kV switchyard over the forthcoming regulatory control period. The AER considered that SP AusNet should consider implementing a number of cost effective remedial measures suggested by its consultants GHD to address the subsidence issues identified at RTS.

The AER rejected SP AusNet's proposed allowance for the reconfiguration of the 220kV switchyard into a twelve CB breaker-and-a-half arrangement, and accepted PB's advice that an eight CB ring bus arrangement appeared to represent a prudent and efficient alternative at RTS.

The combined effect of these three adjustments resulted in a total downward adjustment of \$51.7m to SP AusNet's proposed forecast capex allowance for the RTS project.

The AER made a further downward adjustment of \$3.1m to remove the remainder of SP AusNet's proposed contingency allowance for the RTS project (see section 4.6.2.1).²⁵⁸

In total, the capex estimate substituted by the AER represented a total downward adjustment of \$54.81m to SP AusNet's proposed forecast capex for this project.

Table A.4: AER's draft decision – Redevelopment of RTS (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's original proposal	0.00	0.00	0.00	7.20	44.80	37.70	89.70
AER's draft decision	0.00	0.00	0.00	0.00	18.22	16.66	34.89
AER's adjustment	0.00	0.00	0.00	-7.20	-26.58	-21.04	-54.81

Table source: AER draft decision, 31 August 2007, pp.104, 278.

* Capex as incurred

A.2.2 Revised proposal

In its revised proposal, SP AusNet has presented a significant volume of new and revised information to support its proposed scope of works for the RTS redevelopment project. SP AusNet's revised proposal for the RTS project differs from its original proposal in the following respects:

- The total cost of the integrated RTS redevelopment project has increased from \$89.7m to \$110.8m based largely on a revised cost estimate from consultants Connell Wagner.²⁵⁹

²⁵⁸ In its draft decision, the combined effect of the AER's adjustments to SP AusNet's proposed capex allowance for the RTS project removed the total contingency allowance of \$6.1m proposed for the project.

²⁵⁹ Connell Wagner, *Redevelopment Plan – Richmond Terminal Station (RTS), Rev 2*, October 2007.

The final cost estimate for the RTS redevelopment provided by Connell Wagner in its report was \$103m. SP AusNet has advised that its proposed capex for RTS is actually \$110.8m after incorporation

- The 22kV switchyard redevelopment has been deferred from the current to the forthcoming regulatory control period so as to locate it within the proposed 220kV GIS building. SP AusNet proposes that \$5.6m be included in its forecast capex allowance for this purpose (with an equivalent downward adjustment to its past capex allowance).
- In order to integrate the proposed 22kV works, the timing profile of SP AusNet's proposed capex for the RTS redevelopment has changed, with \$16.7m brought forward from 2012-14 to 2008-10.

SP AusNet's revised proposal for the RTS redevelopment is for a fully integrated project, including the redevelopment of the 220kV, 66kV and 22kV switchyards as well as the replacement of the 220/66kV transformers, at a revised total cost of \$110.8m (including a proposed contingency allowance of \$6.1m).²⁶⁰ SP AusNet states that, based on an economic assessment provided by consultants Connell Wagner, its proposal for a fully integrated RTS redevelopment project has a lower total cost and lower NPV than the deferred replacement option approved by the AER in its draft decision.²⁶¹

Replacement of 220/66kV transformers

SP AusNet advises that the RTS B1 transformer is one of the worst condition units in its entire fleet (ranked 56 out of a possible ranking of 63), and is therefore among its highest priorities for replacement.²⁶² In addition, SP AusNet challenges the basis for the AER's draft decision to defer replacement of the RTS transformers:

The separate proposal (Opex) to restore some reliability through completion of some remedial work (as described separately) on the RTS B1 and B2 transformers during the next regulatory period is a short term measure, aimed at reducing the chance that this transformer will fail before its planned replacement, under the proposed station redevelopment program at RTS.²⁶³

Redevelopment of 66kV switchyard

SP AusNet has provided a further report by consultants GHD indicating significant steel loss due to corrosion of the steel piles supporting the 66kV switchyard.²⁶⁴ In its report GHD recommends a number of remedial actions to address the subsidence and related issues identified through its investigations. SP AusNet states that the remedial measures suggested by GHD:

- should be considered short term only, and
- are impractical given the need to maintain the continuous and secure operation of the assets within the switchyard.

of the 22kV switchyard works and its proposed contingency allowance (SP AusNet, email to AER, 12 December 2007).

²⁶⁰ The AER notes that SP AusNet's revised cost information templates contain a proposed capex allowance for the RTS project of \$127.2m. The unexplained portion of this proposed allowance is discussed below in the AER's considerations.

²⁶¹ SP AusNet, *Richmond terminal station redevelopment – revised revenue proposal*, p.7.

²⁶² SP AusNet, *Transformer Replacement Program – Response to AER Draft Decision Report*, 17 September 2007, p.11.

²⁶³ *ibid.*, p.19.

²⁶⁴ GHD, *Richmond Terminal Station: 66kV Switch Yard – Steel Pile and Pavement Investigation*, Draft report, October 2007.

On this basis SP AusNet submits that:

SP AusNet believes that our proposal for the redevelopment of the 66kV switchyard in an alternative location presents the most viable long term solution. Relocation of the 66kV switchyard should not be deferred as there is no viable solution for the site civil issues described.²⁶⁵

Reconfiguration of the 220kV switchyard

SP AusNet has provided further information to support its proposed reconfiguration of the 220kV switchyard into a ‘breaker-and-a-half’ arrangement. SP AusNet submits that the ring bus arrangement recommended by PB and accepted by the AER in its draft decision is not appropriate for a large terminal station such as RTS.

SP AusNet’s revised proposal reconfigures the 220kV switchyard in a three CB ‘breaker-and-a-half’ arrangement.²⁶⁶

Overall, SP AusNet’s revised proposal for the RTS redevelopment project reinstates its original proposed scope of works (now incorporating the deferred 22kV works), at a total cost of \$110.8m.

Table A.5: SP AusNet’s revised proposal – Redevelopment of RTS (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's original proposal	0.00	0.00	0.00	7.20	44.80	37.70	89.70
AER’s draft decision	0.00	0.00	0.00	0.00	18.22	16.66	34.89
SP AusNet's revised proposal	3.90	9.60	8.20	7.60	44.30	37.20	110.80

Table sources: AER draft decision, 31 August 2007, pp.104, 278; SP AusNet, email to the AER, 12 December 2007.

* Capex as incurred.

A.2.3 Consultant’s advice

PB considers that the new information presented by SP AusNet in its revised proposal supports its proposal for a fully integrated RTS redevelopment project, for the following reasons:

- the condition of the 66 kV civil structures and unmanageable risk presented by not allowing key maintenance vehicles into the yard
- the condition of the 150 MVA B1 transformer, and the likely outcome that its replacement should ideally be a 225 MVA unit, to ensure capacity for future augmentation
- the inconclusive economic assessment that indicates both the integrated development option and the deferred replacement option are reasonable

²⁶⁵ SP AusNet, *Richmond terminal station redevelopment – revised revenue proposal*, p.19.

²⁶⁶ *ibid.*, p.12.

- the nominal reduction in asset failure risk and ongoing operation and maintenance costs associated with the 66 kV replacement (which have not been accounted for in the economic assessment).²⁶⁷

PB considers that SP AusNet's revised proposal to reconfigure the 220kV switchyard into a three CB 'breaker-and-a-half' arrangement (as opposed to its original proposal for four bays) represents a reasonable and efficient design for RTS.

Revised cost estimate

PB has reviewed the detailed cost estimate contained in the Connell Wagner report, focusing on three key areas:

- a \$7.2m increase in the cost of line and cable diversions to the new indoor 220kV switch-room due to the use of underground cabling
- a \$1.7m increase in costs associated with the installation of 66kV fault limiting reactors in place of a bus reclosure scheme
- an allowance of \$3.6m for 220kV cabling between the new 220kV switchgear and the three new 220/66kV transformers.

In the absence of a clear economic justification from SP AusNet, PB is not satisfied of the need for, or the efficiency of, the majority of these cost increases. As a result of this assessment, PB recommends a reduction of \$11.9m to SP AusNet's proposed revised capex allowance for the RTS redevelopment project.²⁶⁸

Revised expenditure profile

PB notes that the basis for SP AusNet advancing \$16.7m of expenditure for RTS from 2012-14 to the start of the forthcoming regulatory control period is to allow the integration of the 22kV works into the wider project. SP AusNet's documentation shows that remedial works were considered feasible to defer the 22kV works at the time capex was proposed at RTS in the current regulatory control period. PB therefore concludes that:

In PB's view, it is likely that when accounting for the advanced expenditure of \$16.7m to enable the 22 kV works to be integrated into the proposed GIS building, then the efficient outcome is expected to be some form of remedial work in the 22 kV yard, followed by a fully integrated redevelopment of the 220 kV, 66 kV and 22 kV switchyards at the end of the next regulatory period.²⁶⁹

On this basis, PB recommends that SP AusNet's original expenditure profile be maintained, where all costs are incurred in the final three years of the forthcoming regulatory control period.

Overall, PB recommends inclusion of a capex allowance of \$91.1m for the RTS redevelopment spread over the years 2011-14.²⁷⁰

²⁶⁷ PB Strategic Consulting, *SP AusNet revenue reset - Advice on revised revenue proposal*, 8 January 2008, p.21.

²⁶⁸ *ibid.*, p.22.

²⁶⁹ *ibid.*, p.22.

²⁷⁰ *ibid.*, p.23. PB's recommended allowance for the RTS project excludes the \$5.6m allowance for the 22kV works carried over from the current regulatory control period.

A.2.4 AER's considerations

As PB has noted, SP AusNet has presented a significant amount of 'material and influential' new information supporting its RTS proposal – information which was not available to the AER at the time of making its draft decision, but which would obviously have usefully informed the AER's previous consideration had it been made available.

The key factors underlying PB's recommendation are the civil integrity issues associated with the 66kV yard, and the updated condition ranking of the 220/66kV transformers. The AER has considered these in turn.

Civil integrity of the 66kV switchyard

The AER notes the recommendations presented by GHD in its report regarding the possible remedial actions available to address subsidence issues within the 66kV switchyard. While the remedial measures suggested by GHD appear relatively cost effective, the AER accepts SP AusNet's advice that they are unlikely to provide a viable long term solution to the risks posed by subsidence within the 66kV switchyard. In addition, the AER agrees with PB that the restrictions on access for maintenance vehicles into the switchyard due to the poor condition of pavement and land on the site represent an 'unmanageable' risk given the operational nature of the site. This would mean opex alternatives for ongoing maintenance in lieu of SP AusNet's proposed capex solution appear infeasible.

On this basis the AER accepts SP AusNet's claim that the redevelopment of the 66kV switchyard is likely to represent the only viable long-term solution to the site civil issues described.

Condition of the 220/66kV transformers

The AER notes SP AusNet's advice in its revised proposal that its originally proposed (separate) capex allowance of \$2.0m for refurbishment of two transformers at RTS over the forthcoming regulatory control period (along with two units at SMTS) only related to short-term remedial measures, and should in fact have appeared in opex. The AER is concerned at the contradictory nature of this new information, given that the original documentation provided by SP AusNet in support of the RTS transformer refurbishments described the nature of the work as a 'general overhaul'.²⁷¹ The AER notes that SP AusNet has reduced its proposed capex allowance for the 'Transformer refurbishment' project by \$0.44m in its revised proposal.²⁷² In the absence of further information regarding the revised scope of works associated with this project, the AER has not made any further adjustments to this element of SP AusNet's forecast.

Notwithstanding these concerns, the AER accepts PB's recommendation that the additional and updated information presented by SP AusNet demonstrates that the asset failure risk associated with the B1 unit at RTS supports its replacement within the forthcoming regulatory control period. The AER also notes PB's advice that

²⁷¹ SP AusNet, *Program for transformer refurbishments*, 21 March 2007, p.5.

²⁷² SP AusNet, *Revised Templates – Cost information lodged 12102007.xls*. The AER notes that SP AusNet has not sought a corresponding adjustment to its opex forecast.

replacement of the three 220/66kV transformers at RTS will release units in relatively good condition for use elsewhere on the network.

Economic assessment

The AER shares PB's view that the economic analysis presented by SP AusNet in support of a fully integrated RTS redevelopment project is inconclusive, and could usefully have considered alternative, more efficient sub-options in some instances.²⁷³ Despite these reservations, the AER accepts PB's recommendation that SP AusNet's integrated RTS redevelopment proposal appears to be a reasonable and prudent approach to addressing the risks identified at the station.

Revised cost estimate

PB has undertaken a thorough review of the revised cost estimate for the RTS redevelopment presented in the Connell Wagner report. In relation to the three adjustments recommended by PB as a result of its review, the AER makes the following observations:

- The AER accepts PB's view that the \$7.2m increase in cost primarily due to the use of underground cabling for line and cable diversions to the new indoor 220kV switch-room is unnecessary and unsubstantiated. The AER understands that these costs were mentioned in the original Connell Wagner report as a potential option, but excluded from the original cost estimate of \$89.7m.
- The AER understands that although the installation of 66kV fault limiting reactors is likely to provide some temporary benefits (i.e. before the fourth transformer is installed at RTS), the incremental benefits of this option over a substitute bus reclosure system are unlikely to offset the \$1.7m of additional capex, especially given the low probability of failure for the newly installed transformers.
- The AER understands that an allowance of \$3.6m for 220kV cabling between the new 220kV switchgear and the three new 220/66kV transformers is based on a significant amount of unnecessary cable. The AER accepts PB's view that, based on engineering drawings included in the Connell Wagner report, \$0.6m represents an appropriate allowance for the length of cabling required.

On this basis, the AER accepts PB's recommendation to reject SP AusNet's revised cost estimate, and to exclude an amount of \$11.9m from SP AusNet's proposed capex allowance for the RTS redevelopment.

The AER notes that the cost templates submitted by SP AusNet with its revised proposal indicate a proposed forecast capex allowance of \$127.2m (as incurred, \$2007-08) for the RTS redevelopment project.²⁷⁴ The AER sought clarification from SP AusNet on the actual amount of capex proposed for the RTS project. SP AusNet advised that an error was made in generating its revised cost templates with respect to RTS, and the correct proposed amount is \$110.8m. On this basis the AER has made a

²⁷³ PB Strategic Consulting, *SP AusNet revenue reset - Advice on revised revenue proposal*, 8 January 2008, pp.20-21.

²⁷⁴ SP AusNet, *SPA Revised Templates – Cost information lodged 12102007.xls*.

further downward adjustment of \$16.4m to remove the unexplained portion of SP AusNet’s proposed forecast capex for the RTS project, as set out in table A.6.

Table A.6: Unexplained capex in SP AusNet’s revised proposal for RTS (\$m, 2007-08)*

SP AusNet’s proposed capex – as presented in its revised cost templates	\$127.19m
SP AusNet’s proposed capex – as advised	\$110.80m
Difference – ‘Unexplained capex’	\$16.39m

Table sources: SP AusNet, *SPA Revised Templates - Cost information lodged 12102007.xls*; SP AusNet, email to the AER, 12 December 2007.

* Capex as incurred

Revised expenditure profile

On the balance of the information provided by SP AusNet, the AER accepts PB’s view that deferral of the entire RTS redevelopment project until the final three years of the forthcoming regulatory control period (with inclusion of an allowance for 22kV switchyard remedial works) is likely to represent the least cost option.²⁷⁵ The AER notes that SP AusNet’s original documentation for the stand-alone 22kV switchyard redevelopment (past capex) stated that:

A geotechnical survey has been completed and the estimated cost for stabilisation of soil is \$1.5M.²⁷⁶

On this basis, the AER has added an allowance of \$1.5m to its substitute forecast capex allowance for remedial works in the 22kV switchyard, which allows for the deferral of all remaining capex (including \$5.6m for the 22kV switchyard redevelopment) until the final three years of the forthcoming regulatory control period.

A.2.5 Conclusion

The AER is satisfied, having regard to the additional information provided, that SP AusNet’s proposed fully integrated RTS redevelopment project reasonably reflects prudent and efficient capex required to meet the capex objectives in the NER. Subsidence issues identified at the site are such that opex alternatives that may otherwise present more efficient options in terms of a least-cost NPV analysis²⁷⁷ are unlikely to be feasible at RTS.

However, having considered the new information included in and accompanying SP AusNet’s revised proposal,²⁷⁸ and in light of the analysis conducted by PB²⁷⁹, the AER is not satisfied that SP AusNet’s forecast of the capex required for a number of

²⁷⁵ Based on the AER’s economic analysis, the deferred redevelopment option (including 22kV remedial works) has an NPV of \$73.9m, while the advanced redevelopment option has an NPV of \$76.9m.

²⁷⁶ SP AusNet, *Redevelopment of the Richmond Terminal Station 22 kV Switchyard*, February 2007, p.5.

²⁷⁷ NER, cl. 6A.6.7(e)(6), (7)

²⁷⁸ NER, cl. 6A.6.7(e)(1)

²⁷⁹ NER, cl. 6A.6.7(e)(3)

specific cost items reasonably reflects prudent and efficient capex in accordance with the capex criteria.

The AER has therefore rejected SP AusNet’s proposed forecast capex allowance for this project, and approved a substitute forecast capex allowance based on its findings above. The AER’s adjustments include:

- a reduction of \$11.9m to remove the cost of a number of specific cost items in line with PB’ advice
- an additional \$1.5m for upfront remedial works in the 22kV switchyard, which it is satisfied is appropriately characterised as capex, rather than opex²⁸⁰
- a downward adjustment of \$3.7m to SP AusNet’s proposed contingency allowance for the RTS project (see separate discussion at section 4.6.2.1 of this final decision)
- a downward adjustment of \$16.39m to remove the unexplained amount of capex in SP AusNet’s revised cost templates.

The AER has approved a total forecast capex allowance of \$96.70m for the RTS redevelopment project, which represents a reduction of \$30.50m from SP AusNet’s proposed forecast capex allowance of \$127.19m (as presented in its revised cost templates). The AER’s adjustments are set out in table A.7.

Table A.7: AER’s final decision – Redevelopment of RTS (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER’s draft decision	0.00	0.00	0.00	0.00	18.22	16.66	34.89
SP AusNet’s revised proposal (as advised)	3.90	9.60	8.20	7.60	44.30	37.20	110.80
SP AusNet’s revised proposal (revised cost templates)	3.40	2.86	0.00	9.68	60.47	50.79	127.19
AER’s final decision	1.53	0.00	0.00	7.61	47.58	39.98	96.70
AER’s adjustments	-1.87	-2.86	0.00	-2.07	-12.89	-10.82	-30.50

Table sources: AER draft decision, 31 August 2007, pp.104, 278; SP AusNet, email to the AER, 12 December 2007; SP AusNet, *SPA Revised Templates – Cost information lodged 12102007.xls*.

* Capex as incurred.

A.3 Transformer replacements

A.3.1 Draft decision

In its draft decision the AER was not satisfied that capex associated with each of SP AusNet’s proposed targeted transformer replacements reasonably reflected prudent and efficient capex required to meet the capex objectives over the forthcoming

²⁸⁰ NER, cl. 6A.6.7(e)(7)

regulatory control period. The capex estimate substituted by the AER represented a downward adjustment of \$22.4m to SP AusNet’s proposed forecast capex for this project, and removed SP AusNet’s proposed capex allowance for the following:

- Replacement of transformers at Bendigo and Dederang, which appeared to be in relatively good condition in SP AusNet’s transformer failure risk ranking model.
- The incremental cost of like-for-like replacement of the transformer at Yallourn over a unit more reflective of the expected load.
- Replacement of one 220/66kV metropolitan transformer, on the basis that more cost efficient alternatives to replacement appeared available.

Table A.8: AER’s draft decision – Transformer replacements (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet’s original proposal	3.50	5.40	2.00	5.50	7.90	4.50	28.80
AER’s draft decision	0.00	0.00	4.50	1.90	0.00	0.00	6.40
AER’s adjustment	-3.50	-5.40	2.50	-3.60	-7.90	-4.50	-22.40

Table source: AER draft decision, 31 August 2007, pp.104, 283.

* Capex as incurred

A.3.2 Revised proposal

In its revised proposal SP AusNet states that it has updated its transformer condition ranking model since lodging its original revenue proposal:

The upgraded model now includes parameters that are understood by SP AusNet specialist engineers but were not explicitly documented in the earlier version of the Transformer Condition Ranking.²⁸¹

In response to the AER’s draft decision, SP AusNet provides further advice on the drivers for its proposed transformer replacements:

The transformer condition and ranking is used as inputs to the asset planning process that includes impact of failure, coordination with other projects, customer requirements, risk and economic analysis models and development of efficient projects leading to alternative scenarios for management decisions on replacement or refurbishment.

In its revised proposal SP AusNet accepts the AER’s draft decision to include a capex allowance of \$1.9m for its proposed transformer replacement at Yallourn Power Station (YPS).²⁸² However SP AusNet provides additional and updated information to support the reinstatement of a capex allowance for the following targeted transformer replacements rejected in the AER’s draft decision:

- Dederang (DDTS) H1 transformer

²⁸¹ SP AusNet, SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p. 115.

²⁸² SP AusNet, *Transformer Replacement Program – Response to AER Draft Decision Report*, 17 September 2007, p.5.

- Bendigo (BETS) No 2, 220/66kV transformer
- ASEA 220/66kV 150 MVA metropolitan transformer

SP AusNet states that if these transformer replacements are deferred there will be an overall increase of 6% in failure risk across its total fleet of power transformers as at 2014.²⁸³

Dederang (DDTS) H1 transformer

The AER's draft decision concluded that SP AusNet's proposed replacement of the third transformer at DDTS with a new and larger unit was driven more by augmentation than condition. SP AusNet now presents updated information that indicates that the units have increased in relative ranking from 46, 44 and 34 to positions 50, 49 and 46.²⁸⁴ SP AusNet submits that the revised ranking provides evidence that replacement is justified based on condition alone, and does not consider the question of augmentation at DDTS relevant to the replacement decision. SP AusNet also challenges one of the key arguments for deferral in the AER's draft decision – that the availability of local spare units significantly reduces the consequences of failure at DDTS:

The discussion about use and availability of a spare is tantamount to adopting a run to failure philosophy, which has been accepted (by AER) as not suitable for transmission networks.²⁸⁵

SP AusNet submits that given the age and condition of the units at DDTS, they are not suitable for refurbishment due to the high cost and limited additional life that would be gained. SP AusNet states that an economic evaluation with various options supports replacement in the forthcoming regulatory control period.²⁸⁶

Bendigo (BETS) No 2, 220/66kV transformer

SP AusNet's updated transformer model indicates a relative ranking of between 42 and 51 for the six tanks at BETS marked for replacement, significantly higher than the earlier ranking of between 20 and 39.²⁸⁷ SP AusNet submits that these results suggest planned replacement or refurbishment is appropriate within the forthcoming regulatory control period. SP AusNet states that the results of its economic analysis indicates that replacement of the BETS units as proposed in 2012 represents the least-cost alternative to refurbishment.²⁸⁸

ASEA 220/66kV 150 MVA metropolitan transformer

SP AusNet's updated transformer condition model indicates that there are seven metropolitan ASEA transformers with a high condition ranking. These 'priority' transformers (and their rankings) are located at Richmond (56), Thomastown (46), West Melbourne (54), Geelong (52, 52) and Heatherton (51, 51). In support of its

²⁸³ *ibid.*, p.16. This analysis assumes that SP AusNet's proposed transformer replacements at TTS and RTS as part of station projects are allowed by the AER in its final decision.

²⁸⁴ *ibid.*, p.14.

²⁸⁵ *ibid.*, p.9.

²⁸⁶ *ibid.*, p.26.

²⁸⁷ *ibid.*, pp.27-28.

²⁸⁸ *ibid.*, pp.38-41.

proposal to replace a second metropolitan unit in the forthcoming regulatory control period, SP AusNet submits that:

The RTS B1, TTS B3 and GTS B1 transformers were included in the application with two further ASEA transformers. The results above indicate that a further two transformers above the application case require replacement and hence the forecast capital [expenditure] was very conservative.²⁸⁹

SP AusNet also states that it is likely that there will be at least two major failures over the forthcoming regulatory control period, therefore the metropolitan spare cannot be relied upon to mitigate the consequences of failure of any of the seven priority ASEA transformers.²⁹⁰

Overall, SP AusNet's revised proposal reinstates its original proposed capex allowance for targeted transformer replacements, at a total cost of \$28.80m.²⁹¹

A.3.3 Consultant's advice

PB makes the following comments in relation to the outputs of SP AusNet's updated transformer condition ranking model:

At a high level, it is apparent that the revised transformer condition rankings have significantly increased towards the pre-defined reference level dictated by the oldest and worst condition unit within SPA's transformer asset base – where the number of tanks ranked at a position of 41 or higher has increased by almost 150% from 39 to 97.²⁹²

PB comments that although the inclusion of new condition variables in the model appears appropriate from a technical perspective, the significant change in the condition model outputs in SP AusNet's revised proposal requires detailed review to verify the reasonableness of the input assumptions.

Dederang (DDTS) H1 transformer

While recognising the increase in failure risk presented in SP AusNet's updated transformer model, PB maintains that the consequences of failure are somewhat mitigated by the spare units specifically assigned to DDTS:

While not necessarily mitigating the risk of explosive failure, the spares certainly mitigate the risk of ongoing outage of the unit and constraints on import capability.²⁹³

PB has examined the economic analysis presented by SP AusNet in support of its proposed replacement at Dederang, and comments as follows:

- There are a number of errors in the analysis that require correction.

²⁸⁹ *ibid.*, pp.11-12.

²⁹⁰ *ibid.*, p.21.

²⁹¹ SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p. 117. This figure appears to (incorrectly) include SP AusNet's original proposed capex allowance of \$3.8m for like-for-like replacement of the Yallourn transformer, rather than the AER's approved \$1.9m allowance accepted by SP AusNet.

²⁹² PB Strategic Consulting, *SP AusNet revenue reset - Advice on revised revenue proposal*, 8 January 2008, p.23.

²⁹³ *ibid.*, p.25.

- The amount of replacement capex included in the analysis should be \$9.70m (as opposed to \$3.80m), consistent with SP AusNet’s revised proposal for Dederang.
- The \$3.30m allowance representing the consequences of failure under the ‘do nothing’ option overstates these costs given the availability of the local and dedicated spares at Dederang. A more reasonable site-specific allowance for these costs is \$1.90m.

PB states that once these corrections and assumptions are incorporated into SP AusNet’s economic analysis, the ‘do nothing’ option in fact represents the least cost alternative, as opposed to upfront replacement at Dederang.²⁹⁴ Further, PB states that:

Deferring the replacement does not specifically endorse a run to failure outcome, and as SPA gather increased information regarding the condition of the unit as time progresses, the unit can be replaced with the spare should the need arise – and at that time consider the option of a full replacement.²⁹⁵

On this basis PB recommends that the AER maintain its draft decision to remove the capex allowance for replacement of the third transformer at Dederang.

Bendigo (BETS) No 2, 220/66kV transformer

PB has examined SP AusNet’s economic analysis comparing the replacement and refurbishment options at BETS. PB identifies a number of errors in SP AusNet’s analysis, and considers that it is neither robust nor conclusive in supporting its preferred upfront replacement option. PB acknowledges the critical role played by these transformers, and the failure risk presented by the two worst condition tanks ranked 49 and 51 in the updated transformer model. PB concludes as follows:

...using the economic evaluation presented as a guide, PB recommends an efficient and prudent alternative to replacing the transformers at Bendigo is the refurbishment of the two most degraded units, which can be economically and practically facilitated by the units recently replaced at Terang.²⁹⁶

On this basis PB recommends an allowance of \$1.0m be included in SP AusNet’s forecast capex allowance to refurbish the two worst condition units at Bendigo over the forthcoming regulatory control period.²⁹⁷

ASEA 220/66kV 150 MVA metropolitan transformer

PB considers that SP AusNet has presented limited additional information to justify reinstatement of an allowance to replace a second metropolitan ASEA unit. Given its recommendation to reinstate a capex allowance to replace all four transformers at Richmond (RTS) as part of the station rebuild, PB considers that the RTS B4 unit (less than 10 years old) can be used as a replacement for the West Melbourne (WMTS) unit. On this basis, PB recommends removing the capex allowance for replacement of the first ASEA transformer included in the AER’s draft decision,

²⁹⁴ *ibid.*, pp.25-26.

²⁹⁵ *ibid.*, p.25.

²⁹⁶ *ibid.*, p.24.

²⁹⁷ The \$1.0m refurbishment allowance (two tanks) recommended by PB represents approximately one third of the \$2.6m identified by SP AusNet to refurbish all six tanks at Bendigo.

resulting in a further downward adjustment of \$4.5m from the draft decision allowance.

On the assumption that the AER will reinstate an allowance to replace the transformer at Thomastown (TTS) as part of the TTS station rebuild, PB points out that the only remaining ‘priority’ units are those located at Heatherton (HTS).²⁹⁸ PB considers that the replacement of these two transformers should be deferred, for the following reasons:

- These units only marginally breach the ‘excessive aging rate’ based on SP AusNet’s oil test results, and are ranked equally at 51.
- These units are identified for replacement as part of the HTS station redevelopment scheduled to commence early in the next regulatory control period (i.e. after 2013-14), and advanced replacement of one unit is not economically justified.
- The consequences of failure of a HTS unit can be mitigated by the availability of the spare metro transformer or other units to be released from the RTS project.²⁹⁹

Overall, PB recommends inclusion of a capex allowance of \$2.9m for the targeted transformer replacement program, a reduction of \$25.9m from SP AusNet’s revised proposal.³⁰⁰

A.3.4 AER’s considerations

SP AusNet has presented a significant volume of new and updated information in its revised proposal for the transformer replacement program. At a high level, the AER is concerned by the extent to which SP AusNet’s updated transformer condition ranking model indicates a transformer fleet in significantly worse condition than originally advised. The AER notes PB’s observation that the number of transformer tanks ranked 41 or above has increased by around 150%. Given that the transformer model provides a relative condition ranking of each unit in SP AusNet’s fleet, the AER would have expected to observe an equal number of units decreasing in ranking in the updated model.

Notwithstanding these high-level concerns, the AER has reviewed all of the information provided by SP AusNet in support of its revised proposal, and considered each of its proposed targeted transformer replacements in turn.

The AER notes that SP AusNet’s revised proposal accepts the revised capex forecast for the YPS transformer replacement approved in the AER’s draft decision without amendment. On this basis the AER has included in this final decision an allowance of \$1.9m for the YPS transformer replacement.

²⁹⁸ The AER’s consideration of SP AusNet’s revised proposal for the Thomastown project is discussed separately in section A.1.12 of this final decision.

²⁹⁹ *ibid.*, p.27.

³⁰⁰ *ibid.*, p.27.

Dederang (DDTS) H1 transformer

The AER notes PB's technical advice that, despite the increase in condition rankings, replacement of the third unit at DDTS can be deferred without any significant increase in asset failure risk. PB states that:

With appropriate condition monitoring and maintenance of the unit itself and its protection systems, SPA could optimise the deferred replacement option without accepting an increased risk of an explosive failure outcome.³⁰¹

The AER accepts PB's advice that, given the availability of fully compatible spare units ready to be placed in service at Dederang, deferring the replacement does not endorse a 'run-to-failure' strategy as suggested by SP AusNet.

Moreover, the AER considers that the availability of local and dedicated spare units at the station should form a key component of SP AusNet's economic justification for upfront replacement. The AER notes that the economic assessment presented by SP AusNet in support of its proposed replacement at DDTS is generic, rather than tailored to the specific circumstances at the station.³⁰² In line with PB's advice, once the identified errors are corrected and more realistic assumptions are incorporated, the AER agrees that the 'do nothing' option – not the upfront replacement option as SP AusNet has suggested – clearly represents the least cost alternative. The AER agrees with PB that the augmentation component of the replacement is significant (around 50% of the transformer's capacity), and is more appropriately considered by VENCORP as the network planner and procurer of augmentation works.

On this basis the AER accepts PB's recommendation to reject SP AusNet's proposed replacement of the H1 transformer at DDTS, and in deriving a substitute forecast has removed \$9.9m from the forecast capex allowance presented in SP AusNet's revised proposal.

Bendigo (BETS) No 2, 220/66kV transformer

The AER notes SP AusNet's claim that replacement or refurbishment is required in at least four of the six units at BETS due to their condition rankings.³⁰³ However the AER accepts PB's advice that there are only two units at Bendigo likely to require attention over the forthcoming regulatory control period (ranked 49 and 51 in the updated transformer condition model). The AER has closely examined SP AusNet's economic analysis comparing options at Bendigo, and accepts PB's advice that refurbishment of the two highest ranked units at a cost of \$1.0m represents the least cost alternative, rather than the upfront replacement of all six units.³⁰⁴

On this basis the AER has rejected SP AusNet's proposed replacement at BETS and in deriving a substitute forecast has removed \$5.1m from the proposed forecast capex allowance for this project.

³⁰¹ *ibid.*, p.26.

³⁰² SP AusNet, *Transformer replace on failure analysis*, Attachment 2.

³⁰³ SP AusNet, *Transformer Replacement Program – Response to AER Draft Decision Report*, 17 September 2007, p.27.

³⁰⁴ That is, after correcting for the errors identified by PB; assuming refurbishment is undertaken in 2011-12; and assuming replacement under the refurbishment option is deferred until 2017.

ASEA 220/66kV 150 MVA metropolitan transformer

The AER has closely examined the information presented by SP AusNet to support reinstatement of the second metropolitan ASEA unit. Given the AER's position in this final decision on SP AusNet's proposed transformer replacements at RTS (section A.2), GTS (section A.15) and TTS (section A.12), the AER accepts PB's advice that the only two remaining 'priority units' are located at Heatherton. The AER considers that use of the B4 unit (less than 10 years old) released from the RTS redevelopment project as a replacement for the WMTS B3 unit would preclude the need for the first ASEA unit accepted by the AER in its draft decision for this purpose.

The AER notes PB's view that the need for replacement of the two Heatherton units based on condition appears marginal, and makes the following observations:

- SP AusNet should consider utilising the brand new unit to be installed at Thomastown (following the recent failure of an ASEA unit), and to be released as part of the TTS project approved by the AER in this final decision.³⁰⁵
- SP AusNet should also consider utilising the other ASEA 220/66kV unit to be released from the RTS station redevelopment (i.e. RTS B2, ranked 45), either as a dedicated emergency spare at HTS or as a full replacement unit.³⁰⁶
- The 'priority' transformers at Heatherton are identified by SP AusNet for replacement as part of the HTS station redevelopment scheduled to commence early in the next regulatory control period (i.e. after 2013-14).³⁰⁷ This weakens SP AusNet's economic case for upfront targeted replacement in the forthcoming regulatory control period.

On this basis the AER accepts PB's recommendation to reject SP AusNet's proposed capex allowance for replacement of the HTS units. The AER considers that, given the opportunities to utilise spare ASEA units released from its metropolitan station rebuild program, SP AusNet has not justified a need for a further generic capex allowance to replace metropolitan transformers. The AER has made a downward adjustment of \$9.0m to SP AusNet's forecast capex allowance to derive a substitute forecast that reflects this assessment.

A.3.5 Conclusion

Having considered the new information included in and accompanying SP AusNet's revised proposal,³⁰⁸ and in light of the analysis conducted by PB,³⁰⁹ the AER is not satisfied that SP AusNet's proposed capex for targeted transformer replacements at BETS, DDTS and in the metropolitan area reasonably reflects prudent and efficient capex in accordance with the NER. The AER is concerned that SP AusNet has not given adequate consideration to the interaction of its transformer replacement

³⁰⁵ SP AusNet, *SPA Revised Templates – Cost information lodged 12102007.xls*. The AER notes that SP AusNet seeks to roll-in \$3.0m of capex in 2007-08 for replacement of the failed TTS unit (project 'TX15').

³⁰⁶ The AER notes that the RTS B2 transformer has been assessed by SP AusNet as in better internal condition than 54 transformers in the fleet of 190 (i.e. 28%).

³⁰⁷ SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.88.

³⁰⁸ NER, cl. 6A.6.7(e)(1)

³⁰⁹ NER, cl. 6A.6.7(e)(3)

program with its targeted station rebuild program, such that units marked for release may be under-utilised or prematurely redundant. In advocating its preferred replacement options, the AER considers SP AusNet has overlooked evidence that refurbishment/opex alternatives available in “do nothing” and smaller scale replacement options present efficient and prudent, least cost measures to address the issues identified (in particular at DDTS and BETS). In doing so SP AusNet has presented a capex forecast that is in excess of that required to meet the capex objectives in the NER.³¹⁰

The AER notes SP AusNet’s claim that if replacements at DDTS, BETS and HTS (B1) are disallowed in the AER’s final decision, overall transformer fleet risk will increase by 6%.³¹¹ The AER considers that this figure is likely to be significantly overstated, as it fails to take into account the following:

- Refurbishment of the two worst condition units at BETS
- Availability of local and dedicated spare units at DDTS
- Release of spare ASEA units in relatively good condition from its metropolitan station rebuild program.

To derive a substitute forecast, the AER has made a downward adjustment of \$25.9m to the proposed forecast capex allowance presented in SP AusNet’s revised proposal.

The AER is satisfied that a capex allowance of \$2.9m for the following items reasonably reflects prudent and efficient capex required to meet the capex objectives prescribed in the NER:

- like-for-like replacement of the Yallourn transformer (\$1.9m)
- refurbishment of two units at BETS (\$1.0m).

Table A.9: AER’s final decision – Transformer replacements (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER’s draft decision	0.00	0.00	4.50	1.90	0.00	0.00	6.40
SP AusNet’s revised proposal**	3.50	5.40	2.00	5.50	7.90	4.50	28.80
AER’s final decision	0.00	0.00	1.00	1.90	0.00	0.00	2.90
AER’s adjustment	-3.50	-5.40	-1.00	-3.60	-7.90	-4.50	-25.90

Table source: AER draft decision, 31 August 2007, pp.104, 283; SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.117.

* Capex as incurred.

** This figure appears to (incorrectly) include SP AusNet’s original proposed capex allowance of \$3.8m for like-for-like replacement of the Yallourn transformer, rather than the AER’s approved \$1.9m allowance accepted by SP AusNet.

³¹⁰ 6A.6.7(e)(6), (7)

³¹¹ SP AusNet, *Transformer Replacement Program – Response to AER Draft Decision Report*, 17 September 2007, p.16.

A.4 Replacement of station and control centre SCADA

A.4.1 Draft decision

In its draft decision the AER considered that SP AusNet had demonstrated that capex was required to replace and upgrade its SCADA systems within the forthcoming regulatory control period.

However, the AER did not accept SP AusNet's proposed capex on enhancements to the SCADA system, which it was not satisfied reasonably reflected prudent and efficient capex required to meet the capex objectives in the NER. The capex estimate substituted by the AER represented a downward adjustment of \$8.2m to SP AusNet's proposed forecast capex for this project, as shown in table A.10 below.

Table A.10: AER's draft decision – Replacement of SCADA systems (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's original proposal	12.40	7.90	6.50	5.40	7.50	4.20	43.90
AER's draft decision	11.10	6.60	5.10	4.00	6.10	2.80	35.70
AER's adjustment	-1.30	-1.30	-1.40	-1.40	-1.40	-1.40	-8.20

Table source: AER draft decision, 31 August 2007, p.285

* Capex as incurred

A.4.2 Revised proposal

For the purpose of its revised proposal SP AusNet accepts the AER's draft decision on capex for the replacement of station and control centre SCADA.³¹²

The AER notes, however, that the cost templates submitted by SP AusNet with its revised proposal indicate a proposed forecast capex allowance of \$28.5m (as incurred, \$2007-08) for the SCADA project, understating the draft decision allowance.³¹³

A.4.3 AER's considerations

SP AusNet's revised proposal accepts the revised capex forecast for this project as presented in the AER's draft decision without amendment. There have been no changes made in SP AusNet's revised revenue proposal, nor are there any differences in the information contained in or accompanying the revised proposal that have given the AER reason to change its initial position in relation to this project.

Given the discrepancy identified in the revised cost templates submitted by SP AusNet, the AER sought clarification on the actual amount of capex proposed for this project. SP AusNet advised that an error was made in generating its revised cost templates with respect to the SCADA project, and that the correct proposed amount should be that approved by the AER in its draft decision.³¹⁴ The AER accepts SP

³¹² SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p. 117.

³¹³ SP AusNet, *SPA Revised Templates – Cost information lodged 12102007.xls*.

³¹⁴ SP AusNet, email to the AER, 12 December 2007.

AusNet's advice, and has made an upwards adjustment of \$7.2m to correct the error identified.

A.4.4 Conclusion

Given SP AusNet's acceptance in its revised proposal of the AER's draft decision with respect to the SCADA project, the AER is satisfied that a forecast capex allowance of \$35.7m for this project reasonably reflects the capex criteria, taking into account the capex factors.

The AER has made an upwards adjustment of \$7.2m to correct the error identified in SP AusNet's revised cost templates, as set out in table A.11.

Table A.11: AER's final decision – Replacement of SCADA systems (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER's draft decision	11.10	6.60	5.10	4.00	6.10	2.80	35.70
SP AusNet's revised proposal (as advised)	10.50	6.00	4.70	4.50	7.90	2.30	35.90
SP AusNet's revised proposal (revised cost templates)	8.80	4.60	3.60	3.50	6.70	1.30	28.50
AER's final decision**	11.10	6.60	5.10	4.00	6.10	2.80	35.70
AER's adjustment	2.30	2.00	1.50	0.50	-0.60	1.50	7.20

Table sources: AER draft decision, 31 August 2007, p. 285; SP AusNet, email to the AER, 12 December 2007; SP AusNet, *SPA Revised Templates – Cost information lodged 12102007.xls*.

* Capex as incurred

** The AER has implemented its draft decision allowance and profile for the SCADA project.

A.5 Response capability for undefined works

A.5.1 Draft decision

In its draft decision, the AER was not satisfied that SP AusNet's proposed allowance for undefined works reasonably reflected prudent and efficient capex required to meet the capex objectives. In particular, it considered that SP AusNet's 'bottom up' cost estimation processes were accurate down to a fine level of detail, and that SP AusNet should be able to account for unforeseen events within its asset management practices.

On this basis, the AER rejected SP AusNet's forecast capex for response capability for undefined works, and approved no allowance. This resulted in a downward adjustment of \$5.5m to SP AusNet's proposed forecast capex allowance.

Table A.12: AER's draft decision – Response capability for undefined works (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's original proposal	0.92	0.92	0.92	0.92	0.92	0.90	5.50
AER's draft decision	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AER's adjustment	-0.92	-0.92	-0.92	-0.92	-0.92	-0.90	-5.50

Table source: AER draft decision, 31 August 2007, p.287.

* Capex as incurred

A.5.2 Revised proposal

In its revised proposal, SP AusNet states that its estimate of \$5.5m was derived through a review of completed unforeseen works by its engineering staff. This review determined the types of works that should be included in its risk modelling and those likely to be encountered as unforeseen works in the future.³¹⁵

SP AusNet notes that over the current regulatory control period its prudent asset management processes identified the need for an additional \$45m of unforeseen capital works. E&P was engaged to undertake risk modelling based on these historic works, with regard to the following risks:

- failure of asset requiring immediate replacement
- upgrade of replacement criteria
- change in legislation requiring additional projects
- impact of extreme events on assets.

E&P derived a most likely value of unforeseen works of \$14.5m for the forthcoming regulatory control period. SP AusNet concludes that, by comparison, its proposed \$5.5m allowance for the forthcoming regulatory control period is relatively conservative, and reasonable based on its engineering judgment.³¹⁶ SP AusNet states that exclusion of this allowance will result in the delivery of a sub-optimal program of planned works.

A.5.3 Consultant's advice

PB's recommendation regarding SP AusNet's original claim was to remove the \$5.5m allowance. Having examined SP AusNet's revised proposal, PB considers that SP AusNet provided no new information that would support a change to its recommendations, and that a material allowance to cover the risk of unforeseen events is neither prudent nor efficient. With regards to the E&P analysis, PB notes that:

- the scope of works examined appears to be somewhat greater than those actually undertaken by SP AusNet in the current regulatory control period (i.e. \$51.8m)

³¹⁵ SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.108.

³¹⁶ *ibid.*, p.108.

- the risks identified are sufficiently managed by SP AusNet through other means, including refinement of asset failure risk models, spares holdings, opex allowances and insurance arrangements
- E&P's recognition of improvement in SP AusNet's scoping and forecasting processes supports PB's finding that the majority of unforeseen works are already captured in SP AusNet's bottom-up project and program forecast capex.

PB concludes that:

...there is sufficient discretion within the overall replacement program to accommodate any minor, unforeseen, expenditure without significant change to SPA's risk exposure.³¹⁷

A.5.4 AER's considerations

The AER agrees with PB that there is no new information in SP AusNet's proposal to support the \$5.5m claim for undefined works, and considers that such an allowance is not required by a prudent service provider. The analysis undertaken by E&P does not substantiate SP AusNet's proposed allowance, nor does it take into account SP AusNet's ability to mitigate the risk or meet the cost of unforeseen events as raised previously by the AER and PB.

SP AusNet's proposed capex program is based on a detailed, bottom up assessment process which incorporates improvements to cost estimation and project management that result from its experience. Its cost estimates also include the use of a general 'brownfield' factor and contingency allowances for station rebuild/refurbishment projects which are intended to meet the cost of certain unforeseen events.

A.5.5 Conclusion

The AER has considered the arguments in SP AusNet's revised proposal³¹⁸ for the reinstatement of this allowance, and the advice provided by PB on the new analysis cited in support of that proposal.³¹⁹ The AER does not consider that the \$5.5m allowance for undefined works reasonably reflects prudent and efficient capex required to meet the capex objectives prescribed in cl. 6A.6.7(a) of the NER. The need for this allowance is not substantiated by the information provided in and with SP AusNet's revised revenue proposal, and does not withstand analysis in the context of other elements of SP AusNet's forecast capex.

The AER has therefore rejected SP AusNet's forecast capex allowance for response capability for undefined works, and approves no forecast capex for this allowance.

³¹⁷ PB Strategic Consulting, *SP AusNet revenue reset - Advice on revised revenue proposal*, 8 January 2008, p. 16.

³¹⁸ NER, cl. 6A.6.7(e)(1)

³¹⁹ NER, cl. 6A.6.7(e)(3)

Table A.13: AER's final decision – Response capability for undefined works (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER's draft decision	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SP AusNet's original proposal	0.92	0.92	0.92	0.92	0.92	0.90	5.50
AER's final decision	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AER's adjustment	-0.92	-0.92	-0.92	-0.92	-0.92	-0.90	-5.50

Table source: AER draft decision, 31 August 2007, p.287; SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.117.

* Capex as incurred

A.6 Replacement of post-type Current Transformers

A.6.1 Draft decision

The AER's draft decision accepted that SP AusNet had demonstrated a need to replace a significant number of current transformers (CTs) over the forthcoming regulatory control period, due to the unacceptable risk associated with explosive CT failure.

However, the AER was not satisfied that capex associated with all 73 of SP AusNet's proposed current transformer (CT) replacements reasonably reflected prudent and efficient capex required to meet the capex objectives over the forthcoming regulatory control period.

The AER therefore rejected the capex allowance proposed by SP AusNet for CT replacements over the forthcoming regulatory control period, on the basis that a clear replacement need had not been demonstrated. A substitute estimate for the replacement of 49 CTs was approved in its place. The 24 sets of CTs removed from the allowance had been assessed by SP AusNet as having a life expectancy of between eight and ten years in the CT failure risk model. On the basis of the information provided by SP AusNet, the AER considered that replacement of these 24 units was imprudent and inefficient, given the expectation that they would remain in service well beyond the end of the forthcoming regulatory control period.

The capex estimate substituted by the AER represented a downward adjustment of \$9.09m to SP AusNet's proposed forecast capex for this project.

Table A.14: AER's draft decision – Replacement of post-type CTs (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's original proposal	4.80	6.10	5.20	4.20	2.70	1.40	24.50
AER's draft decision	2.80	2.50	2.40	2.83	2.28	2.50	15.41
AER's adjustment	-2.00	-3.60	-2.80	-1.37	-0.42	1.10	-9.09

Table source: AER draft decision, 31 August 2007, p.292.

* Capex as incurred

A.6.2 Revised proposal

In its revised proposal SP AusNet has provided a significant amount of new and updated information to support the reinstatement of its originally proposed CT replacement program.

SP AusNet submits that the reductions to the CT replacement program in the AER's draft decision are imprudent and inefficient, for the following reasons:

- field workers will be constantly exposed to the hazards of at least one CT failure per annum through the period 2008-14
- Victorian electricity consumers will continue to be exposed to loss of supply risks costing an expected \$6.3m per annum
- CT failure risks would not be reduced, nor would risk levels be maintained near 2008 levels (as claimed), but would rise by approximately 7%
- SPA will be unable to comply with the safety exposure levels of IEC 1508 prescribed in the *Occupational Health and Safety Act 2004 (Vic)* (OH&S Act) if its stated objective of significantly reducing CT failure risks cannot be met.³²⁰

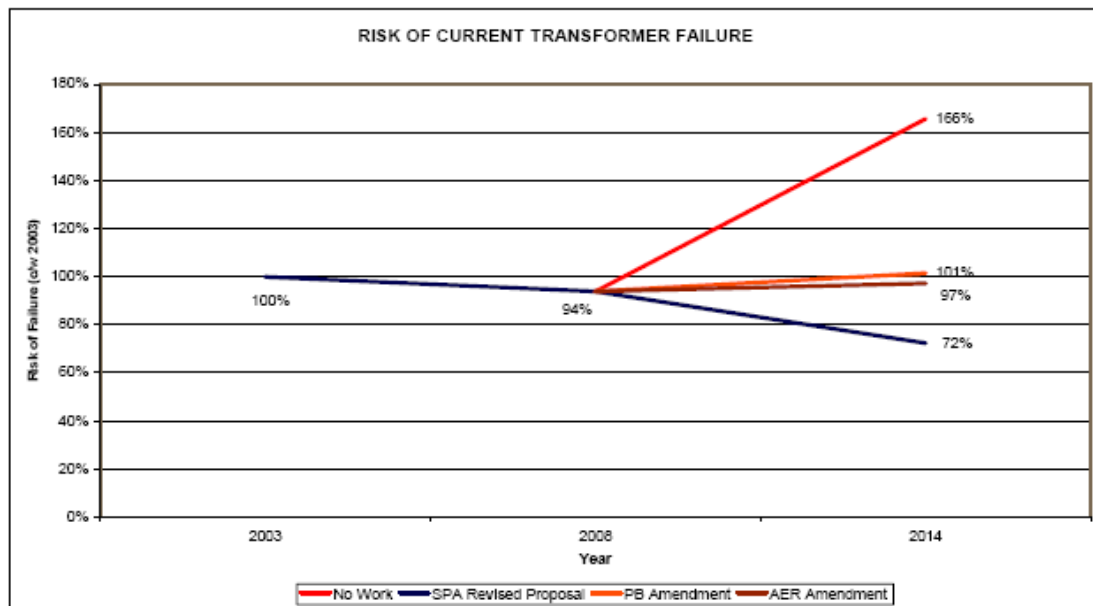
SP AusNet states that it has framed its 2008-14 CT replacement program on the basis that a significant reduction in CT failure risk is necessary in order to comply with the OH&S Act.³²¹

Based on an updated version of its CT failure risk model, SP AusNet has modelled the CT replacements proposed in its revised proposal against those recommended by PB, and those approved in the AER's draft decision. Figure A.1 illustrates the results of SP AusNet's analysis over the period 2003 to 2014.

³²⁰ SP AusNet, *Current Transformer Replacements*, 10 October 2007, p.6.

³²¹ *ibid.*, p.24.

Figure A.1: Risk of CT failure 2003-14



Source: SP AusNet, 2007 CT risk model.xls

SP AusNet states that neither PB’s recommendation nor the AER’s draft decision will provide for an improvement in CT failure risks sufficient for it to comply with the OH&S Act.

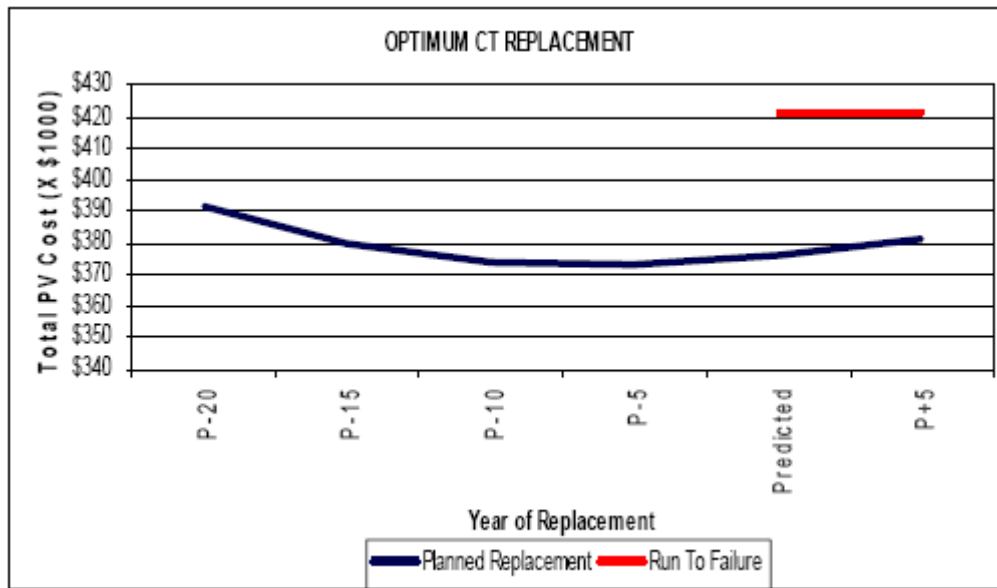
In its revised proposal SP AusNet has provided two key economic arguments to support its original proposal to replace all CTs with a life expectancy of ten years or less (as at 2008):

- The optimum timing of planned replacement of a CT is in the period 5 to 10 years prior to its predicted end of life
- SP AusNet’s originally proposed CT replacement program provides a lower cost option than the AER’s draft decision.

Optimum timing of planned replacement

SP AusNet has presented an economic analysis of life cycle costs for a typical CT in its fleet which examines the impact of replacement timing on the relative costs of run-to-failure and planned replacement. SP AusNet submits that, based on the results of its analysis, the efficient timing for planned replacement of CTs is 5 to 10 years prior to predicted failure, as shown in figure A.2.

Figure A.2: Optimum timing of CT replacements



Source: SP AusNet, *Chart – Optimised CT Planned Replacement.xls*

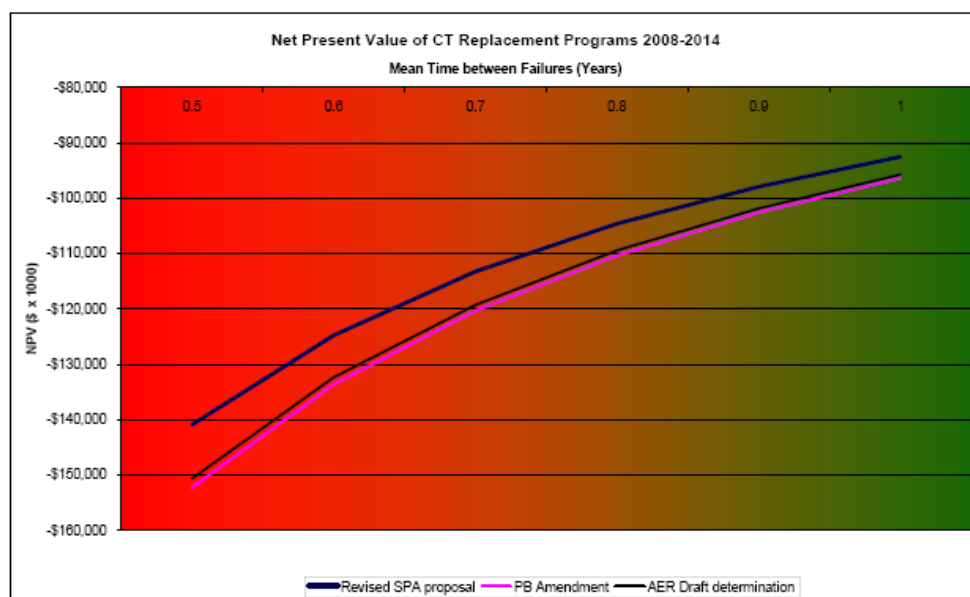
Put another way, SP AusNet submits that deferring replacement of CTs with less than 5 years remaining life (as in the AER’s draft decision) is inefficient.

Least cost analysis of options for CT replacement program

Using the updated outputs of its CT risk model, SP AusNet has presented an economic analysis to support its proposed CT replacement program. Notably, the analysis considers the combined effect of CT replacements as part of the targeted replacement program as well as the station rebuild program. SP AusNet assumes that the CTs deferred by the AER’s draft decision will be replaced in the first three years of the regulatory control period commencing 2014-15.

SP AusNet submits that, based on an expectation of at least one CT failure per annum over the forthcoming regulatory control period (i.e. $MTBF \leq 1.0$), its revised proposal represents the least cost option when compared to the positions taken by PB and the AER, as shown in figure A.3.

Figure A.3: NPV of CT replacement programs 2008-14



Source: SP AusNet, *CT Summary – MTBF versus NPV of Replacement Programs.xls*

Overall, SP AusNet’s revised proposal for the CT replacement program reinstates its original proposed capex allowance of \$24.5m.

SP AusNet also states that the AER’s draft decision did not adequately take account of CT replacements disallowed as part of station rebuild and refurbishment projects. SP AusNet has submitted a ‘conditional’ revised proposal of \$27.8m which includes an allowance for further targeted CT replacements at seven terminal stations should the AER maintain its draft decision position with respect to proposed projects at these stations.

A.6.3 Consultant’s advice

In response to the issues raised by SP AusNet in its revised proposal regarding compliance with OH&S obligations, PB comments that:

...SPA has failed to explicitly quantify any material reduction in either the annual CT failure rates or the exposed loss of supply risks based on its original capex proposal, or why it must now significantly reduce its CT failure risks in order to comply with the described Act and IEC standard as opposed to maintain them at similar to existing levels.³²²

PB reviewed the detailed documentation submitted by SP AusNet in support of its two key economic arguments for reinstatement of its original proposed CT replacement program.

Optimum timing of planned replacement

PB makes the following observations regarding the approach and assumptions adopted by SP AusNet:

³²² PB Strategic Consulting, *SP AusNet revenue reset - Advice on revised revenue proposal*, 8 January 2008, p.28.

- The underlying methodology used by SP AusNet to derive the optimal timing of CT replacements is sound (as it is informed through an assessment of life cycle costs – capturing capex, opex, safety and community costs – as dictated by asset age and failure rates)
- The analysis presented supports pre-emptive replacement as far more efficient and prudent than a run-to-failure approach
- The result that replacement of generic CTs appears optimal five years prior to predicted failure is marginal and highly sensitive to input assumptions, particularly capital and community costs
- Safety cost inputs associated with the risk of a site fatality have been determined on a reasonable basis
- Given the considerable variance in costs for different voltage levels, the capex and opex inputs associated with plant failure should be based on the specific voltage levels of those CTs excluded by the AER’s draft decision
- Community cost inputs have been informed by five historic events capturing both loss of supply and network constraint outcomes. However the average community cost is heavily biased by a loss of supply incident at Terang (TGTS) in 2006.³²³

PB considers that, given the design of TGTS, the Terang incident is not representative of the likely consequences of failure at the other stations. PB states that:

With the exception of Springvale (SVTS) and Tyabb (TBTS), an explosive CT failure at most stations with targeted CT replacements excluded by the AER is not likely to lead to loss of supply. Rather the event is more likely to lead to network constraints, which based on historical evidence will result in a community cost of only 5% of that involving loss of supply.³²⁴

To illustrate the sensitivity of SP AusNet’s result to capital and community costs, PB has re-run the model with the following assumptions:

- Community costs for a CT failure are reduced by 50%
- Capital costs to replace a CT are increased to reflect replacement of a 500kV rather than a 220kV unit.

PB concludes that the optimum timing for planned CT replacement in both cases (independently of one another) reduces to between zero and five years prior to predicted life expiry.

Least cost analysis of options for CT replacement program

PB notes that the result of the least cost analysis supporting SP AusNet’s revised proposal is most heavily dependent on its assumptions regarding the community costs associated with a CT failure and the mean-time-between-failure (MTBF) forecast. As part of its review PB re-ran SP AusNet’s model with a number of assumptions it

³²³ *ibid.*, pp.30-31.

³²⁴ *ibid.*, p.31.

considers in its experience to be more appropriate.³²⁵ In particular, PB notes that the outputs of the CT failure risk model appear to be overstating the actual level of risk experienced by SP AusNet during the current regulatory control period, and therefore the forecast of at least one failure per annum (i.e. $MTBF \leq 1$) in the forthcoming regulatory control period is also likely to be overstated.³²⁶ PB states that the outcome of its analysis supports the AER's draft decision position as the least cost option.

PB concludes as follows:

On the balance of both the new and previous information presented by SPA regarding the targeted replacement of CTs, PB is of the opinion that through the use of reasonable and more targeted input assumptions specific to the CTs recommended for deferral, that there is an economical basis to continue recommending CT deferrals.³²⁷

PB recommends that the AER maintain its draft decision to defer CT replacements with a life expectancy of between 8 and 10 years (as at 2008). However PB recommends reinstatement of an additional \$0.8m for three units at SVTS and TBTS, where it considers there is a community cost commensurate with that calculated from the Terang incident.

Overall, PB recommends a forecast capex allowance of \$16.2m for the CT replacement program, representing a reduction of \$8.3m from SP AusNet's revised proposal.³²⁸

A.6.4 AER's considerations

The AER considers that the additional information provided by SP AusNet in support of its proposed CT replacement program is soundly focused on addressing the issues raised by the AER in its draft decision. In particular, the AER notes the quality of genuine cost-benefit analysis undertaken by SP AusNet in its revised proposal to address the key issue of the efficient timing of CT replacements over the forthcoming regulatory control period.

The AER agrees with PB, however, that the outcome of the economic analysis undertaken by SP AusNet is fundamentally dependent on key input assumptions.

The AER notes SP AusNet's advice that it is required to comply with the requirement of the OH&S Act to eliminate risks to health and safety so far as is reasonably practicable. Further, the AER notes that SP AusNet has made a genuine attempt in its revised proposal to meet the test set out in the OH&S Act for what constitutes an action to reduce risk which is 'reasonably practicable'.³²⁹

However, in line with PB's advice, the AER disagrees with SP AusNet's general statement that the OH&S Act implies a 'significant reduction' in CT failure risk is necessary for compliance reasons, such that – given the incremental costs of further

³²⁵ PB's assumptions included: MTBF marginally increases to 1.05; relative risk in 2014 is correctly referenced to 2003 rather than 2008 levels; community costs for a CT failure are reduced by 50%; and capex deferred under the AER's draft decision option is apportioned more appropriately.

³²⁶ *ibid.*, p.34.

³²⁷ *ibid.*, p.34.

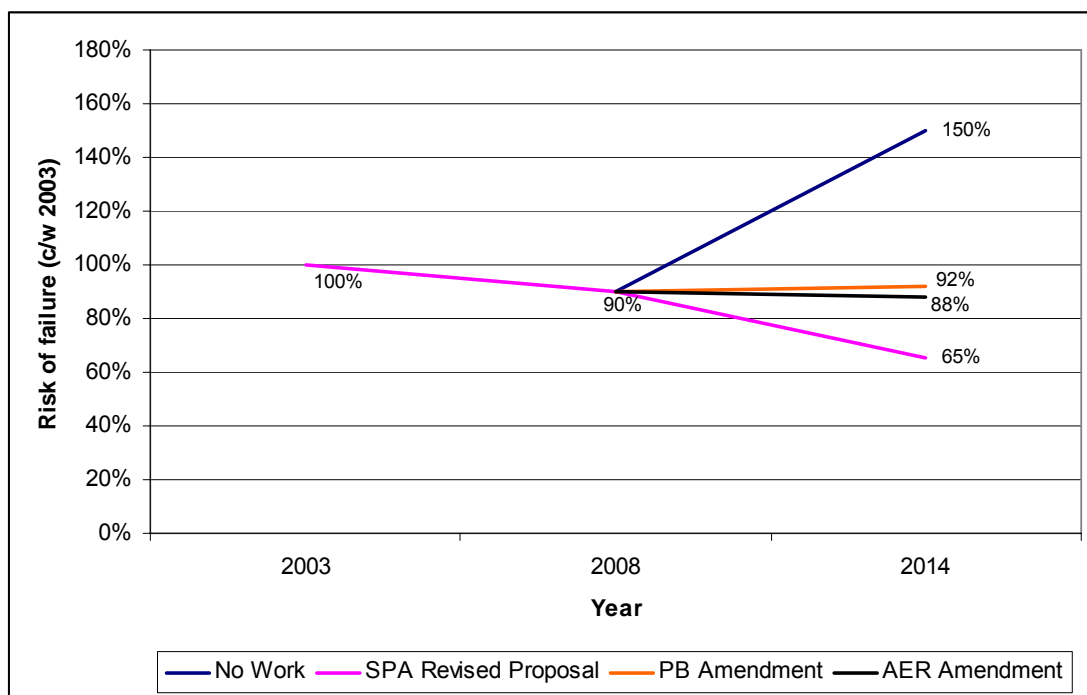
³²⁸ *ibid.*, p.35.

³²⁹ Occupational Health and Safety Act 2004 (Vic.), s. 20(2).

risk reduction – a stable or slowly reducing CT risk profile would be unreasonable or inappropriate. The OH&S Act explicitly requires SP AusNet to have regard to the costs of eliminating or reducing the hazard or risk in question in determining what is reasonably practicable in ensuring health and safety.³³⁰ As PB suggests, SP AusNet has demonstrated in its revised proposal that cost is a relevant factor in its decisions regarding the timing of CT replacements.³³¹

SP AusNet's states that the effect of the AER's draft decision to defer CT replacements is to increase CT failure risk by 3% over the period 2008-14 (see figure A.1 above). Correction of an error in SP AusNet's calculations³³² however, shows that in fact the effect of the AER's draft decision is to reduce CT failure risks by 2% over the 2008-14 period, as shown in figure A.4.

Figure A.4: SP AusNet – Risk of CT failure (AER amended)*



Source: SP AusNet, 2007 CT Risk Model.xls; AER analysis.

* AER and PB amendments relate to positions taken in and for the AER's draft decision.

The AER notes that the relative risk levels in figure A.4 under the 'AER amendment' option do not include CT replacements rejected by the AER in its draft decision but allowed by the AER in this final decision.

Irrespective of the direction and/or size of any movements in fleet-wide probability of CT failure rates, the AER considers that the key determinant of the efficiency of SP AusNet's investment decision, taking into account its OH&S obligations, is whether the benefits (i.e. reduced consequences of failure and OH&S risk) outweigh

³³⁰ Occupational Health and Safety Act 2004 (Vic.), s. 20(2)(e).

³³¹ PB Strategic Consulting, *SP AusNet revenue reset - Advice on revised revenue proposal*, 8 January 2008, p.30.

³³² In its revised proposal SP AusNet incorrectly referenced the 2014 CT failure risk levels to 2008 levels (rather than 2003 levels).

the costs (i.e. replacement capex). This trade-off is correctly identified by SP AusNet in its revised proposal.

The AER has considered each of SP AusNet’s economic arguments for upfront CT replacements in turn.

Optimum timing of planned replacement

In response to the AER’s draft decision, SP AusNet has undertaken an economic analysis of life cycle costs for a typical CT in its fleet, incorporating true ‘risk costs’ based on the probability and quantified consequences of CT failure. The result of the analysis suggests that SP AusNet’s proposal to replace all CTs with a life expectancy of ten years or less (as at 2008) over the forthcoming regulatory control period represents the least cost option.

The AER agrees with PB that the underlying methodology used by SP AusNet to derive the optimal timing of CT replacements is sound, and it attempts to capture all relevant variables. However, as PB has suggested, it is clear that the result is heavily dependent on key input assumptions such as community and capital costs.

The AER has examined SP AusNet’s community cost calculations, and found that the information presented by SP AusNet regarding the significant loss of supply event at TGTS in 2006 contradicts information presented in the NEMMCO system incident report for the same event.³³³ Using the details from the NEMMCO report, the AER has re-calculated the community costs associated with the incident at TGTS, as shown in table A.15.

Table A.15: CT failure community costs at TGTS 2006

	Loss of supply	Outage time	Minutes off supply	Loss of supply (MWh)	Customer value of lost load (VUE)	Community costs
SP AusNet calculations						
TGTS incident	50,000 customers	7.5 hours	405	999.9	\$29,600	\$29,597,120
AER calculations (NEMMCO report)						
TGTS incident	90MW	11:47 - 14:11	144	216	\$29,600	\$6,393,600
	60MW	14:11 - 16:16	125	125	\$29,600	<u>\$3,700,000</u>
						\$10,093,600

Table sources: SP AusNet, *NPV INPUTS – CT REPLACEMENT PROGRAM.xls*; AER analysis.³³⁴

The AER considers that SP AusNet has also incorrectly calculated the community costs associated with network constraints from CT failures at MLTS (2002 and 2005)

³³³ NEMMCO, *Power System Incident Report Tripping of 220kV Busbars Terang 23 October 2006*, Version No: 1.0, FINAL.

³³⁴ The AER notes the EUCV’s concerns at SP AusNet’s use of the VCR (i.e. VUE) measure to justify its proposed capital works. The AER understands that there is some debate as to the appropriate value of customer reliability, however it sees no reason to depart from the VCR measure in this instance.

and JLTS (2004). SP AusNet uses VoLL (\$10,000) to value the cost of a market constraint, whereas the AER considers it more appropriate to use the average Victorian price of \$36/MWh given that no load is lost with a market constraint.³³⁵

These adjustments to SP AusNet's calculations suggest a significantly (66%) lower average community cost per CT failure, as shown in table A.16.

Table A.16: Average community costs per CT failure – AER's amended calculations

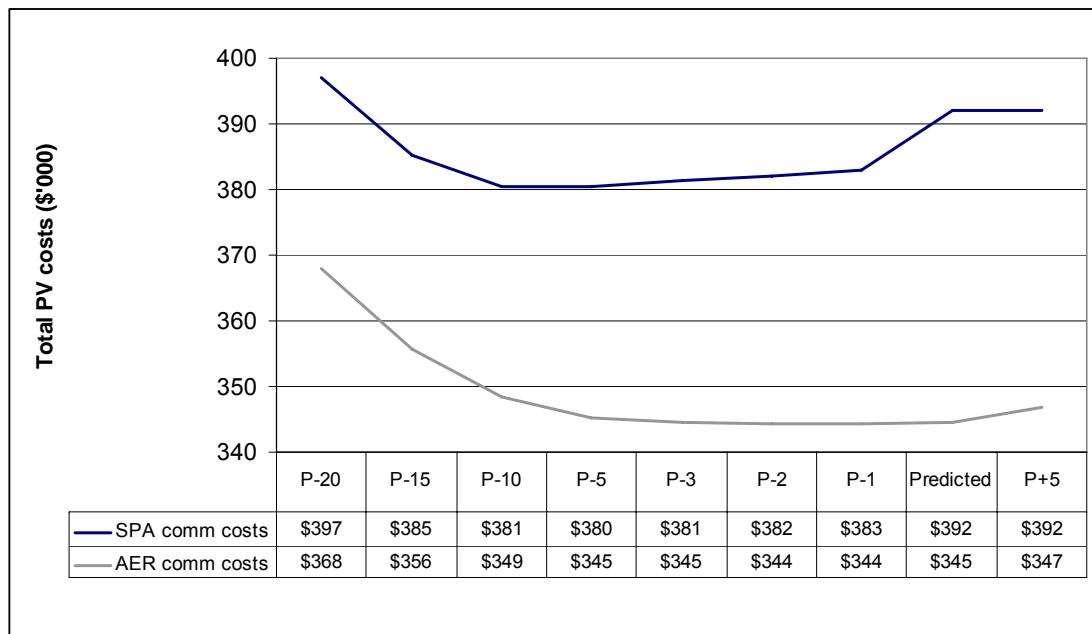
	SP AusNet	AER amended
Loss of supply		
TGTS (Oct 2006)	\$ 29,597,120	\$ 10,093,600
BATS (Nov 2006)	\$ 473,600	\$ 473,600
Total	\$ 30,070,720	\$ 10,567,200
Average over five failures	\$ 6,014,144	\$ 2,113,440
Network constraints		
MLTS (2002, 2005)	\$ 527,949	\$ 1,901
JLTS (2004)		
Average over five failures	\$ 316,769	\$ 1,140
Average community costs per CT failure	\$ 6,330,913	\$ 2,114,580

Table sources: SP AusNet, *NPV INPUTS – CT REPLACEMENT PROGRAM.xls*; AER analysis.

These adjustments to the community cost inputs have a significant impact on the optimum timing for CT replacement. As shown in figure A.5, when the AER's amended community cost inputs are substituted in the model for SP AusNet's overstated community cost inputs, the optimum timing of CT replacements falls from 5-10 years to 1-2 years before predicted life expiry.

³³⁵ The \$36/MWh price used in the AER's analysis is the Annual Volume Weighted Average Price for Victoria (2005-06), as quoted on the AER's website (See: <http://www.aer.gov.au/content/index.phtml?itemId=710143>), Figure 9).

Figure A.5: Optimum timing of CT replacements – sensitivity to community cost inputs



Source: AER analysis.

On the basis of this revised analysis, the AER does not consider that replacement of CTs with a life expectancy of greater than eight years over the forthcoming regulatory control period (including those at SVTS and TBTS recommended for reinstatement by PB) reasonably reflects prudent and efficient expenditure required to meet the capex objectives. This result is further supported by the sensitivity analysis conducted by PB in forming its recommendation that:

- the optimum replacement period for 220kV CTs is 0-5 years before predicted life expiry (with reduced community costs to remove bias of TGTS incident)
- the optimum timing for planned replacement of a 500kV CT is likely to be 0-5 years prior to predicted life expiry (due to the additional capital cost).

Least cost analysis of options for CT replacement program

The AER understands that, unlike the optimum timing analysis, SP AusNet’s least cost analysis for the overall CT replacement program (including CT replacements proposed as part of station projects) is based on the estimated failure probabilities of its actual CT fleet, rather than that of a ‘typical’ CT in its fleet. As PB notes, the analysis is again heavily dependent on key input assumptions, most notably:

- consequential costs associated with a CT failure of \$8.57m
- the assumption of at least one CT failure per year over the period 2008-14 (i.e. MTBF \leq 1.0).

Based on the analysis set out above (see table A.16), the AER considers that the community costs portion of the consequential costs input assumption is overstated, and therefore should be adjusted downwards.

The AER also notes PB’s views on the appropriate MTBF assumption for SP AusNet going forward:

... the overall CT MTBF is expected to improve beyond the historically observed level of 1, given SPA's historic and allowed capex, which strongly prioritises and targets the worst condition units.³³⁶

On the basis of the amended community costs and a number of other reasonable assumptions,³³⁷ the AER has re-run SP AusNet's model. Figures A.6 and A.7 illustrate the impact of the AER's input assumptions on the least cost option.

Figure A.6: PV analysis of CT replacement programs (SP AusNet's community costs)

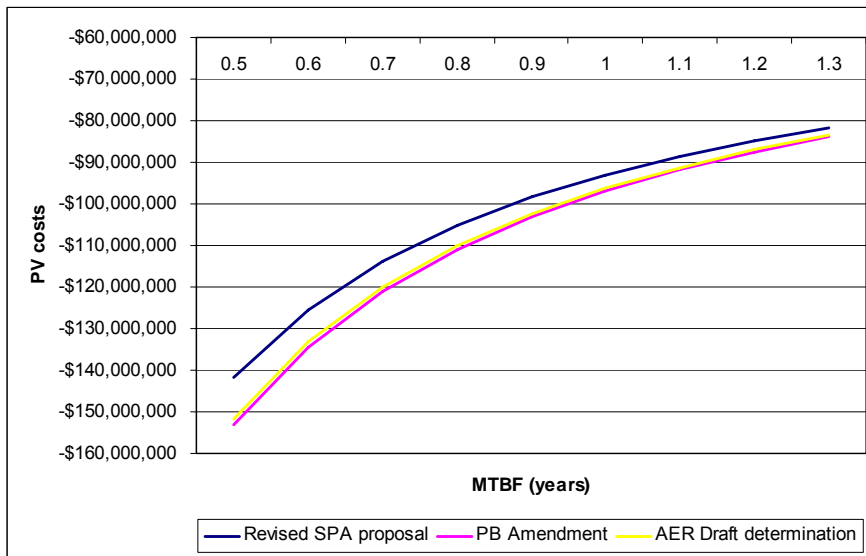
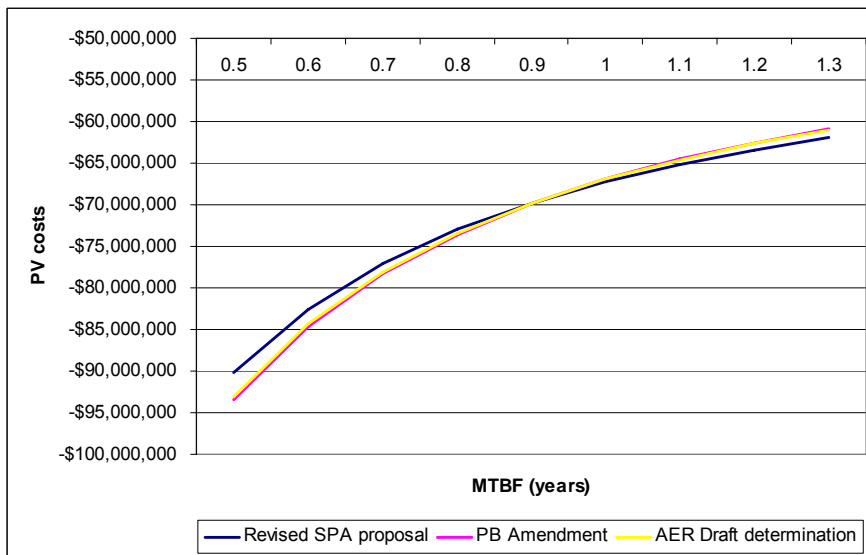


Figure A.7: PV analysis of CT replacement programs (AER's amended community costs)



Source: AER analysis

³³⁶ PB Strategic Consulting, *SP AusNet revenue reset - Advice on revised revenue proposal*, 8 January 2008, p.34.

³³⁷ The AER's amended input assumptions include: consequential costs \$4.35m (AER amended version only); 2014 relative fleet wide CT risk correctly referenced to 2003 levels (see figure A.4 above); and appropriate apportionment of capex deferred under the AER's draft decision option.

The AER accepts PB's advice that an MTBF assumption of no less than 1 is reasonable. On this basis the AER considers that the result suggested by figure A.7 supports its draft decision position regarding CT replacements as the least cost option (i.e. assuming an $MTBF \geq 0.9$).

The AER notes that this result is further supported by its approval in this final decision of a number of additional CT replacements as part of station projects.

A.6.5 Conclusion

Having considered the new information included in and accompanying SP AusNet's revised proposal,³³⁸ and in light of the analysis conducted by PB,³³⁹ the AER is satisfied that:

- SP AusNet's proposal to replace 49 sets of CTs at various stations with life expectancies ranging between zero and nine years reasonably reflects prudent and efficient capex in accordance with the NER (as approved in the AER's draft decision).
- SP AusNet's proposal to replace five sets of CTs at DDTs (three at 220kV and two at 330kV) with a life expectancy of 8 years reasonably reflects prudent and efficient capex in accordance with the NER. Given this assessment, the AER considers that replacement of one further 330kV CT at DDTs with a life expectancy of 9 years is reasonable and efficient.
- SP AusNet's proposed replacement of one 220kV CT set at SVTS with a life expectancy of 8 years reasonably reflects prudent and efficient capex in accordance with the NER.

However, the AER is not satisfied that SP AusNet's proposal to replace a further 17 CTs with life expectancies ranging between 9 and 10 years reasonably reflects prudent and efficient capex required to meet the capex objectives. The AER's analysis of the options presented by SP AusNet indicates that these assets can be left in service at an efficient cost and are more prudently replaced outside the forthcoming regulatory control period. SP AusNet has presented a capex forecast that is in excess of that required to meet the capex objectives in the NER, by overlooking evidence that deferred replacement options present efficient, prudent and least cost measures that will adequately address the issues it identifies.³⁴⁰

On this basis the AER has rejected SP AusNet's proposed forecast capex for the CT replacement program, and approved a substitute forecast allowance of \$17.38m.³⁴¹ This represents a downward adjustment of \$7.12m from SP AusNet's revised proposal of \$24.50m for this project, as shown in table A.17.

³³⁸ NER, cl. 6A.6.7(e)(1)

³³⁹ NER, cl. 6A.6.7(e)(3)

³⁴⁰ NER, cl. 6A.6.7(e)(6)

³⁴¹ For those CTs disallowed in the AER's draft decision, but allowed in this final decision, the AER has based its per-unit adjustments on the following document: SP AusNet, *CT replacement program*, 16 April 2007, p.7.

Given the AER's position in this final decision with respect to the relevant station projects, it is unnecessary to consider SP AusNet's 'conditional' proposal for a further \$3.3m capex allowance for the CT replacement program.

Table A.17: AER's final decision – Replacement of post-type CTs (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER's draft decision	2.80	2.50	2.40	2.83	2.28	2.50	15.41
SP AusNet's revised proposal	4.82	6.12	5.22	4.22	2.72	1.40	24.50
AER's final decision**	3.14	2.84	2.74	3.18	2.63	2.85	17.38
AER's adjustment	-1.68	-3.28	-2.48	-1.04	-0.09	1.45	-7.12

Table source: AER draft decision, 31 August 2007, pp.104, 292; SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.119.

* Capex as incurred.

** Given the dynamic nature of SP AusNet's CT risk model outputs, the AER accepts PB's view that a flat expenditure profile remains appropriate for this project. The AER's adjustment to its draft decision approved allowance has therefore been spread across the entire period 2008-14.

A.7 Vehicle replacements

A.7.1 Draft decision

In its draft decision the AER rejected SP AusNet's proposed forecast of \$8.40m in vehicle replacement costs and substituted a revised forecast of \$4.98m, which reflected SP AusNet's vehicle replacement profile from the current regulatory control period.

Table A.18: AER's draft decision – Vehicles (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's original proposal	1.40	1.40	1.40	1.40	1.40	1.40	8.40
AER's draft decision	0.83	0.83	0.83	0.83	0.83	0.83	4.98
AER's adjustment	-0.57	-0.57	-0.57	-0.57	-0.57	-0.57	-3.42

Table source: AER draft decision, 31 August 2007, p. 294.

* Capex as incurred

A.7.2 Revised proposal

For the purposes of its revised proposal SP AusNet has accepted the AER's draft decision on capex for the replacement of vehicles in the forthcoming regulatory control period.³⁴²

³⁴² SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p. 119.

A.7.3 AER's considerations

SP AusNet's revised proposal accepts the revised capex forecast for this project as presented in the AER's draft decision without amendment. There have been no changes made in SP AusNet's revised revenue proposal, and there are no differences in the information contained in or accompanying the revised proposal that have given the AER cause to move from its initial position in relation to this project.

A.7.4 Conclusion

The AER is satisfied that the forecast capex associated with this project in SP AusNet's revised proposal, which implements without change the AER's draft decision on this matter, reasonably reflects the capex criteria, taking into account the capex factors.

On this basis the AER accepts the forecast of required capex that is included in the revised revenue proposal.

Table A.19: AER's final decision – Vehicles (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER draft decision	0.83	0.83	0.83	0.83	0.83	0.83	4.98
SP AusNet revised proposal	0.83	0.83	0.83	0.83	0.83	0.83	4.98
AER final decision	0.83	0.83	0.83	0.83	0.83	0.83	4.98

Table source: AER draft decision, 31 August 2007, p. 294; SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p. 119.

* Capex as incurred

A.8 Inventory

A.8.1 Draft decision

The AER's draft decision identified \$0.24m of forecast expenditure on inventory that was inappropriately classified as capex. This amount related to 'normal line stores' (eg. nuts, bolts, washers etc.), and should in fact have been classified as opex.

The AER rejected SP AusNet's proposed forecast of \$2.25m and substituted a revised forecast of \$2.01m, as shown in table A.20. A corresponding increase of \$0.24m was made to SP AusNet's proposed forecast opex allowance to offset this adjustment.

Table A.20: AER's draft decision – Inventory (\$m, 2007-08)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet original proposal	0.35	0.38	0.38	0.38	0.38	0.38	2.25
AER draft decision	0.31	0.34	0.34	0.34	0.34	0.34	2.01
AER adjustment	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.24

Table source: AER draft decision, 31 August 2007, p.83.

A.8.2 Revised proposal

For the purposes of its revised proposal SP AusNet has accepted the AER's draft decision on this matter and adopted the AER's treatment of inventory costs.³⁴³

A.8.3 AER's considerations

SP AusNet's revised proposal accepts the revised capex forecast for inventory as presented in the AER's draft decision without amendment. There have been no changes made in SP AusNet's revised revenue proposal, nor are there any differences in the information contained in or accompanying the revised proposal that have given the AER cause to move from its initial position in relation to this project.

A.8.4 Conclusion

The AER is satisfied that the forecast capex for inventory in SP AusNet's revised proposal, which implements without change the AER's draft decision on this matter, reasonably reflects the capex criteria, taking into account the capex factors.

On this basis the AER accepts the forecast of required capex that is included in the revised revenue proposal.

Table A.21: AER's final decision – Inventory (\$m, 2007-08)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER's draft decision	0.31	0.34	0.34	0.34	0.34	0.34	2.01
SP AusNet's revised proposal	0.31	0.34	0.34	0.34	0.34	0.34	2.01
AER's final decision	0.31	0.34	0.34	0.34	0.34	0.34	2.01

Table sources: AER draft decision 31 August 2007, p.83; SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p. 120.

A.9 Replacement of 500kV CBs

A.9.1 Draft decision

In its draft decision, the AER was not satisfied that capex associated with SP AusNet's proposed targeted replacement of two 500kV CBs (SF⁶ unit, '3AT5' type) reasonably reflected prudent and efficient capex required to meet the capex objectives over the forthcoming regulatory control period.

The AER questioned the need for the replacement of two 500kV CBs for release as maintenance spares, given that SP AusNet's external contractor cost for the 500kV CB refurbishments (a separate opex project) appeared to include the cost of purchasing spare parts. At most, the AER considered that SP AusNet had justified the replacement of one 500kV CB for release as an additional spare.

On this basis the AER rejected SP AusNet's proposed forecast of \$4.20m for this project, and substituted a revised forecast of \$2.10m, as shown in table A.22.

³⁴³ SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, pp. 120, 165

Table A.22: AER's draft decision – Replacement of 500kV CBs (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's initial proposal	3.50	0.70	0.00	0.00	0.00	0.00	4.20
AER's draft decision	0.00	2.10	0.00	0.00	0.00	0.00	2.10
AER's adjustment	-3.50	1.40	0.00	0.00	0.00	0.00	-2.10

Table source: AER draft decision, 31 August 2007, p.76.

* Capex as-incurred

A.9.2 Revised proposal

In its revised proposal, SP AusNet has reinstated this project with the same scope and cost as in its original proposal. In support of this project, SP AusNet claims that the AER has incorrectly assumed that:

- the entire population of these type of CBs is the same, so that their parts are interchangeable
- the CB spares included in cost estimates for the 500kV CB refurbishment program as part of opex include all the spares likely to be required during refurbishment.

SP AusNet states that both these statements are incorrect, as:

- there are two types of 500kV 3AT5 CBs, and the spare parts are not interchangeable between the two types
- 'main assembly items' are not included in the cost estimates for the opex refurbishment program.³⁴⁴

SP AusNet states that two 500kV CB spares are required in order to service the two types of 3AT5 units in its fleet.

A.9.3 Consultant's review

While SP AusNet's proposal presents new information that strengthens the case made in its initial proposal, Nuttall Consulting (NC) concludes that the need for replacement of a second 500kV CB remains unsubstantiated in SP AusNet's revised proposal.³⁴⁵

NC observes that SP AusNet has 16 of the 'older type' 3AT5 CBs (25-29 years old), and six of the 'new specification' CBs (around 15 years old). NC notes that:

- SP AusNet has already retired an older specification 3AT5 in the current regulatory control period, but now submits that an additional unit is required to facilitate the refurbishment program

³⁴⁴ SP AusNet, *Replacement program for 500 kV Circuit Breakers, Response to AER Draft Decision Report*, p.8.

³⁴⁵ Nuttall Consulting, *SP AusNet Revised Proposal – Review of selected ex ante projects*, 26 November 2007, p.29.

- SP AusNet has advised that it does not have newer specification 3AT5 spare units available.

Although NC accepts that one of each type of 3AT5 CBs should be retired to facilitate the refurbishment program, it does not consider that two CBs need to be *replaced* in order to achieve this:

...Nuttall Consulting considers that a CB could be retired without the need for a new CB by converting an existing double switched arrangement to a single switched arrangement.³⁴⁶

On this basis NC does not consider that SP AusNet's proposal to replace two CBs for refurbishment purposes represents prudent and efficient expenditure, noting that a 15 year old CB would be retired (at a cost of \$2.1m) to service a fleet of only five other CBs. On this basis, NC recommends that an allowance of \$2.1m be made for the replacement of one 500kV CB only, as in the AER's draft decision.³⁴⁷

A.9.4 AER's considerations

The AER notes that SP AusNet has provided additional information in support of its revised proposal for replacement of the two 500kV CBs – information which was not made available to the AER before its draft decision.

Although the AER considers that the need for two older specification CB spares is questionable, the AER accepts NC's advice that the two 3AT5 CBs may be required to facilitate its refurbishment program. The AER accepts NC's view that the new information does not provide an adequate justification for the replacement of two 500kV CBs (i.e. including the unit replaced during the current regulatory control period). The AER agrees with NC's conclusion that SP AusNet has not made an economic argument for the replacement of a 15 year old CB at a cost of \$2.1m, especially given that it will only service a small fleet of the five 'newer specification' CBs. The AER notes NC's view that there are likely to be lower cost solutions available to retire a second CB without incurring the full replacement capex, and that these should have been considered by SP AusNet.

On the basis of NC's recommendation, and in the absence of any economic analysis supporting SP AusNet's revised proposal, the AER is not satisfied that replacement of a second 500kV CB reasonably reflects prudent and efficient capex in accordance with the NER.

A.9.5 Conclusion

Having had regard to the information provided in and with SP AusNet's revised proposal³⁴⁸, and NC's analysis of that information³⁴⁹, the AER is not satisfied that SP AusNet's revised proposal to replace two 500kV CBs for use as spares reasonably reflects the efficient costs that would be incurred by a prudent operator in achieving the capex objectives in the NER (cl.6A.6.7(c)).

³⁴⁶ *ibid.*, p.29.

³⁴⁷ *ibid.*, p.30.

³⁴⁸ NER, cl. 6A.6.7(1)

³⁴⁹ NER, cl. 6A.6.7(3)

On this basis the AER has rejected SP AusNet’s proposed forecast capex for this project, and approved a substitute forecast allowance of \$2.10m, to reflect the forecast cost of replacing a single unit. This represents a downward adjustment of \$2.10m from SP AusNet’s revised proposal of \$4.20m for this project.

Table A.23: AER’s final decision – Replacement of 500kV CBs (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER’s draft decision	0.00	2.10	0.00	0.00	0.00	0.00	2.10
SP AusNet’s revised proposal	3.50	0.70	0.00	0.00	0.00	0.00	4.20
AER’s final decision	2.10	0.00	0.00	0.00	0.00	0.00	2.10
AER’s adjustment	-1.40	-0.70	0.00	0.00	0.00	0.00	-2.10

Table source: AER draft decision, 31 August 2007, p.76; SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.121.

* Capex as incurred.

A.10 Replacement of 66kV CBs at Morwell and Horsham

A.10.1 Draft decision

In its draft decision, the AER was not satisfied that capex associated with SP AusNet’s proposed targeted replacement of 66kV (‘LG4C’ type) CBs at Morwell (MWTS) and Horsham (HOTS) reasonably reflected prudent and efficient capex required to meet the capex objectives over the forthcoming regulatory control period.

The need for targeted replacements at HOTS and MWTS was not demonstrated, given that SP AusNet’s CB failure risk model showed the CBs to be in relatively good condition. SP AusNet’s primary replacement driver – to release maintenance spares – was not justified given the opportunity to utilise 66kV LG4C units released from its station rebuild program.

On this basis, the AER’s draft decision rejected SP AusNet’s proposed forecast of \$3.49m, and did not approve an allowance for this project.

Table A.24: AER’s draft decision – Replacement of 66kV CBs (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet’s original proposal	1.27	2.06	0.14	0.02	0.00	0.00	3.49
AER’s draft decision	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AER’s adjustment	-1.27	-2.06	-0.14	-0.02	0.00	0.00	-3.49

Table source: AER draft decision, 31 August 2007, p.75

* Capex as incurred

A.10.2 Revised proposal

SP AusNet’s revised proposal reinstates the \$3.49m from its original proposal for the replacement of 66kV CBs at MWTS and HOTS.

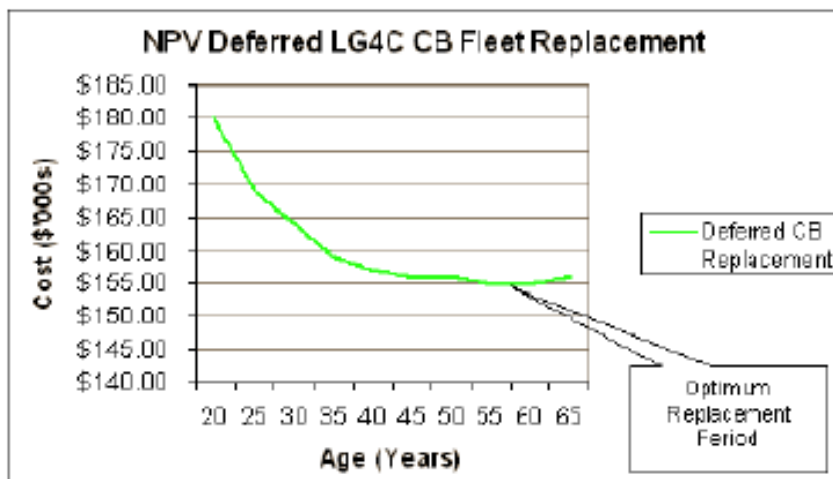
In its revised proposed SP AusNet acknowledges that asset condition was the basis for the AER’s draft decision to defer replacement of 66kV LG4C CBs, given that the CB risk model indicated only a ‘Medium-low’ risk of failure. However, SP AusNet now states that the information presented in its CB risk model, on which the AER’s draft decision relied, is problematic with respect to the 66kV LG4C CB fleet, as:

The high level risk analysis provided in SP AusNet’s supporting documentation has masked poor performing fleet cohorts that had been previously identified by personnel closely involved the management and operation of the fleet.³⁵⁰

SP AusNet states that it has undertaken some analysis of more recent failures and maintenance data to determine the optimal economic life for an LG4C CB. The results of its analysis indicate that the optimal life for an ‘average’ LG4C CB is 55-60 years, whereas that for an LG4C CB in a ‘poor performing cohort’ is 45-50 years.

The results of SP AusNet’s economic analysis are shown in figures A.8 and A.9.

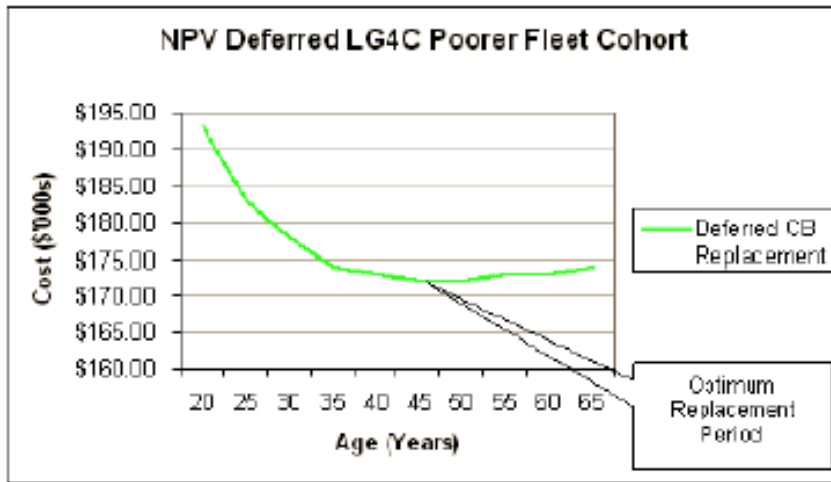
Figure A.8: Optimal economic life for an average LG4C CB



Source: SP AusNet, *Replacement program for 66 kV switch-bays*, p.13.

³⁵⁰ SP AusNet, *Replacement program for 66 kV switch-bays*, p.8.

Figure A.9: Optimal economic life for an LG4C CB in poor performing cohort



Source: SP AusNet, *Replacement program for 66 kV switch-bays*, p.13.

SP AusNet has provided information identifying the stations where ‘poor performing cohorts’ of LG4Cs exist, based on the maintenance frequency of CBs at each station as a percentage of that of a new CB. Figure A.10 illustrates the relative ranking of CBs at 16 terminal stations in terms of maintenance frequency.

Figure A.10: Maintenance frequency – ranking by station

Program	Priority															
	G N T S	S H T S	M W T S	G T S	B L T S	H O T S	H T S	F B T S	W M T S	R T S	T T S	T S T S	K T S	E R T S	S V T S	F T S
2008-14	1		3	4	5	6				10	11		13		15	
Deferred		2					7	8	9			12		14		16

Source: SP AusNet, *Replacement program for 66 kV switch-bays*, p.8.

As figure A.10 shows, SP AusNet now ranks the LG4C CBs at MWTS and HOTS third and sixth respectively in terms of priority of replacement based on maintenance frequency.

SP AusNet also identifies a number of additional drivers for its planned replacements at MWTS and HOTS, including:

- efficiency
- fault levels
- health & safety (MWTS only)
- fleet management.

A.10.3 Consultant’s review

In light of this new information, NC has considered SP AusNet’s proposed CB replacements at Morwell and Horsham in turn.

Morwell Terminal Station (MWTS)

NC notes that the condition of the 66kV LG4C CBs now appears to be the main driver for replacement at MWTS, given that the CBs at the station are the third worst in the fleet in terms of maintenance frequency. This is in contrast to SP AusNet's original proposal, which cited the primary driver as the need to release these units as spares for fleet management.

NC comments on an apparent inconsistency in SP AusNet's revised proposal, which indicates that SP AusNet has not proposed CBs at Shepparton (SHTS) for replacement in the period 2008-14 despite the higher (2nd) ranking of these units (see figure A.10). In addition, SP AusNet undertook refurbishment works at SHTS during the current regulatory control period and did not deem it necessary to replace the LG4C CBs at that time. On this basis NC states that

...although the LG4C CBs at MWTS are in a poorer condition than the average fleet, they may still not be in a sufficiently poor condition to merit a targeted replacement.³⁵¹

Despite the inconsistency identified, NC considers that on the balance of the information provided, SP AusNet has justified replacement in the next period. Specifically, NC comments on the apparent difference in criticality of the 66kV assets at MWTS compared to SHTS, which possibly goes some way towards explaining the greater risk associated with the CBs proposed for replacement at MWTS.

NC accepts that the condition of the CBs at MWTS places them in the 'poor performing cohort' with an economic life of 45-50 years according to SP AusNet's modelling. However, given that the CBs are 43 years of age, NC considers that SP AusNet's proposed replacement timing (between 2008-09 and 2009-10) is earlier than its own economic modelling suggests. On this basis NC recommends that the replacements should be deferred by two years, to align with a 47 year economic life.

Horsham Terminal Station (HOTS)

NC considers that it is unclear whether there is a specific driver that justifies the replacement of the 66kV CBs at HOTS in the forthcoming regulatory control period. In relation to the condition of the CBs, NC states that:

...SP AusNet's maintenance frequency data appears to support that the LG4C CBs at HOTS are not poor performing, and may be closer to the average condition of the fleet than the poorer fleet.³⁵²

On this basis NC considers that the LG4C CBs at HOTS will have an economic life of 55-60 years, extending well beyond the end of the 2008-14 regulatory control period. NC concludes that the replacement of the 66kV CBs at HOTS over the forthcoming period is neither prudent nor efficient, and recommends that no allowance be provided for this aspect of the project.

In summary, NC recommends inclusion of an allowance of \$1.34m for SP AusNet's proposed replacements at MWTS only.³⁵³

³⁵¹ Nuttall Consulting, *SP AusNet Revised Proposal – Review of selected ex ante projects*, 26 November 2007, p.13.

³⁵² *ibid.*, p.14.

A.10.4 AER's considerations

The AER has considered SP AusNet's proposed CB replacements at MWTS and HOTS in turn.

Morwell Terminal Station (MWTS)

The AER disagrees with NC's view that SP AusNet has provided a clear need for the replacement of the 66kV CBs at MWTS over the forthcoming period. Although the information provided by SP AusNet with respect to maintenance frequency suggests that the LG4C CBs at MWTS are in a poorer condition than CBs at other terminal stations, the AER is not satisfied that a case for replacement has been clearly demonstrated.

In particular, the AER notes that SP AusNet has not proposed to replace the 66kV LG4C CBs at SHTS over the forthcoming regulatory control period, despite their condition being of a comparable level to those at MWTS.³⁵⁴ In this respect, SP AusNet states that:

Whilst economic analysis indicates SHTS is also approaching the optimum replacement period, SP AusNet has chosen to defer pending broader station review for the subsequent review period.³⁵⁵

Further, SP AusNet has completed major refurbishment works at SHTS in the current regulatory control period (completion date June 2007), and did not consider that the condition of the 66kV CBs was sufficiently poor to warrant replacement as part of the station project. SP AusNet states in its documentation for the SHTS project that:

The study considered the 66kV switchyard also but determined that the majority of its redevelopment should be deferred to align with the overarching replacement strategy for the GEC type LG4C circuit breakers, which comprise the majority of the population.

Only the two 66kV capacitor switching circuit breakers which, on the basis of age, number of operations and observed condition have been identified for replacement under the scope of this project.³⁵⁶

The AER also notes SP AusNet's acceptance and implementation of the AER's draft decision in relation to Geelong (GTS), in which the AER rejected SP AusNet's proposal to replace 66kV LG4C CBs. According to SP AusNet's own prioritisation for the replacement of LG4C 66kV CBs as provided in its revised proposal (figure A.10), the CBs at GTS rank fourth, just one below MWTS (and above HOTS).

The AER notes that SP AusNet appears willing to accept the risk of CB failure at GTS and SHTS despite the apparently equivalent or stronger case for replacements at these stations based on the maintenance frequency data identified in SP AusNet's own analysis, and the ability to capture some efficiencies by integrating with wider projects recently undertaken or forecast at these stations. In light of this the AER is not satisfied that the condition of the CBs at MWTS is sufficiently poor to warrant a

³⁵³ *ibid.*, p.15.

³⁵⁴ SP AusNet, *Replacement program for 66 kV switch-bays*, p.8.

³⁵⁵ *ibid.*, p.16.

³⁵⁶ SP AusNet, *Ex post (capex): Refurbishment of Shepparton Terminal Station (SHTS)*, February 2007, p.5.

targeted replacement based on age or condition within the forthcoming regulatory control period.

The information provided by SP AusNet does not identify any other driver – whether economic or operational in nature – that would justify the replacement of the 66kV assets at MWTS ahead of those at SHTS, GTS or even HOTS. The AER notes NC’s advice regarding the possible higher consequences of failure at MWTS relative to SHTS, given that the assets at MWTS are predominantly bus-tie CBs, whereas those at SHTS are mainly feeder CBs. SP AusNet has not presented any analysis to demonstrate this perceived difference in criticality, nor its potential impact on the optimum economic life of the MWTS CBs relative to those at SHTS. Further, after re-examining SP AusNet’s CB risk model outputs it is evident that there is an equal number of bus-tie CBs at GTS as at MWTS, that SP AusNet has elected to keep in service.³⁵⁷

The AER is not satisfied that SP AusNet has demonstrated a clear need for the replacement of the 66kV CBs at MWTS. Given that similar condition CBs at SHTS and GTS are to remain in service (at least until 2014), the AER considers that deferred replacement of the LG4C CBs at MWTS until the regulatory control period commencing 2014-15 will still allow SP AusNet to comfortably maintain the quality, security and reliability of supply in accordance with the NER.

The AER notes SP AusNet’s advice that there are five protection schemes with ‘known problems’ at MWTS.³⁵⁸ Although the information provided by SP AusNet in support of replacing these protection schemes is very limited, the AER is satisfied that replacement is warranted during the forthcoming regulatory control period. However the AER does not accept SP AusNet’s claim that there is such a significant inefficiency (119%) associated with stand-alone replacement of these five units. While accepting that there may be some duplication of costs, the AER considers that an inefficiency factor of 20% is a reasonable if not conservative assumption given the relatively minor nature of the works.³⁵⁹ On this basis the AER has included an allowance of \$0.5m for targeted replacement of the five protection schemes identified at MWTS.

Horsham Terminal Station (HOTS)

The AER considers that SP AusNet has not presented any compelling new evidence that would justify reinstatement of its original capex forecast for targeted LG4C CB replacements at HOTS. The AER notes NC’s view that the precise driver for SP AusNet’s proposed replacements at HOTS is unclear given that its revised proposal draws on neither condition nor efficiency as drivers.³⁶⁰ On this basis the AER sees no reason to depart from the position taken in its draft decision, and accepts NC’s recommendation that the appropriate economic life for the LG4C CBs at HOTS is

³⁵⁷ SP AusNet, *Copy of CB Model Output 21 May 07.xls*.

³⁵⁸ SP AusNet, *Replacement program for 66 kV switch-bays*, pp.14-15.

³⁵⁹ It is noted that SP AusNet has proposed an ‘inefficiency factor’ ranging between 6% and 30% in its NPV analyses as part of the cost of deferral options for various station rebuild/refurbishment projects (eg. GNTS, BLTS, KTS)

³⁶⁰ Nuttall Consulting, *SP AusNet Revised Proposal – Review of selected ex ante projects*, 26 November 2007, p.14.

between 55 and 60 years, well beyond the end of the forthcoming regulatory control period.

A.10.5 Conclusion

Having considered the information provided in and with SP AusNet’s revised proposal³⁶¹, and the analysis conducted by NC,³⁶² the AER is not satisfied that SP AusNet’s proposed capex to replace the 66kV LG4C CBs at both MWTS and HOTS reasonably reflects the efficient capex that would be incurred by a prudent operator in achieving the capex objectives prescribed in the NER. SP AusNet’s willingness to defer capex on assets in apparently comparable or worse condition suggests that there are viable opex alternatives available that have been dismissed in favour of replacement.³⁶³

However the AER accepts SP AusNet’s advice regarding the need for replacement of protection schemes at MWTS.

On this basis the AER rejects SP AusNet’s forecast capex of \$3.49m and has approved a substitute allowance of \$0.5m for this project, as shown in table A.25.

Table A.25: AER’s final decision – Replacement of 66kV CBs (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER’s draft decision	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SP AusNet’s revised proposal	1.27	2.06	0.14	0.02	0.00	0.00	3.49
AER’s final decision	0.00	0.50	0.00	0.00	0.00	0.00	0.50
AER’s adjustment	-1.27	-1.56	-0.14	-0.02	0.00	0.00	-2.98

Table source: AER draft decision, 31 August 2007, p.75; SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.124.

* Capex as incurred.

A.11 Redevelopment of Brooklyn Terminal Station (BLTS)

A.11.1 Draft decision

In its draft decision, the AER was not satisfied that the total forecast capex associated with SP AusNet’s proposed redevelopment at Brooklyn Terminal Station (BLTS) reasonably reflected prudent and efficient capex required to meet the capex objectives in the NER. On this basis the AER rejected SP AusNet’s proposed allowance of \$51.86m for the BLTS project.

The AER considered that there was a clear need for the replacement of identified transformers at this station, but was not satisfied that SP AusNet’s proposed

³⁶¹ NER, cl. 6A.6.7(1)

³⁶² NER, cl. 6A.6.7(e)(3)

³⁶³ NER, cl. 6A.6.7(e)(6), (7)

replacement of CBs within the 220kV and 66kV switchyards was supported by the outputs of the CB risk model.

On this basis the AER's draft decision approved a substitute forecast of \$38.46m for this project, a reduction of \$13.40m from SP AusNet's original proposal.

Table A.26: AER's draft decision – Redevelopment of BLTS (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's original proposal	0.00	0.00	5.19	29.87	16.80	0.00	51.86
AER's draft decision	0.00	0.00	3.71	20.65	14.11	0.00	38.46
AER's adjustment	-1.27	-2.06	-1.48	-9.22	-2.69	0.00	-13.40

Table source: AER draft decision, 31 August 2007, pp.104, 298.

* Capex as incurred

A.11.2 Revised proposal

In its revised proposal SP AusNet has provided a substantial amount of new material to support reinstatement of a fully integrated project at BLTS as set out in its original proposal. Three key arguments are made:

- Four of the five 220 kV CBs were not identified correctly in the risk model submitted by SP AusNet in support of its initial proposal, and the CBs that SP AusNet is now proposing to replace were not those assessed by the AER. In addition, the CBs identified in the initial risk model were shown as 37 years old, when in fact they are 40 years old.
- The 66kV LG4C CBs are in a poorer condition than suggested by the CB risk model, and rank 5th highest in the fleet in terms of maintenance frequency.
- Economic analysis shows that the integrated BLTS project has the lowest NPV compared to options which defer specific elements of the 220kV and 66kV works.³⁶⁴

SP AusNet submits that its integrated option for the BLTS redevelopment has a lower NPV cost than the project scope contemplated in the AER's draft decision, primarily due to the opportunity to significantly reduce the number of transformers (from nine to five) at the station by combining the transformer and switchbay replacements.³⁶⁵

A.11.3 Consultant's review

NC concludes that SP AusNet's revised proposal has justified the need for the replacement of the 220kV switchyard and certain elements of the 66kV switchyard, noting:

- the clarification provided by SP AusNet as to the rationale behind its decision to replace the existing nine transformers with five

³⁶⁴ SP AusNet, *Brooklyn Terminal Station Redevelopment – Revised proposal*, 28 September 2007, pp.7-8, 16, 25.

³⁶⁵ *ibid.*, p.5.

- the revised assessment of the condition of the 220kV CBs, which now indicates that at the time of proposed replacement they will be in a condition commensurate with other 220kV CBs that the AER in its draft decision deemed efficient for SP AusNet to replace.³⁶⁶

NC accepts that the new information provided by SP AusNet demonstrates that its proposed replacement of eight of the identified 66kV LG4C CBs will be required due to the replacement of the transformers at BLTS, but considers that the need for replacement of the remaining ten units remains unclear.

NC rejects SP AusNet's claim that the LG4C CBs at BLTS are part of the 'poorer performing cohort':

...the maintenance frequency is only approximately 140% of a new CB... it is also less than the frequency of the LG4C CBs at Geelong Terminal Station – which the AER rejected based on upon its view that the condition was not poor, and SP AusNet has accepted in its revised proposal.

As such, the LG4C CBs at BLTS are probably closer to the average fleet condition than the poorest CBs, and therefore, Nuttall Consulting does not consider that the condition alone warrants replacement.³⁶⁷

NC notes that SP AusNet's NPV analysis identifies upfront replacement of these ten CBs with the other proposed works at BLTS as the least cost option, unless replacement of the CBs could be deferred until 2021. Given an optimum economic life assumption of 55-60 years for the average LG4C CB in the fleet, NC considers that a replacement date of 2021 to 2026 appears optimal for the ten CBs in question.³⁶⁸

On this basis NC recommends deferring replacement of ten out of eighteen 66kV LG4C CBs at BLTS, resulting in a downward adjustment of \$3.56m to SP AusNet's forecast allowance.³⁶⁹

A.11.4 AER's considerations

The AER notes that a major factor contributing to the reduced substitute allowance approved in its draft decision was that SP AusNet's proposed replacement of 220kV and 66kV CBs at BLTS was not supported by the outputs of its risks models. SP AusNet now advises that the 220kV CBs identified for deferral were incorrectly identified in the CB risk model provided to the AER. The AER accepts NC's view that the new CB risk model outputs suggest that these 220kV CBs are in a condition commensurate with other CBs for which a replacement allowance has been approved.

The AER accepts NC's advice that the planned transformer arrangement involving the replacement of nine transformers with five is a prudent and efficient outcome. The AER also accepts that the integrated replacement of eight 66kV CBs is required to accommodate the planned transformer replacements.

³⁶⁶ Nuttall Consulting, *SP AusNet Revised Proposal – Review of selected ex ante projects*, 26 November 2007, p.17.

³⁶⁷ *ibid.*, p.17.

³⁶⁸ *ibid.*, p.18.

³⁶⁹ *ibid.*, p.19.

However the AER is not satisfied that SP AusNet's proposal to replace an additional ten 66kV LG4C CBs as part of the integrated BLTS project reasonably reflects efficient and prudent capex. NC advises that the LG4C CBs appear closer to the 'average' in terms of condition, and that their optimum economic life is between 55-60 years. These ten CBs will be only 46 years of age at SP AusNet's proposed time of replacement (2012-13). On this basis the AER accepts NC's recommendations that replacement of these ten units be deferred, and that a replacement date of 2021-2026 is efficient and reasonable. The AER notes that a deferral date of 2021 represents the least cost option according to SP AusNet's own NPV analysis.

A.11.5 Conclusion

The AER has considered SP AusNet's revised proposal and in particular the new information provided in relation to this project.³⁷⁰ On the basis of NC's analysis,³⁷¹ the AER is satisfied that SP AusNet has demonstrated a clear need for the majority of its proposed works at BLTS. However, on the balance of the information provided, the AER is not satisfied that SP AusNet's proposed capex allowance for replacement of ten of the eighteen 66kV LG4C CBs identified at BLTS reasonably reflects the efficient costs that would be incurred by a prudent operator in achieving the capex objectives. The age and condition of these assets suggests that deferral of replacement through maintenance is an efficient and prudent approach when compared to replacement before the end of their optimum economic life.³⁷²

On this basis the AER has rejected SP AusNet's forecast capex for BLTS, and approved a substitute forecast of \$47.63m, which removes \$3.56m associated with the replacement of ten 66kV CBs from SP AusNet's proposed capex allowance.

This substitute forecast includes a contingency allowance of \$2.17m, which is \$0.67m lower than that in SP AusNet's revised proposal. The AER's conclusions regarding SP AusNet's proposed contingency allowance for station rebuild projects are set out in section 4.6.2.1.

³⁷⁰ NER, cl. 6A.6.7(e)(1)

³⁷¹ NER, cl. 6A.6.7(e)(3)

³⁷² NER, cl. 6A.6.7(e)(6), (7)

Table A.27: AER's final decision – Redevelopment of BLTS (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER's draft decision	0.00	0.00	3.71	20.65	14.11	0.00	38.46
SP AusNet's revised proposal	0.00	0.00	5.19	29.87	16.80	0.00	51.85
AER's final decision	0.00	0.00	4.76	27.43	15.44	0.00	47.63
AER's adjustment	0.00	0.00	-0.43	-2.43	-1.37	0.00	-4.23

Table source: AER draft decision, 31 August 2007, pp.104, 298; SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.125.

* Capex as incurred.

A.12 Refurbishment of Thomastown Terminal Station (TTS)

A.12.1 Draft decision

In its draft decision, the AER was not satisfied that the forecast capex associated with SP AusNet's proposed refurbishment of Thomastown Terminal Station (TTS) reasonably reflected prudent and efficient capex required to meet the capex objectives over the forthcoming regulatory control period.

While SP AusNet had demonstrated a clear need to replace the B2 transformer at TTS, the AER was not satisfied that it had identified a need to replace the B3 transformer. The AER rejected SP AusNet's forecast and approved a substitute forecast which excluded the \$6.0m allowance for replacement of the B3 transformer.

The AER was satisfied that SP AusNet's CB risk model justified the replacement of the 220kV CBs at TTS, but did not consider that the proposed replacement of 66kV CBs was justified when all of these CBs had been assessed by SP AusNet as being in relatively good condition. The AER again rejected this element of SP AusNet's forecast, and approved a substitute allowance that did not include the \$5.2m capex allowance for the 66kV CB replacements.

The AER's draft decision approved a total capex allowance for the TTS refurbishment of \$28.78m, which also excluded SP AusNet's proposed \$3.7m contingency allowance for this project.

Table A.28: AER's draft decision – Refurbishment of TTS (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's original proposal	3.90	22.92	15.37	1.54	0.00	0.00	43.73
AER's draft decision**	0.42	11.87	16.49	0.00	0.00	0.00	28.78
AER's adjustment	-3.48	-11.05	1.12	-1.54	0.00	0.00	-14.95

Table source: AER draft decision, 31 August 2007, pp.104, 302.

* Capex as incurred

** The AER's approved allowance for the TTS refurbishment in its draft decision also included minor adjustments to the expenditure profile (p.101).

A.12.2 Revised proposal

SP AusNet's revised proposal reinstates the scope of the TTS refurbishment in its original proposal, and provides new information in support of its proposed scope of works.

In support of its proposed reinstatement of the B3 transformer replacement, SP AusNet states that its transformer assessment model has been upgraded, and now shows that the core and windings of the B3 transformer have deteriorated more than originally thought. Based on its updated model, SP AusNet advises that the transformer condition ranking of the B3 unit has increased from 38 to 54, indicating a similar level of deterioration to that of the B2 transformer at TTS approved by the AER for replacement in its draft decision.³⁷³

SP AusNet states that the main drivers for its proposed replacement of the 66kV CBs are related to operational and efficiency considerations. However SP AusNet acknowledges that replacement of the 66kV feeder CBs could be deferred for one regulatory control period.³⁷⁴

SP AusNet's revised proposal includes additional NPV analysis of several refurbishment options. This analysis indicates that SP AusNet's proposed project has a marginally lower NPV than the other options, which include deferral of various elements. The NPV result is predominately driven by the additional costs SP AusNet states it will incur if the project is re-scoped such that the work must be undertaken in two stages.

A.12.3 Consultant's review

NC considers that the outputs of SP AusNet's updated transformer model indicate that the B3 transformer at TTS is in a similarly poor condition to the B2 transformer, and that replacement now appears justified.

NC also concludes that it is appropriate to make allowance for the replacement of five 66kV CBs that will be required to switch the new transformer. This will allow for the

³⁷³ SP AusNet, *Thomastown terminal station refurbishment – Capital works revised proposal*, p.5.

³⁷⁴ *ibid.*, p.5.

efficient management of outages during the transformer replacement, and integration with protection requirements.³⁷⁵

However, NC does not consider that SP AusNet has justified the replacement of the remaining 66kV feeder CBs, as the condition of the LG4C CBs at TTS appears to be better than the average in the fleet. NC notes that SP AusNet's own modelling indicates that it is reasonable and efficient for these CBs to continue to perform acceptably beyond 2020.

On this basis NC recommends deferring replacement of the remaining 66kV LG4C feeder CBs at TTS, resulting in a downward adjustment of \$2.62m from SP AusNet's proposed forecast allowance.³⁷⁶

A.12.4 AER's considerations

The AER accepts NC's conclusion that, given its apparent condition, the new information provided by SP AusNet justifies replacement of the B3 transformer as part of its proposed scope of works at TTS.

The AER also accepts NC's advice that the replacement of the five 66kV CBs necessary to switch the new B3 transformer is justified, and will allow for the efficient management of outages.

Finally, the AER accepts NC's recommendation to defer replacement of the remaining 66kV LG4C feeder CBs, which appear to be closer to 'average' rather than 'poor' condition. The AER notes that SP AusNet has classified the 66kV LG4C CBs at TTS as a low replacement priority (11 out of 16), and that its modelling suggests an economic life of between 55-60 years. The AER agrees with NC that, based on SP AusNet's NPV analysis, the deferral of these remaining 66kV feeder CBs (until at least 2017) represents the least cost option for works at TTS.

A.12.5 Conclusion

The AER has considered the information SP AusNet has provided in relation to the proposed TTS refurbishment in its revised proposal,³⁷⁷ and the conclusions NC has drawn from its analysis of that information.³⁷⁸ The AER is satisfied that SP AusNet has demonstrated a clear need for the majority of its proposed works at TTS, and that its proposed approach is in these respects both prudent and efficient.

However, the AER is not satisfied that SP AusNet's proposed capex allowance for replacement of a number of 66kV feeder CBs at TTS reasonably reflects the efficient costs that would be incurred by a prudent operator in achieving the capex objectives. As SP AusNet's own analysis suggests, deferred replacement and maintenance of these CBs throughout the forthcoming regulatory control period is the least cost option.³⁷⁹

³⁷⁵ Nuttall Consulting, *SP AusNet Revised Proposal – Review of selected ex ante projects*, 26 November 2007, p.21.

³⁷⁶ *ibid.*, p.22.

³⁷⁷ NER, cl. 6A.6.7(e)(1)

³⁷⁸ NER, cl. 6A.6.7(e)(2)

³⁷⁹ NER, cl. 6A.6.7(e)(6), (7)

On this basis the AER has rejected SP AusNet’s proposed forecast capex for the TTS refurbishment, and approved a substitute forecast allowance of \$38.19m, which includes a contingency allowance of \$0.83m (see section 4.6.2.1). This substitute forecast maintains the expenditure profile (s-curve) set out in its draft decision for the TTS project,³⁸⁰ and represents a downward adjustment of \$5.54m from SP AusNet’s revised proposal of \$43.73m for this project.

Table A.29: AER’s final decision – Refurbishment of TTS (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER’s draft decision	0.42	11.87	16.49	0.00	0.00	0.00	28.78
SP AusNet’s revised proposal	3.90	22.92	15.37	1.54	0.00	0.00	43.73
AER’s final decision	3.05	19.09	16.05	0.00	0.00	0.00	38.19
AER’s adjustment	-0.85	-3.83	0.68	-1.54	0.00	0.00	-5.54

Table source: AER draft decision, 31 August 2007, pp.104, 302; SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.126.

* Capex as incurred.

A.13 Refurbishment of Glenrowan Terminal Station (GNTS)

A.13.1 Draft decision

In its draft decision the AER was not satisfied that capex associated with SP AusNet’s proposed refurbishment of Glenrowan Terminal Station (GNTS) reasonably reflected prudent and efficient capex required to meet the capex objectives over the forthcoming regulatory control period.

The AER’s draft decision accepted that SP AusNet had presented a clear need for the replacement of the transformer, and for the refurbishment of the 220kV switchyard. While the AER noted that the transformer was not in poor condition, it was satisfied that:

- the replacement was warranted as it would release six single phase units for use as spares, and
- there were identifiable efficiencies in undertaking the transformer replacement at the same time as the 220kV switchyard refurbishment.

The AER was satisfied that the replacement of the 220kV CBs was warranted given the outputs of SP AusNet’s CB risk models, which indicated that all of the assets identified for replacement were in the ‘very high’ risk of failure category.

Based on the same risk model outputs, however, the AER was not satisfied that SP AusNet had identified the need to replace the 66kV LG4C CBs at GNTS, all of which

³⁸⁰ AER draft decision, p.101. The AER has imposed the same expenditure profile as in its draft decision, and as advised by SP AusNet for the TTS project (8%, 50%, 42%, 0%, 0%, 0%).

had been assigned a ‘medium/low’ risk ranking in the CB risk model. Based on the information provided the AER considered that the main driver of SP AusNet’s proposed replacement of the 66 kV LG4C CBs appeared to be its strategic objective to phase out all LG4C units over the next 15 years.

On this basis the AER’s draft decision rejected SP AusNet’s proposed capex allowance of \$21.32m for the GNTS project and approved a substitute forecast of \$14.90m, which excluded the 66 kV replacements and SP AusNet’s proposed contingency allowance (\$1.5m) for this project.

Table A.30: AER’s draft decision – Refurbishment of GNTS (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet’s original proposal	0.00	0.00	0.00	0.43	6.82	14.07	21.32
AER’s draft decision	0.00	0.00	0.00	0.43	3.61	10.86	14.90
AER’s adjustment	0.00	0.00	0.00	0.00	-3.21	-3.21	-6.42

Table source: AER draft decision, 31 August 2007, pp.104, 307.

* Capex as incurred

A.13.2 Revised proposal

SP AusNet’s revised proposal reinstates the capex forecast and scope of the GNTS project in its original proposal. In support of the reinstatement of the 66kV CBs, SP AusNet states that the risk model that it provided in support of its initial proposal masked the actual condition of the assets at GNTS. SP AusNet now submits that the 66kV assets at GNTS are part of a ‘poor performing cohort’, and specifically that:

- the LG4C 66kV CBs have a maintenance frequency of nearly three times that of a new CB and a mean-time-between-failure (MTBF) of 7 years, and
- the S&S 66kV CBs have the second highest maintenance requirement in the S&S fleet, with a maintenance frequency more than three times that of a new CB, and an MTBF of less than 2 years.³⁸¹

Given that all other elements of its proposed scope of works at GNTS were approved by the AER in its draft decision, SP AusNet has undertaken NPV analysis in relation to options available for the 66kV switchyard only. Its NPV analysis considers three options:

- defer replacement of all 66kV assets (as in the AER’s draft decision),
- replace 66kV assets required for compliance, construction and sequencing reasons, while deferring four 66kV line CBs,
- integrate replacement of all 66kV assets into the wider GNTS project.

Based on its analysis, SP AusNet states that its proposal for a fully integrated project represents the least-cost option for GNTS, due to efficiencies gained in design, procurement, project management and establishment costs.³⁸²

³⁸¹ SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.127.

SP AusNet also suggests that the rejection of the 66kV works by the AER should have resulted in a reduction of only \$2.9m in the AER's approved substitute allowance, rather than the \$4.9m reduction made by the AER in its draft decision.³⁸³

A.13.3 Consultant's review

NC considers that the critical piece of supporting information in SP AusNet's revised proposal for GNTS is in relation to the poor condition of the 66kV CBs at the station. NC considers that the information presented by SP AusNet regarding the condition of the 66kV CBs at GNTS is a clear indication that they belong to a 'poor performing cohort', with an economic life of between 45 and 50 years according to SP AusNet's modelling.

On this basis, NC considers that SP AusNet's proposed timing of 2011-12 for replacement of the 66kV CBs at GNTS is reasonable, given that they will be 44 years of age by that date, and:

...assuming an economic life nearer 45 years is the most appropriate for these CBs, which are the poorest in the fleet.³⁸⁴

NC also notes the additional cost efficiencies and risk benefits of integrating the 66kV works with the wider project proposed at GNTS.

In summary, NC considers that SP AusNet has sufficiently justified that it would be prudent and efficient to undertake the 66kV works at GNTS during the forthcoming regulatory control period, and recommends reinstatement of the capex allowance disallowed in the AER's draft decision.

A.13.4 AER's considerations

The AER sees no reason to depart from its draft decision in relation to the replacement of the transformer and 220kV CBs at GNTS, and remains satisfied that the associated capex forecast reasonably reflects prudent and efficient expenditure.

The AER notes the new information presented by SP AusNet indicating that the 66kV LG4C CBs at GNTS are in poor condition, and accepts NC's advice that they belong to a 'poor performing cohort' with an economic life of between 45 and 50 years. However notwithstanding the relatively high maintenance frequency of the 66kV CBs, based on the information provided by SP AusNet the AER is still not satisfied that it would be prudent or efficient to replace all of these assets during the forthcoming regulatory control period.

SP AusNet's revised proposal states that its proposal for a fully integrated project at GNTS represents the least cost option.³⁸⁵ However NPV analysis provided by SP AusNet which models several replacement options for the 66kV switchyard at GNTS indicates that this is not the case. The least cost option is in fact the option involving

³⁸² SP AusNet, *Glenrowan Terminal Station Redevelopment – Revised Proposal*, pp.14-15.

³⁸³ SP AusNet, *Replacement program for 66 kV switch-bays*, p.20.

³⁸⁴ Nuttall Consulting, *SP AusNet Revised Proposal – Review of selected ex ante projects*, 26 November 2007, p.24.

³⁸⁵ SP AusNet, *Glenrowan Terminal Station Redevelopment – Revised Proposal*, p.15.

the deferral of the replacement of four 66kV line CBs for at least three years, as indicated in table A.31 (i.e. Option 4 vs. option 1).

Table A.31: SP AusNet’s NPV analysis – 66kV switchyard at GNTS

Options	Total PV costs (\$'000s)
1) Replace all 66kV assets as part of integrated project at GNTS (preferred)	(\$5,344)
2) Defer four 66kV CBs for ONE year	(\$5,451)
3) Defer four 66kV CBs for TWO years	(\$5,350)
4) Defer four 66kV CBs for THREE years	(\$5,257)

Source: SP AusNet, *NPV GNTS 66kV switchyard replacements.xls*.

The partial deferral option involves integrated replacement of the high risk priority 66kV assets with the other works at GNTS, with deferral of the remaining 66kV CBs.

Although acknowledging that this option is feasible from a risk perspective, SP AusNet appears to dismiss the least cost option on the grounds of materiality:

Whilst addressing the highest risk assets, this option will require additional design, construction, testing and commissioning effort...

...Considering the accuracy of costs, failure probabilities and consequences used in the analysis, this option does not deliver any meaningful savings for deferral periods up to 5 years.³⁸⁶

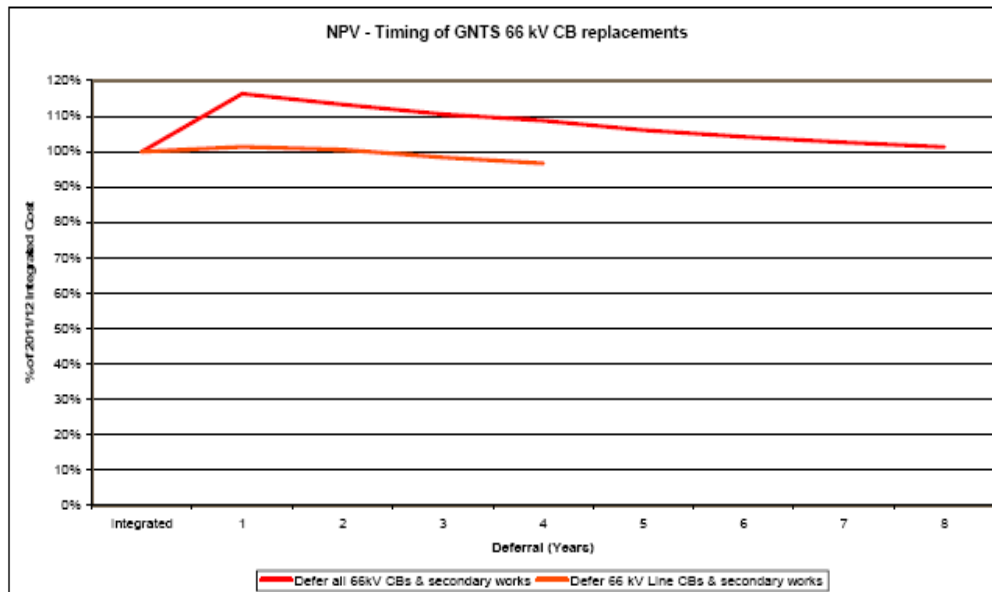
On this basis SP AusNet considers that the fully integrated project is the least cost option for its proposed works at GNTS.

The AER notes that SP AusNet has explicitly captured in its NPV analysis the ‘additional design, construction, testing and commissioning effort’ associated with undertaking the works at GNTS as two discrete projects. It is also noted that the consequences of failure of the CBs at GNTS is included as a cash flow (probability-weighted) in the NPV analysis. The AER does not consider that SP AusNet’s statement that the deferral option ‘does not deliver any meaningful savings’ survives scrutiny. Figure A.11, submitted by SP AusNet in its revised proposal, models the PV costs of the various 66kV deferral options as a percentage of the PV costs of the integrated project option.³⁸⁷

³⁸⁶ *ibid.*, p.14.

³⁸⁷ *ibid.*, p.15.

Figure A.11: Options for 66kV switchyard at GNTS



Source: SP AusNet, *Glenrowan Terminal Station Redevelopment – Revised Proposal*, p.15.

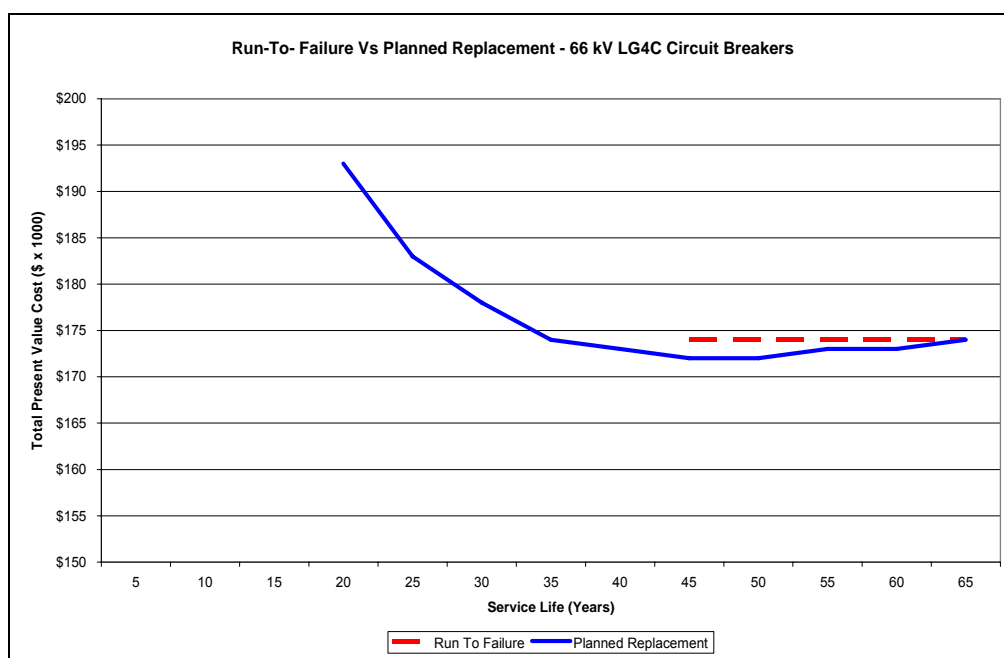
Figure A.11 illustrates two main points:

- The option to defer all 66kV assets has a higher cost (>100%) than the integrated replacement option for deferral periods up to 8 years
- The option to defer the four 66kV line CBs has a lower cost (<100%) than the integrated replacement option for deferral periods of at least 3 years.

The AER considers that these results support the part deferral option as the least cost option, provided the replacement of the CBs in question can be deferred by at least three years.

The AER accepts NC’s advice that the 66kV LG4C CBs at GNTS are in a ‘poor performing cohort’ with an economic life of between 45 and 50 years. However the AER does not consider that the assumed asset life of 45 years (rather than in the 45-50 year range) which underlies NC’s recommendation is supported by the information provided by SP AusNet in its revised proposal. SP AusNet’s analysis on the economic life of 66kV LG4C CBs in a ‘poor performing cohort’ clearly indicates that the optimised period for replacement occurs when the assets are aged between 45 and 50 years. However the PV results indicate indifference to any particular year within this five year period, such that it is equally efficient to replace the assets at any point between the ages of 45 and 50 years. This is demonstrated in figure A.12, submitted by SP AusNet in its revised proposal.

Figure A.12: Optimised age for replacement – LG4C CBs in a ‘poor performing cohort’



Source: SP AusNet, *66kV CB Chart – Planned Replacement Vs Run to Failure LG4C CB.xls*.

As figure A.12 illustrates, the gradient of the curve is flat between the ages of 45 and 50 years, indicating no discernable difference in the efficiency of replacement during this period.

Given SP AusNet’s advice that the 66kV LG4C CBs at GNTS will have delivered 44 years of service at the time of proposed replacement (2011-12), SP AusNet’s economic modelling suggests that the optimum period for replacement is at some point between the years 2012-13 and 2017-18 (i.e. between the ages of 45 and 50 years). This means that at the end of the forthcoming regulatory control period (2013-14), these assets will be aged 46 years, and have a remaining economic life of up to 4 years.³⁸⁸ SP AusNet’s option to defer replacement of four 66kV line CBs until at least 2014-15, and beyond the end of the forthcoming regulatory control period, reflects the least cost option for replacement during this optimum five year period.

The AER considers that the deferral option will allow SP AusNet to comfortably maintain the quality, reliability and security of supply, given that the 66kV assets still included for upfront replacement as part of the deferral option are considered by SP AusNet to be:

- the highest risk 66kV assets (in terms of failure probability and consequences), and
- those required for sequencing purposes to switch the new transformer.³⁸⁹

³⁸⁸ Note that this refers to ‘economic’ life, not ‘technical’ life, and does not mean that the asset has a probability of failure of 1 at the end of its economic life. The economic life is simply an analysis of the most efficient time to replace the asset, considering variables such as increasing costs of maintenance with age, and increasing risk of failure.

³⁸⁹ SP AusNet, *Glenrowan Terminal Station Redevelopment – Revised Proposal*, p.13.

On this basis the AER is not satisfied that SP AusNet’s preferred option for a fully integrated project at GNTS reasonably reflects prudent and efficient capex required to meet the capex objectives in the NER, given that replacement of lower priority assets can reasonably be deferred at a lower cost.

The AER has separately considered SP AusNet’s proposed contingency allowance. The details of the E&P analysis and the AER’s conclusions regarding SP AusNet’s proposed contingency allowance for station rebuild projects are contained at section 4.6.2.1 of this final decision.

The AER notes SP AusNet’s advice regarding the amount of the adjustment made in the AER’s draft decision.

A.13.5 Conclusion

Having considered the information provided in and with SP AusNet’s revised proposal,³⁹⁰ and NC’s analysis,³⁹¹ the AER is satisfied that SP AusNet has demonstrated a clear need for the majority of its proposed works at GNTS, and that its proposed approach is in these respects both prudent and efficient.

However, the AER is not satisfied that SP AusNet’s proposed capex allowance for replacement of a number of 66kV LG4C line CBs at GNTS reasonably reflects the efficient costs that would be incurred by a prudent operator in achieving the capex objectives. In this respect the AER notes that SP AusNet’s proposal dismisses efficient deferral alternatives in favour of its preferred integrated replacement option, in contradiction of its own NPV analysis.

On this basis the AER has rejected SP AusNet’s proposed forecast capex for the GNTS refurbishment, and approved a substitute forecast allowance of \$17.98m, which includes a contingency allowance of \$0.45m (see section 4.6.2.1). This substitute forecast represents a downward adjustment of \$3.34m from SP AusNet’s revised proposal of \$21.32m for this project.³⁹²

Table A.32: AER’s final decision – Refurbishment of GNTS (\$m, 2007-08)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER’s draft decision	0.00	0.00	0.00	0.43	3.61	10.86	14.90
SP AusNet’s revised proposal	0.00	0.00	0.00	0.43	6.82	14.07	21.32
AER’s final decision	0.00	0.00	0.00	0.41	4.16	13.42	17.98
AER’s adjustment	0.00	0.00	0.00	-0.02	-2.66	-0.66	-3.34

Table source: AER draft decision, 31 August 2007, pp.104, 307; SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.128.

* Capex as incurred.

³⁹⁰ NER, cl. 6A.6.7(e)(1)

³⁹¹ NER, cl. 6A.6.7(e)(3)

³⁹² The AER’s adjustment of \$2.29m to remove the cost of replacing the four 66kV CBs is taken from SP AusNet’s NPV analysis for the GNTS project.

A.14 Refurbishment of Keilor Terminal Station (KTS)

A.14.1 Draft decision

In its draft decision, the AER was not satisfied that capex associated with SP AusNet's proposed refurbishment of Keilor Terminal Station (KTS) reasonably reflected prudent and efficient capex required to meet the capex objectives over the forthcoming regulatory control period.

The AER accepted that SP AusNet's forecast capex for proposed works in the 500kV and 220kV switchyards reasonably reflected prudent and efficient capex required to meet the capex objectives in the NER. However, the AER rejected SP AusNet's proposed replacement of 66kV CBs at KTS, given that the outputs of SP AusNet's CB risk model indicated the assets to be in relatively good condition.

On this basis the AER's draft decision rejected SP AusNet's proposed forecast of \$39.62m and approved a substitute forecast of \$31.0m. The approved allowance represented a reduction of \$8.62m to exclude the forecast cost of the 66kV CB replacements and SP AusNet's proposed \$3.42m contingency allowance.

Table A.33: AER's draft decision – Refurbishment of KTS (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's original proposal	15.14	12.22	0.25	3.92	8.09	0.00	39.62
AER's draft decision	12.72	7.73	0.25	3.06	7.23	0.00	31.00
AER's adjustment	-2.42	-4.49	0.00	-0.86	-0.86	0.00	-8.62

Table source: AER draft decision, 31 August 2007, pp.104, 310.

* Capex as incurred

A.14.2 Revised proposal

In its revised proposal, SP AusNet reinstates the KTS project as put forward in its original proposal, including the forecast capex for replacement of 66kV CBs excluded from the allowance approved by the AER in its draft decision. SP AusNet's revised proposal provides a breakdown of the different types of 66kV assets at KTS, and highlights that the key drivers for the reinstatement of its original proposed scope of works include:

- The 66kV LG4C CBs are operating close to their full fault level, and will need to be replaced before the planned augmentation at KTS in 2011-12.
- There are a number of high-risk items of 66kV equipment that require replacement due to OH&S concerns (eg. CTs, surge arrestors).

SP AusNet's NPV analysis considers the 'do nothing' option, a deferral option involving targeted replacement of high-risk 66kV equipment, and an option for a fully integrated project. SP AusNet states that the integrated replacement of the 66kV

assets with the transformers and the 220kV switchyard at KTS is the least cost option unless the 66kV CB replacements can be deferred until 2017.³⁹³

A.14.3 Consultant's review

NC considers that SP AusNet's revised proposal does not present a clear case for the reinstatement of all the 66kV CBs identified for replacement at KTS, noting that SP AusNet has assigned these LG4C units a ranking of 13 out of 16 in terms of priority for replacement based on condition. On this basis NC considers that the 66kV CBs at KTS are closer to the 'average' fleet in terms of condition, and that:

This suggests that it is reasonable to expect that these CBs will continue to perform acceptably beyond 2018. This is past the date that SP AusNet's NPV analysis indicated the deferral would be required to be the most efficient option (i.e. 2017).³⁹⁴

NC considers that the augmentation aspects of the replacement decision (the 66kV LG4C CB fault level issues identified by SP AusNet at KTS) should be initiated by VENCORP as the network planner.³⁹⁵

Based on the information provided, NC accepts that there is a need to replace the poor performing 66kV equipment identified by SP AusNet for OH&S reasons (including the S&S CB, CTs, VT, and surge arrestors).

On the basis that the economic life of the 66kV LG4C CBs at KTS is between 55 and 60 years, NC concludes that SP AusNet's deferral option (which still allows for replacement of high-risk 66kV assets) represents the least cost option for the KTS project. NC recommends removing an allowance of \$2.83m to replace the 66kV CBs at KTS to reflect the smaller scope of this option.

A.14.4 AER's considerations

The AER is not satisfied that SP AusNet has justified the need to replace all of the 66kV assets identified at KTS.

The AER accepts NC's advice that the 66kV LG4C CBs at KTS are closer to the average fleet in terms of maintenance frequency, such that these assets are expected to perform acceptably beyond 2018. However, the AER also accepts NC's advice that the high risk 66kV equipment at KTS requires replacement in the forthcoming regulatory control period.

On this basis, the AER considers that the deferral option presented by SP AusNet in its revised proposal for KTS represents the least cost option, which includes:

- Upfront replacement of the identified high risk 66kV equipment with the other elements of the proposed scope of works at KTS, and
- Deferral of 66kV LG4C CB replacements until at least 2018.

³⁹³ SP AusNet, *Keilor Terminal Station 220/66kV Refurbishment – Revised Proposal*, p.4.

³⁹⁴ Nuttall Consulting, *SP AusNet Revised Proposal – Review of selected ex ante projects*, 26 November 2007, p.26.

³⁹⁵ *ibid.*, p.26.

Given NC's advice that the 66kV LG4C CBs at KTS are expected to perform acceptably beyond 2018, the AER considers that the deferral option presented is both feasible and the least cost option. Given that the highest risk 66kV assets will be targeted for upfront replacement at KTS, the AER considers that SP AusNet will comfortably maintain the quality, security and reliability of supply over the forthcoming regulatory control period.

The AER has separately considered SP AusNet's proposed contingency allowance. The details of the E&P analysis and the AER's conclusions regarding SP AusNet's proposed contingency allowance for station rebuild projects are contained at section 4.6.2.1 of this final decision.

A.14.5 Conclusion

On the basis of the information provided in support of SP AusNet's revised proposal³⁹⁶ and the analysis undertaken by NC,³⁹⁷ the AER is satisfied that SP AusNet has demonstrated a clear need for the majority of its proposed works at KTS, and that its proposed approach is in these respects both prudent and efficient.

However, the AER is not satisfied that SP AusNet's proposed capex allowance for a fully integrated replacement project reasonably reflects that which would be incurred by a prudent operator in achieving the capex objectives, given that deferred replacement of lower priority 66kV LG4C assets at KTS presents a viable alternative at a lower cost.

On this basis the AER has rejected SP AusNet's proposed forecast capex for the KTS refurbishment, and approved a substitute forecast allowance of \$34.17m, which includes a contingency allowance of \$0.81m (see section 4.6.2.1). This substitute forecast represents a downward adjustment of \$5.45m from SP AusNet's revised proposal of \$39.62m for this project.

Table A.34: AER's final decision – Refurbishment of KTS (\$m, 2007-08)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER's draft decision	12.72	7.73	0.25	3.06	7.23	0.00	31.00
SP AusNet's revised proposal	15.14	12.22	0.25	3.92	8.09	0.00	39.62
AER's final decision	14.58	8.11	0.23	3.67	7.57	0.00	34.17
AER's adjustment	-0.55	-4.10	-0.02	-0.25	-0.52	0.00	-5.45

Table source: AER draft decision, 31 August 2007, pp.104, 310; SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.129.

* Capex as incurred.

³⁹⁶ NER, cl. 6A.6.7(e)(1)

³⁹⁷ NER, cl. 6A.6.7(e)(3)

A.15 Refurbishment of Geelong Terminal Station (GTS)

A.15.1 Draft decision

In its draft decision, the AER was not satisfied that capex associated with SP AusNet's proposed refurbishment of GTS reasonably reflected prudent and efficient capex required to meet the capex objectives over the forthcoming regulatory control period.

The AER accepted that SP AusNet had justified the replacement of the two 220/66 kV transformers as well as the refurbishment of the 220kV switchyard, but rejected the proposed replacement of the 66kV CBs. The primary reason for the AER's rejection of the 66kV CB replacements at GTS was that the assets had been assigned a 'medium-low' risk ranking in SP AusNet's CB risk model, indicating that they were in relatively good condition.

On this basis the AER's draft decision rejected SP AusNet's proposed capex allowance of \$28.50m for the GTS project and approved a substitute forecast of \$20.60m, which excluded SP AusNet's proposed \$5.41m allowance for replacement of the 66kV CBs and its proposed contingency allowance of \$2.48m.

Table A.35: AER's draft decision – Refurbishment of GTS (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
SP AusNet's original proposal	10.42	5.90	12.17	0.00	0.00	0.00	28.50
AER's draft decision	7.40	5.07	8.13	0.00	0.00	0.00	20.60
AER's adjustment	-3.02	-0.83	-4.04	0.00	0.00	0.00	-7.89

Table source: AER draft decision, 31 August 2007, pp.104, 315.

* Capex as incurred

A.15.2 Revised proposal

SP AusNet's revised proposal accepts the AER's draft decision position to remove the costs associated with replacement of the 66kV CBs at GTS,³⁹⁸ but reinstates its proposed contingency allowance of \$2.48m.

The AER notes that the cost templates submitted by SP AusNet with its revised proposal indicate a proposed forecast capex allowance of \$19.6m (as incurred, \$2007-08) for the GTS project, understating the draft decision allowance.³⁹⁹ Given the discrepancy identified in the revised cost templates submitted by SP AusNet, the AER sought clarification on the actual amount of capex proposed for this project. SP AusNet advised that an error was made in generating its revised cost templates with respect to the GTS project, and that the correct proposed amount should be \$26.5m.⁴⁰⁰ SP AusNet states that this amount implements the AER's draft decision, and adds \$3.5m of capex carried over from the current regulatory control period.

³⁹⁸ SP AusNet, *Electricity Transmission Revised Proposal*, 12 October 2007, p.130.

³⁹⁹ SP AusNet, *SPA Revised Templates – Cost information lodged 12102007.xls*.

⁴⁰⁰ SP AusNet, email to the AER, 12 December 2007.

A.15.3 AER's considerations

The AER notes SP AusNet's acceptance of its draft decision position in relation to the 66kV switchyard at GTS. The apparent inconsistency in SP AusNet's acceptance that this adjustment is appropriate and its proposed reinstatement of other (lower priority) 66kV LG4C CB replacements has been noted above.

The AER has identified that an amount of \$2.1m has been removed from SP AusNet's revised past capex template which relates to the ongoing GTS refurbishment project. On this basis the AER accepts that the AER's draft decision approved allowance for the GTS project should increase by an equivalent amount of \$2.1m. However a further increase of \$1.4m as advised by SP AusNet appears unsubstantiated.

The AER has assumed that SP AusNet's 'corrected' revised proposal amount includes its original proposed contingency allowance for GTS of \$2.48m. The AER has separately considered SP AusNet's proposed contingency allowance. The details of the E&P analysis and the AER's conclusions regarding SP AusNet's proposed contingency allowance for station rebuild projects are contained at section 4.6.2.1 of this final decision.

A.15.4 Conclusion

Given SP AusNet's acceptance in its revised proposal of the AER's draft decision with respect to the GTS project, the AER is satisfied that a forecast capex allowance of \$20.6m for this project (excluding a contingency allowance) reasonably reflects the capex criteria, taking into account the capex factors.

The AER has made an upwards adjustment of \$2.1m to its draft decision allowance to include the amount of capex actually carried over from the current regulatory control period. The AER has rejected \$1.4m included in SP AusNet's 'corrected' proposed forecast capex for the GTS project on the basis that this amount has not been substantiated by SP AusNet.

Finally, on the basis of the analysis contained at section 4.6.2.1 of this final decision, the AER has rejected SP AusNet's proposed contingency allowance of \$2.48m for this project and approved a substitute allowance of \$0.47m.

In sum, the AER has approved an allowance of \$23.15m for the GTS project, which represents an upwards adjustment of \$3.56m from SP AusNet's (initial) revised proposal of \$19.6m.

Table A.36: AER's final decision – Refurbishment of GTS (\$m, 2007-08)*

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AER's draft decision	7.40	5.07	8.13	0.00	0.00	0.00	20.60
SP AusNet's revised proposal (as advised)	12.70	4.50	9.30	0.00	0.00	0.00	26.50
SP AusNet's revised proposal (revised cost templates)	11.16	2.75	5.68	0.00	0.00	0.00	19.58
AER's final decision	9.67	5.18	8.30	0.00	0.00	0.00	23.15
AER's adjustment	-1.48	2.43	2.62	0.00	0.00	0.00	3.56

Table source: AER draft decision, 31 August 2007, pp.104, 315; SP AusNet, email to the AER, 12 December 2007; SP AusNet, *SPA Revised Templates – Cost information lodged 12102007.xls*.

* Capex as incurred.

Appendix B: Service Performance Incentive Scheme

B.1 Service Performance Parameter Definitions

Parameter 1: Transmission circuit availability

<i>Sub-parameters</i>	<i>Total circuit availability</i> <i>Transmission circuit availability (peak critical)</i> <i>Transmission circuit availability (peak non-critical)</i> <i>Transmission circuit availability (intermediate critical)</i> <i>Transmission circuit availability (intermediate non-critical)</i>
Unit of measure	Percentage of total possible hours available
Source of data	TNSP outage reports and system for circuit availability* Agreed list of critical circuits and plant* A circuit element is an item of primary transmission equipment including a line (whether overhead and/or underground), power transformer, phase shifting transformer, static var compensator, bus or line reactor, capacitor bank and voltage regulator, but does not include individual circuit breakers and isolators. It also does not include secondary transmission equipment such as protection equipment. SP AusNet has provided a list of circuit elements. New circuit elements are added when they are placed in service A peak period applies from the first Monday in November immediately preceding the 20th day of November, through to the first Friday in March, immediately after the 11th of March. The peak period applies on weekdays between the hours of 1100 and 2200. Public holidays, weekends and any time between the hours of 2201 and 0659 are considered off-peak* An intermediate period applies from the 1st of June through to the 31st of August inclusive, between the hours of 0700 and 2200. All weekends, public holidays and any time between the hours of 2201 and 1059 are considered off-peak* An off-peak period is all other times (that are not a peak or intermediate period)*

Definition/formula Formula:

$$\frac{\text{No. hours per annum defined (critical / non – critical) circuits are available} \times 100}{\text{Total possible number of defined circuit hours}}$$

Definition: The actual circuit hours available for defined (critical/non critical) transmission circuits divided by the total possible defined circuit hours available

Note that there will be an annual review of the nominated list of critical circuits/system components

Inclusions ‘Circuits’ includes overhead lines, underground cables, power transformers, phase shifting transformers, static var compensators, capacitor banks, and any other primary transmission equipment essential for the successful operation of the transmission system (SP AusNet to provide lists)

Circuit ‘unavailability’ to include outages from all causes including planned, forced and emergency events, including extreme events

Exclusions Unregulated transmission assets.

Connection assets

Exclude from ‘circuit unavailability’ any outages shown to be caused by a fault or other event on a ‘3rd party system’ e.g. intertrip signal, generator outage, customer installation (TNSP to provide lists)

Exclude from ‘circuit availability (peak critical)’ and ‘circuit availability (peak non-critical)’ any outages of shunt reactors*

Outages to control voltages within required limits, both as directed by NEMMCO and where NEMMCO does not have direct oversight of the network (in both cases only where the element is available for immediate energisation if required)*

Fault-level mitigation works, except for that associated with JLTS 220 kV Fault Limiting Reactors and Fault Level Mitigation Works at JLTS and MWTS; and WMTS 66 kV Bus Tie Series Fault Limiting Reactor*

Force majeure events

Parameter 2: Loss of supply event frequency

Sub-parameters Number of events greater than 0.05 system minutes per annum

Number of events greater than 0.3 system minutes per annum

Unit of measure	Number of events per annum
Source of data	TNSP outage reports and system for circuit availability
Definition/formula	<p>System minutes are calculated for each supply interruption by the “Load Integration Method” using the following formula:</p> <p>Formula:</p> $\text{System minute} = \frac{\Sigma (\text{MWh unsupplied} \times 60)}{\text{MW peak demand}}$ <p>where:</p> <p>MWh unsupplied is the energy not supplied as determined by using NEM metering and substation load data. This data is used to estimate the profile of the load over the period of the interruption by reference to historical load data.</p> <p>Period of the interruption starts when a loss of supply occurs and ends when SP AusNet offers supply restoration to the customer.</p> <p>MW peak demand means the maximum amount of aggregated electricity demand recorded at entry points to the SP AusNet transmission network and interconnector connection points at any time previously.</p> <p>The performance parameter applies to exit points only.</p> <p>An interruption >Y system minute(s) also registers as a >X system minute(s) event.</p>
Inclusions	<p>All unplanned outages exceeding the specified impact (that is, 0.05 system minutes and 0.3 system minutes)</p> <p>All parts of the regulated transmission system</p> <p>Extreme events</p> <p>Forced outages where notification to affected customers is less than 24 hours (except where NEMMCO reschedules the outage after notification has been provided).</p>
Exclusions	<p>Unregulated transmission assets (e.g. some connection assets)</p> <p>Successful reclose events (less than 1 minute duration)</p> <p>Any outages shown to be caused by a fault or other event on a ‘3rd party system’ e.g. intertrip signal, generator outage, customer installation</p> <p>Planned outages</p>

Force majeure events

Parameter 3: Average outage duration

Sub-parameters *Transmission lines*
Transmission transformers

Unit of measure Minutes

Source of data TNSP outage reports and system

Definition/formula

Formula:

Aggregate minutes duration of all unplanned outages

Number of events

Definition: The cumulative summation of the outage duration time for the period, divided by the number of outage events during the period

The start of each outage event is the time of the interruption of the first circuit element. The end of each outage event is the time that the last circuit element was restored to service*

The impact of each event is capped at 7 days*

Inclusions Faults on all parts of the regulated transmission system (connection assets, interconnected system assets)

All forced and fault outages whether or not loss of supply occurs

Exclusions Planned outages

Momentary interruptions (duration of less than one minute)

Force majeure events

Note: Items marked * were not included in SP AusNet's parameter definitions at Part 1, Appendix B of the Service Target Performance Incentive Scheme and were to be included in the transmission determination.

B.2 Definition of force majeure

For the purpose of applying the service target performance incentive scheme, force majeure event means any event, act or circumstance or combination of events, acts and circumstances which (despite the observance of good electricity industry practice) is beyond the reasonable control of the part affected by any such event, which may include, without limitation, the following:

- fire, lightning, explosion, flood, earthquake, storm, cyclone, action of the elements, riots, civil commotion, malicious damage, natural disaster, sabotage, act of a public enemy, act of God, war (declared or undeclared), blockage, revolution, radioactive contamination, toxic or dangerous chemical contamination or force of nature
- action or inaction by a court, government agency (including denial, refusal or failure to grant any authorisation, despite timely best endeavour to obtain same)
- strikes, lockouts, industrial and/or labour disputes and/or difficulties, work bans, blockades or picketing
- acts or omissions (other than failure to pay money) of a party other than the TNSP which party either is connected to or uses the high voltage grid or is directly connected to or uses a system for the supply of electricity which in turn is connected to the high voltage grid
- where those acts or omissions affect the ability of the TNSP to perform its obligations under the service standard by virtue of that direct or indirect connection to or use of the high voltage grid.

In determining what force majeure events should be excluded the AER will consider the following:

- Was the event unforeseeable and its impact extraordinary, uncontrollable and not manageable?
- Does the event occur frequently? If so how did the impact of the particular event differ?
- Could the TNSP, in practice, have prevented the impact (not necessarily the event itself)?
- Could the TNSP have effectively reduced the impact of the event by adopting better practices?

B.3 Calculation of performance

The following tables and figures represent the scale of the financial penalty or reward (y-axis) resulting from SP AusNet's performance measure of circuit availability (x-axis). Tables C.1 – C.9 show the set of linear equations that are represented in figures C.1 – C.9.

The final s-factor result for each calendar year should be determined by the following formula:

$$S_{ct} = S1 + S2 + S3 + S4 + S5 + S6 + S7 + S8 + S9$$

Where:

S_{ct} = the total service standards factor (s – factor)

ct = the time period/calendar year

S1 = s-factor for circuit availability - total

S2 = s-factor for circuit availability – peak critical

S3 = s-factor for circuit availability – peak non - critical

S4 = s-factor for circuit availability – intermediate critical

S5 = s-factor for circuit availability – intermediate non-critical

S6 = s-factor for loss of supply events > 0.05 system minutes

S7 = s-factor for loss of supply events > 0.3 system minutes

S8 = average outage duration – lines (capped 7 days)

S9 = average outage duration – transformers (capped 7 days)

B.4 STPIS parameters

Figure B.1 Circuit availability — Total

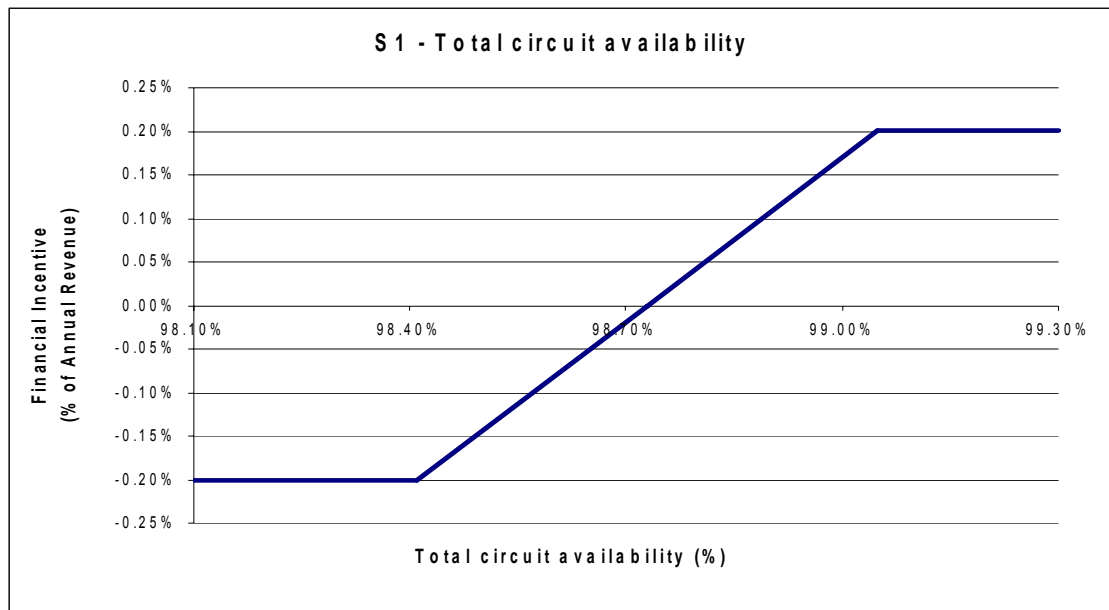


Table B.1 Circuit availability — Total (%)

Parameter	Collar	Target	Cap
Circuit availability — Total	98.41	98.73	99.05
Weighting	-0.20	0	0.20

Figure B.2 Circuit availability — Peak critical

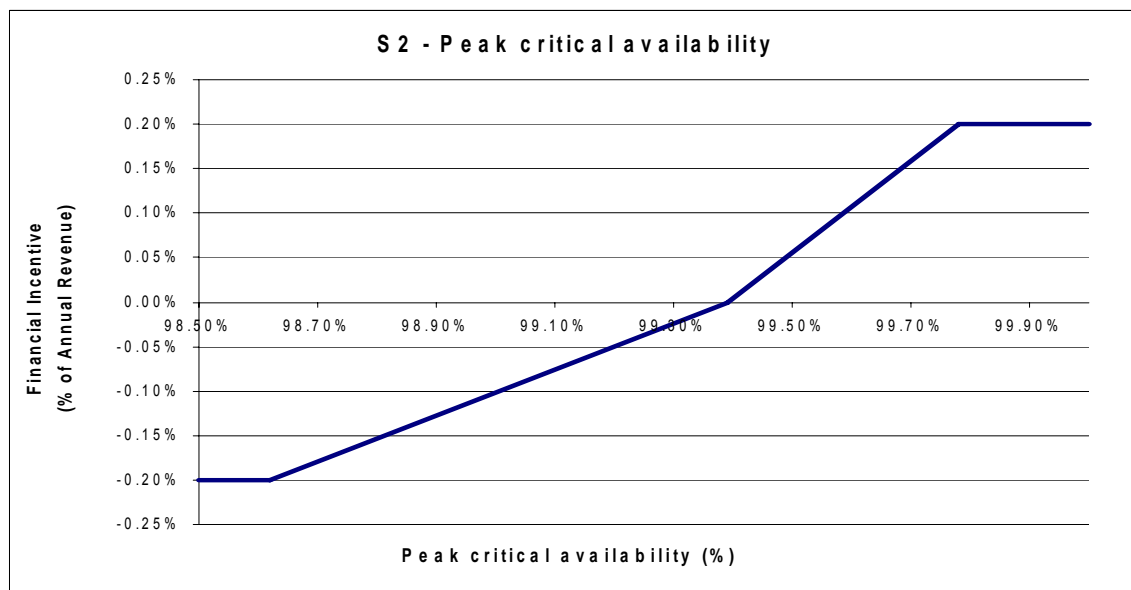


Table B.2 Circuit availability — Peak critical (%)

Parameter	Collar	Target	Cap
Circuit availability — Peak critical	98.62	99.39	99.78
Weighting	-0.20	0	0.20

Figure B.3 Circuit availability — Peak non-critical

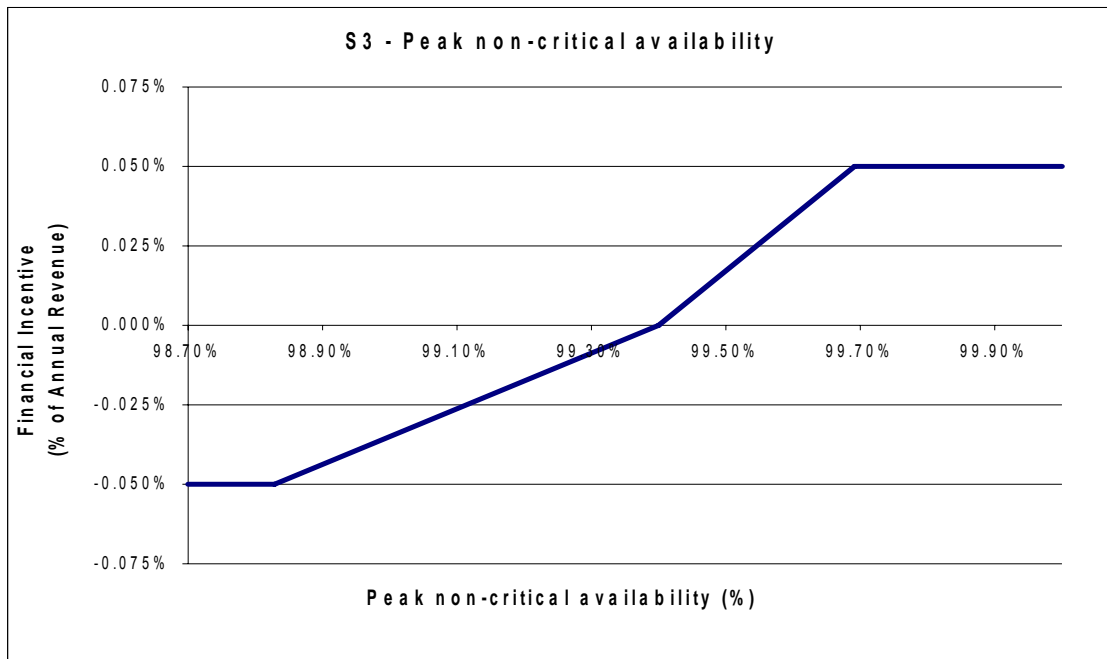


Table B.3 Circuit availability — Peak non-critical (%)

Parameter	Collar	Target	Cap
Circuit availability — Peak non-critical	98.83	99.40	99.69
Weighting	-0.05	0	0.05

Figure B.4 Circuit availability — Intermediate critical

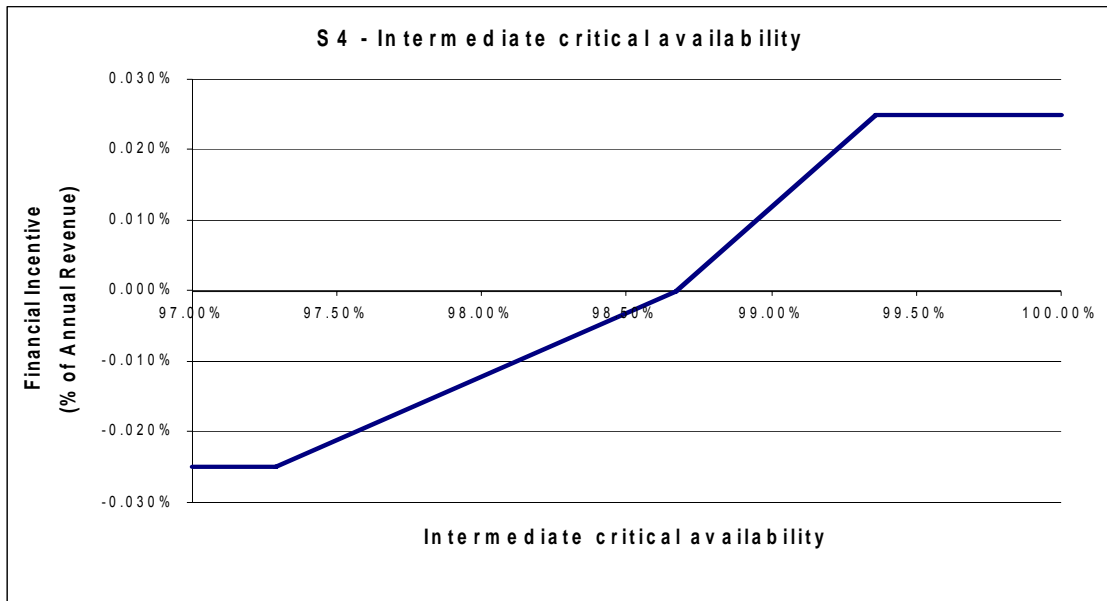


Table B.4 Circuit availability — Intermediate critical (%)

Parameter	Collar	Target	Cap
Circuit availability — Intermediate critical	97.29	98.67	99.36
Weighting	-0.025	0	0.025

Figure B.5 Circuit availability — Intermediate non-critical

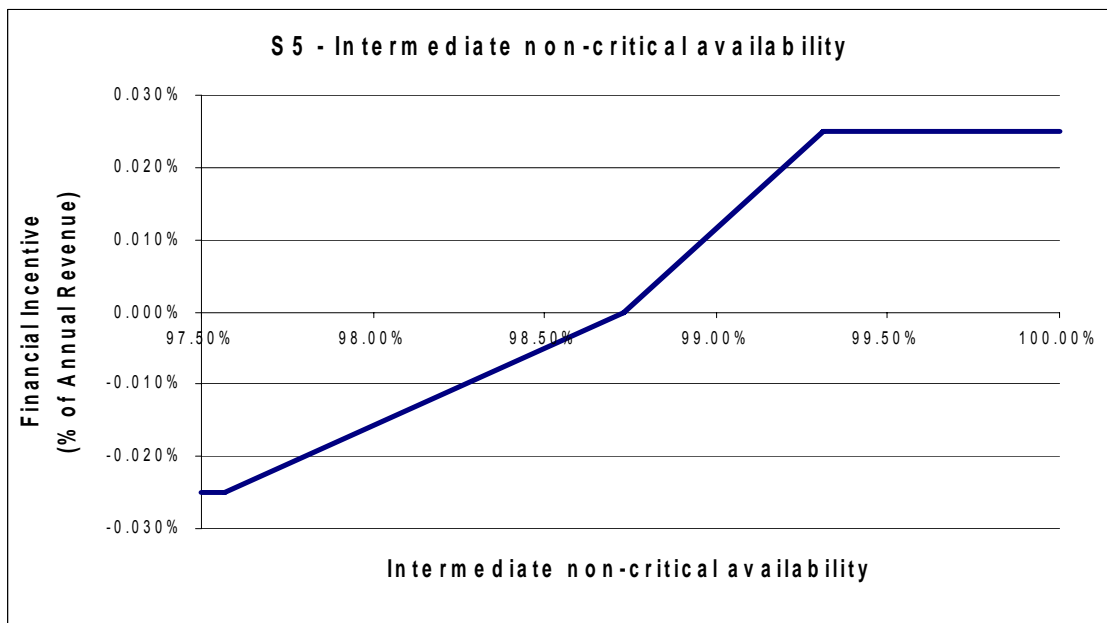


Table B.5 Circuit availability — Intermediate non-critical (%)

Parameter	Collar	Target	Cap
Circuit availability — Intermediate non-critical	97.57	98.73	99.31
Weighting	-0.025	0	0.025

Figure B.6 Loss of supply events > 0.05 system minutes

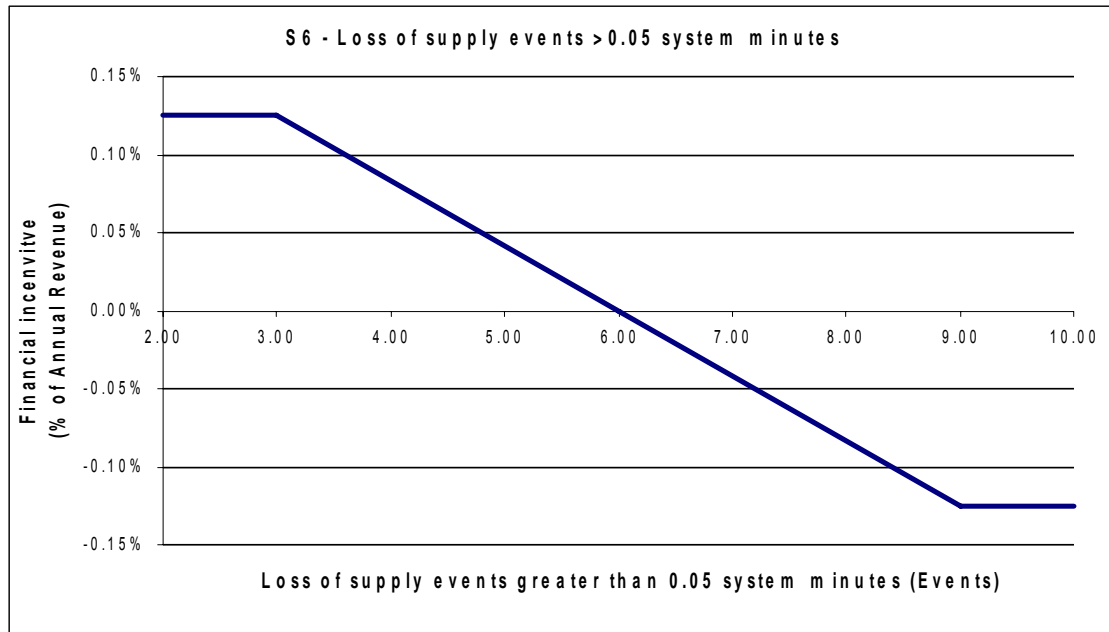


Table B.6 Loss of supply events > 0.05 system minutes (%)

Parameter	Collar	Target	Cap
Loss of supply events > 0.05 system minutes	9	6	3
Weighting	-0.125	0	0.125

Figure B.7 Loss of supply events > 0.3 system minutes

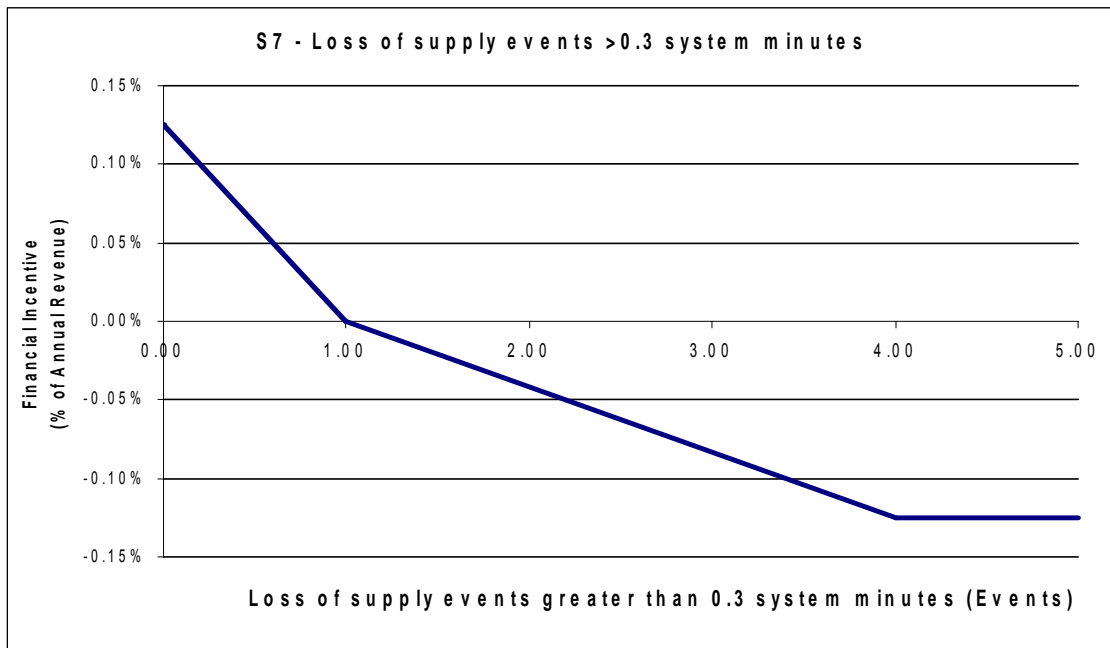


Table B.7 Loss of supply events > 0.3 system minutes (%)

Parameter	Collar	Target	Cap
Loss of supply events > 0.3 system minutes	4	1	0
Weighting	-0.125	0	0.125

Figure B.8 Average outage duration — lines

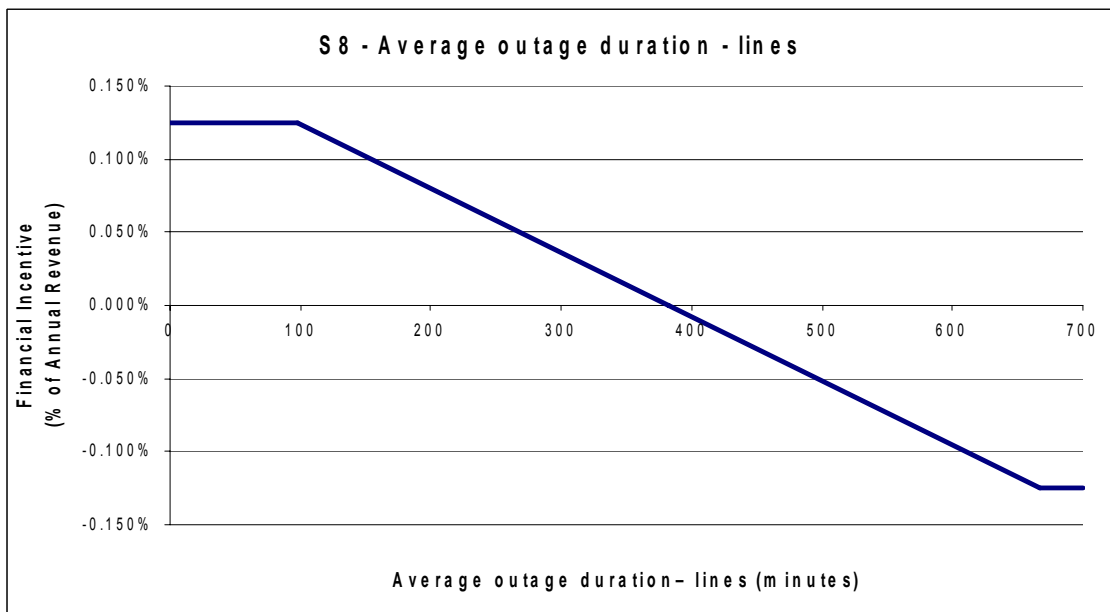


Table B.8 Average outage duration — lines (%)

Parameter	Collar	Target	Cap
Average outage duration — lines	667	382	98
Weighting	-0.125	0	0.125

Figure B.9 Average outage duration — transformers

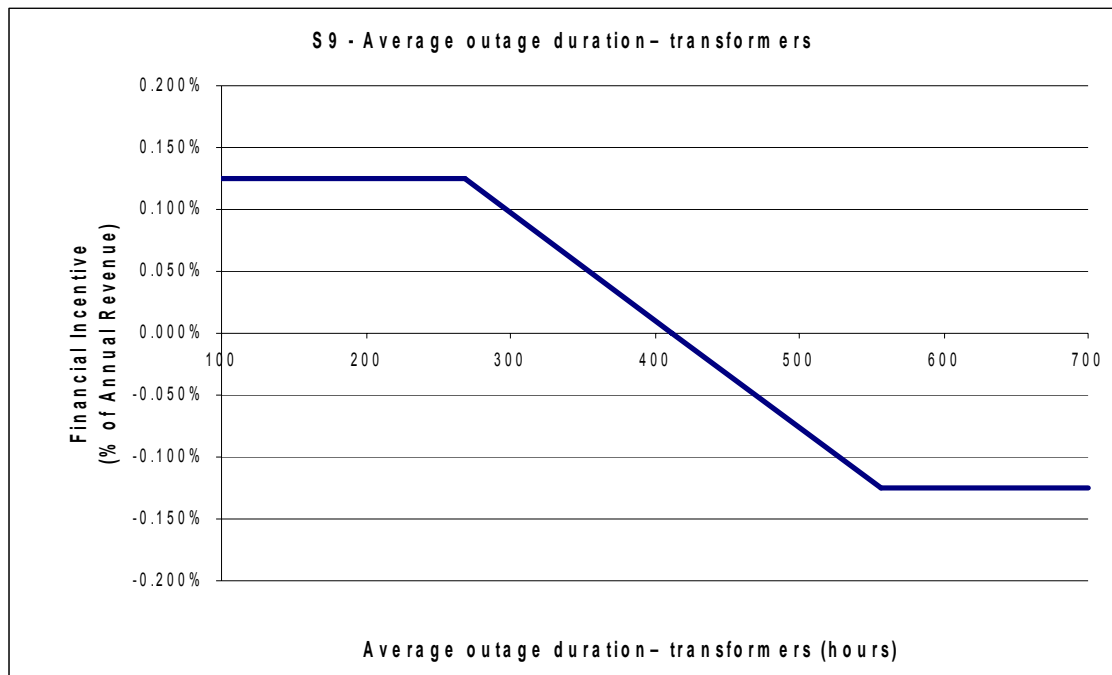


Table B.9 Average outage duration — transformers (%)

Parameter	Collar	Target	Cap
Average outage duration — transformers	556	412	268
Weighting	-0.125	0	0.125

Glossary

AARR	Aggregate annual revenue requirement
ABARE	Australian Bureau of Agricultural and Resource Economics
ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
ACG	Allen Consulting Group
AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
AIS	Availability Incentive Scheme
AMS	SP AusNet's Asset Management Strategy
ASRR	Annual service revenue requirement
AUD	Australian Dollar
AWE	Average Weekly Earnings
AWOTE	Average Weekly Ordinary Time Earnings
BATS	Ballarat Terminal Station
BETS	Bendigo Terminal Station
BLTS	Brooklyn Terminal Station
bp	basis points
bppa	basis points per annum
BTS	Brunswick Terminal Station
capex	capital expenditure
CAPM	Capital Asset Pricing Model
CB	Circuit Breaker
CDS	Credit Default Swap
CEO	Chief Executive Officer
CEPU	Communication Electrical & Plumbing Union
CGS	Commonwealth Government Securities
CIGRE	International Council on Large Electric Systems
CPI	Consumer Price Index

CT	Current Transformer
CVT	Current Voltage Transformer
D/V	proportion of debt capital to total capital funding
DDTS	Dederang Terminal Station
DNSP	Distribution Network Service Provider
DRP	Draft statement of principles for the regulation of transmission revenues, 27 May 1999
DRP	Debt Risk Premium
E/V	proportion of equity capital to total capital funding
EBSS	Efficiency benefit sharing scheme
ENA	Energy Networks Association
ESCV	Essential Services Commission of Victoria
ETC	Estimated cost of corporate income tax
EUAA	Energy Users Association of Australia
EUCV	Energy Users Coalition of Victoria
FDC	finance during construction
GDP	Gross Domestic Product
GIS	Gas Insulated Switchgear
GNTS	Glenrowan Terminal Station
GTS	Geelong Terminal Station
HOTS	Horsham Terminal Station
HR	Human Relations
HTS	Heatherton Terminal Station
HWPS	Hazelwood Power Station
HWTS	Hazelwood Terminal Station
IEC	International Electrotechnical Commission
IPO	Initial Public Offering
IT	Information Technology
JLTS	Jeeralang Terminal Station
KGTS	Kerang Terminal Station

KTS	Keilor Terminal Station
kV	kilo Volt
LME	London Metals Exchange
LYPS	Loy Yang Power Station
m	million
MAR	Maximum Allowed Revenue
MNSP	Market Network Service Provider
MRP	Market Risk Premium
MTBF	Mean Time Between Failure
MTS	Malvern Terminal Station
MVA	mega Volt Ampere
MWh	megawatt hour
MWTS	Morwell Terminal Station
NEC	National Electricity Code
NEMMCO	National Electricity Market Management Company
NER	National Electricity Rules
NPV	Net Present Value
NTSC	Negotiated transmission services criteria
NW	North-West
O&M	Operating & Maintenance
OHS	Occupational Health & Safety
opex	operating expenditure
OPWG	Optical Fibre Ground Wire
ORC	Optimised replacement cost
pa	per annum
PB	PB Strategic Consulting
PPI	Producer Price Index
PTRM	Post-Tax Revenue Model
PV	Present Value

RAB	Regulatory Asset Base
RBA	Reserve Bank of Australia
RCTS	Redcliffs Terminal Station
RMIT	Royal Melbourne Institute of Technology
ROI	Remote Operated Isolator
RTS	Richmond Terminal Station
RWTS	Ringwood Terminal Station
SCADA	Supervisory Control and Data Acquisition
SHTS	Shepparton Terminal Station
SKM	Sinclair Knight Merz
SMTS	South Morang Terminal Station
SNR	System Non-Recurrent
SR	System-Recurrent
SRP	Statement of Principles for the Regulation of Electricity Transmission Revenues
STPIS	Service Target Performance Incentive Scheme
stub 2003	refers to the period 1 January 2003 to 31 March 2003
SVTS	Springvale Terminal Station
TBTS	Tyabb Terminal Station
TGTS	Terang Terminal Station
TNSP	Transmission Network Service Provider
Transformer	Power transformer
TTS	Thomastown Terminal Station
TUOS	Transmission use of system
USD	United States Dollars
VCR	Value of Customer Reliability
VENCorp	Victorian Energy Networks Corporation
VNSC	Victorian network switching centre
VoLL	Value of Lost Load
VUE	Value of Unserved Energy

WACC	Weighted Average Cost of Capital
WIP	Work in progress
WMTS	West Melbourne Terminal Station
YPS	Yallourn Power Station

Attachment 1 – SP AusNet transmission determination 1 April 2008 to 30 March 2014

Attachment 1.1 – Revenue determination

Attachment 1.2 - Negotiating framework

Attachment 1.3 - Negotiated transmission service criteria

Attachment 1.4 - Pricing methodology

Attachment 1.1 – Revenue determination

Pursuant to cl. 6A.4.2(a), the AER has determined the following matters applicable to SP AusNet for the regulatory control period 1 April 2008 to 31 March 2014:

Method for calculating total revenue cap

The value of SP AusNet’s total revenue cap will be the sum of its maximum allowable revenues for each year of the regulatory control period.

SP AusNet’s annual building block revenue requirement

The AER determines the annual building block revenue requirements for SP AusNet as shown in table 1.

Table 1: AER final determination: building block calculation (\$m, nominal)

Year ending 31 March	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Return on capital	213.84	220.79	226.82	234.81	243.47	250.10
Economic depreciation	52.15	59.40	65.23	70.70	75.47	69.50
Opex (incl. easement land tax)	153.86	167.44	171.23	186.01	189.65	206.13
Glide-path	8.66	7.07	5.47	3.74	1.92	-
Tax liability	15.69	16.29	16.73	16.92	17.32	16.10
Building block requirement	444.20	470.98	485.48	512.19	527.82	541.82

Method of calculating SP AusNet’s MAR

SP AusNet’s MAR for each year of the regulatory control period will be the sum of its Allowed Revenue (AR) for that year and adjustments arising from the AER’s Service Target Performance Incentive Scheme (STPIS) and any pass through amounts. SP AusNet’s AR is calculated using the CPI-X methodology, that is:

$$AR_t = AR_{t-1} \times (1 + \Delta CPI) \times (1 - X_t)$$

and

$$MAR_t = AR_t + S_{ct} \times \left(AR_{t-2} \frac{3}{12} + AR_{t-1} \frac{9}{12} \right) + P_{t-1}$$

where:

AR_t is the allowed revenue for year t

t represents financial years 2 to 6 as outlined in table 2

ΔCPI is the annual % change in the most recently published “Consumer Price Index All Groups, Weighted Average of Eight Capital Cities”. For SP AusNet, this will be the December quarter CPI

X_t is -12.55% for 2008-09 and -1.01% for 2009-10 to 2013-14

MAR_t is the maximum allowed revenue for year t

S_{ct} is the service standards factor determined in accordance with the STPIS set out in chapter 7 and appendix C of this decision for calendar year ct .

P_{t-1} are any pass-through amounts determined by the AER in accordance with the requirements of cl. 6A.7.2 and 6A.7.3, as well as potentially cl. 11.6.21, for year $t-1$.

ct represents calendar years 2 to 6 as outlined in table 2.

Table 2: Timing of the calculation of allowed revenues and the financial incentive

t	Allowed revenue (financial year)	ct	Financial incentive (calendar year)
2	1 April 2009 – 31 March 2010	2	1 January 2008 – 31 December 2008
3	1 April 2010 – 31 March 2011	3	1 January 2009 – 31 December 2009
4	1 April 2011 – 31 March 2012	4	1 January 2010 – 31 December 2010
5	1 April 2012 – 31 March 2013	5	1 January 2011 – 31 December 2011
6	1 April 2013 – 31 March 2014	6	1 January 2012 – 31 December 2012

SP AusNet’s AR for 2008-09 is equal to:

8. the MAR for 2007-08 (i.e. \$392.63m)
9. escalated by CPI-X using:
 - a. the annual inflation rate calculated from the December 2007 quarter CPI and
 - b. an X factor of -12.55%.

The 2008-09 AR value will be adjusted for:

10. any service standards incentive rewards or penalties carried over from the 2002-07 regulatory control period, as determined in accordance with the ACCC’s 2002 decision and allowed under cl. 11.6.10.

Inflation for the year ended December 2007 will be published by the ABS in late January. The AER will determine the value of SP AusNet’s incentive payments in March 2008. The value of SP AusNet’s MAR will be known after this time.

Method for indexation of the regulatory asset base

The AER has determined that the method for indexing SP AusNet’s RAB for each year of the regulatory control period will be the same as that used to escalate its AR for that particular year, that is, to apply the annual % change in the most recently published “Consumer Price Index All Groups, Weighted Average of Eight Capital Cities”. For SP AusNet, this will be the December quarter CPI. This method will be used to roll-forward SP AusNet’s RAB for the purposes of the AER’s revenue determination for the regulatory control period commencing on 1 April 2014.

Performance incentive scheme parameters

The AER has determined the following values for parameters forming part of the service target performance incentive scheme applicable to SP AusNet for the regulatory control period.

Table 3: SP AusNet’s service target performance incentive scheme values and weightings

Parameters	Collar	Target	Cap	Weighting
Availability parameters	%	%	%	%MAR
Total circuit	98.41	98.73	99.05	0.20
Peak critical	98.62	99.39	99.78	0.20
Peak non-critical	98.83	99.40	99.69	0.05
Intermediate critical	97.29	98.67	99.36	0.25
Intermediate non-critical	97.57	98.73	99.31	0.25
Loss of supply events		No.		%MAR
>0.05 min per annum	9	6	3	0.125
>0.3 min per annum	4	1	0	0.125
Average outage duration		Minutes		%MAR
Lines	667	382	98	0.125
Transformers	556	412	268	0.125

Efficiency benefit sharing scheme parameters

The efficiency benefit sharing scheme applicable to SP AusNet for the regulatory control period is the AER’s *First proposed efficiency benefit sharing scheme* published in January 2007. This scheme does not require the AER to specify values or parameters specific to SP AusNet.

Commencement and length of regulatory control period

The regulatory control period will be for a period of six years, commencing on 1 April 2008 and ending on 31 March 2014.

Other amounts, values and inputs

The AER has also determined the following values that could not be determined before the submission of the Revenue Proposal or were otherwise required to be estimated, approved or otherwise determined by the AER but are not so estimated, approved or otherwise determined before the submission of the Revenue Proposal:

Table 4: other amounts, values and inputs

Parameter	Value
Nominal risk free rate	6.09%
Debt risk premium	2.11%
Inflation	2.59%
Nominal vanilla WACC	9.76%

Attachment 1.2 - Negotiating framework

1 Introduction

The National Electricity Rules (the Rules) require certain transmission services (negotiated transmission services) to be provided on terms and conditions of access that are negotiated between the Transmission Network Service Provider (TNSP) and the Service Applicant. Each TNSP is required to prepare a negotiating framework, which sets out the procedure to be followed during negotiations. The negotiating framework must comply with and be consistent with:

- the applicable requirements of a transmission determination applying to the provider; and
- the minimum requirements for a negotiating framework, which are set out in clause 6A.9.5(c).

This document is the negotiating framework that the AER has determined will apply to SP AusNet for the regulatory control period 1 April 2008 to 31 March 2014.

SP AusNet may seek to amend or replace its negotiating framework at the time it submits its revenue proposal for the regulatory control period commencing 1 April 2014, by submitting a new proposed negotiating framework in accordance with the NER as in force at that time.

2 Obtaining access to the Victorian network

SP AusNet owns a transmission network in the State of Victoria and is therefore a Transmission Network Service Provider as defined by the Rules. SP AusNet provides and offers connection services to Network Users.

In Victoria, two organisations – SP AusNet and VENCORP – together fulfil the function of Local Network Service Provider as defined in the Rules. The respective roles of SP AusNet and VENCORP in respect of the Rules are set out in Chapter 9 of the Rules and in Licences administered by the Essential Services Commission (ESC). These licences may be viewed on the website of the ESC (www.esc.vic.gov.au).

VENCORP has primary responsibility in relation to use of the transmission network by the applicant, and consideration of the impact of a proposal to connect on the overall transmission network (shared network services – also referred to as use of system services).

In respect of enquiries for connection to the network, SP AusNet has primary responsibility for assessing and advising an applicant regarding the connection assets at the physical interface with the network (network exit services and network entry services).

This negotiating framework, therefore, has application only to proposed connection assets which are negotiated transmission services.

3 Objectives of negotiation

The principal objective of negotiation is the completion of an Offer to Connect in respect of connection services required by the Connection Applicant, and execution of the connection agreement. Clause 5.3.6(f) of the Rules provides:

“Both the Network Service Provider and the Connection Applicant are entitled to negotiate with each other in respect of the provision of connection and any other matters relevant to the provision of connection and, if negotiations occur, the Network Service Provider and the Connection Applicant must conduct such negotiations in good faith”.

For its part, SP AusNet shall negotiate in good faith the terms and conditions of access for the provision of negotiated transmission services, having regard to, amongst other things, all relevant provisions of clause 5.3.6 of the Rules, including the following obligations (paraphrased) placed on SP AusNet as Network Service Provider:

- use reasonable endeavours to provide the Connection Applicant with an Offer to Connect in accordance with the reasonable requirements of the Connection Applicant, including without limitation, the location of the proposed connection point and the level of power transfer capability that the (connection) network will provide;
- make an Offer to Connect (which includes proposed terms and conditions for connection to the network, and define the basis for determining service charges) within a defined time-frame, unless otherwise agreed; and
- make an Offer to Connect that is fair and reasonable, and consistent with safe and reliable operation of the power system in accordance with the Rules.

4 New connections

SP AusNet’s Connection Application Process is a two-stage process.

The first stage (Connection Enquiry) is initiated when an intending Connection Applicant submits a connection enquiry as described in clause 5.3.2 of the Rules. SP AusNet will respond to the enquiry in respect of its primary responsibilities, however the Network User must separately submit a Connection Enquiry to VENCORP to obtain advice in respect of that organisation’s primary responsibilities.

In response to the connection inquiry SP AusNet will outline details of:

- the expected process to progress a connection application;
- SP AusNet’s standard connection agreement and pricing schedule;
- a preliminary program;
- any additional information that may be required to process a connection application, should the proponent wish to proceed with a connection application;
- an estimate of the connection application charges that will be required to process a connection application;

- a definition of the boundaries of contestable and non-contestable assets; and
- any other authorities that also must be notified for the applicant to connect.

SP AusNet's preliminary program (subject to Clause 5.3.3 (b) of the Rules) provided in response to the connection enquiry will include milestones for provision of an offer to connect and for execution of a connection agreement.

Intending Connection Applicants should note that SP AusNet must, in progressing a Connection Enquiry, and subject to its obligations relating to confidential information, disclose details of the proposal to VENCORP, and where necessary may also disclose details to other Network Service Providers (where their terms and conditions of connections agreements with those Network Service Providers will be affected) and to NEMMCO. SP AusNet does not take any responsibility for information provided by a Connection Applicant under a Connection Enquiry that SP AusNet discloses to VENCORP and other Network Service Providers, or NEMMCO.

The treatment of confidential information is discussed in Section 8 of this document.

The first stage of the Connection Application Process (Connection Enquiry) concludes with an understanding between SP AusNet and the Connection Applicant concerning the broad scope of the required connection services, other Network Service Providers who must be involved in assessment of an application to connect, broad issues arising for SP AusNet relevant to the Connection Point, and a preliminary program relating to the connection proposal.

Following completion of the first stage, the Connection Applicant may proceed to the second stage, by making an application to connect. Where, in the opinion of the Network User, the connection services satisfy the definition of negotiable services, the Network User may initiate negotiation in accordance with this negotiating framework by completing and submitting the "Application to Connect" to this effect.

The Network user is responsible for contacting VENCORP regarding the new service proposal and making a separate Application to Connect to VENCORP to cover any shared network augmentations that may be required.

If SP AusNet's view is that the connection services are not negotiable services it shall inform the Network User, and advise its reasons, in writing within 5 business days.

4.1 Augmentations to Existing Connections

By prior arrangement with SP AusNet, network users wishing to augment an existing connection and may in a "one step process" submit a combined connection enquiry and application to connect to request SP AusNet make an offer to increase the performance of an existing connection. This request for offer will be considered as a connection application as defined in the rules. All information that would normally be required to be provided in both the connection enquiry stage and application to connect stage must be provided in the application to connect prior to commencement of processing.

As noted in the previous section a Network User must also separately make an application to connect to VENCORP.

5 Connection application

A Network User who requires SP AusNet to make an offer to connect in accordance with this negotiating framework must make an application to connect. The application to connect will also be considered as a request for offer as defined under SP AusNet's transmission licence.

In accordance with the rules, SP AusNet will respond to the application to connect in respect of its primary responsibilities, however, the Network User must separately make an application to connect to VENCORP to obtain advice in respect of that organisation's primary responsibilities.

5.1 Timeframe for negotiation

SP AusNet's preliminary program (subject to Clause 5.3.3 (b) of the Rules) provided in response to the connection enquiry will include milestones for provision of an offer to connect and for execution of a connection agreement.

SP AusNet is required by its Licence to make an offer to connect within 65 business days of receiving all necessary information to process an application to connect. The information requirements SP AusNet would typically include the following (subject to SP AusNet's satisfaction):

- Single Line Diagram;
- Site Layout;
- required ratings;
- Protection and Control requirements; and
- plant life.

Having regard to this constraint, SP AusNet undertakes to provide a reasonable period of time in its preliminary program for commencing, progressing and finalising negotiations with the Network User for the provision of negotiable services. The preliminary program may be varied by agreement of the parties at the commencement of negotiation.

During the negotiation SP AusNet and the intending Network User must use their reasonable endeavours to adhere to the time periods set for provision of the offer to connect and for execution of the connection agreement.

5.2 Fees for Connection Services

SP AusNet will charge an application fee to process an application to connect. The minimum fee for an application to connect is \$10,000. SP AusNet will not incur costs above \$10,000 unless the Connection Applicant agrees to pay the additional costs.

SP AusNet may agree an alternative arrangement with the Connection Applicant to recover or refund connection application fees. In all instances, the agreed charging arrangements will be consistent with the applicable AER cost allocation guidelines and Negotiated Transmission Service Criteria, and will only cover SP AusNet's reasonable direct expenses incurred in processing the application to provide the

negotiated transmission service, in accordance with the requirements of clause 6A.9.5(c)(7).

6 Service level requirements and SP AusNet's charges

The Connection Applicant is required to specify its service level requirements as part of the application to connect.

SP AusNet will provide a scope of works to the Connection Applicant detailing the electrical layout, major plant items and activities necessary to meet the Connection Applicant's service level requirements. SP AusNet will also provide a description to the Connection Applicant of the nature of the connection service that is the subject of negotiation, including details of the service that SP AusNet will provide to the Connection Applicant.

The price (charges) for the new or augmented services must be in accordance with the principles set out in clause 6A.9.1 of the Rules. Accordingly, SP AusNet's Offer to Connect will include charges which are "based on the costs incurred in providing that service, determined in accordance with the principles and policies set out in the Cost Allocation Methodology" (as per clause 6A.9.1(1) of the NER), and taking into account all other principles in clause 6A.9.1 that are applicable. SP AusNet and the Connection Applicant may agree to an alternative scope of works and price through the negotiation process.

SP AusNet will also provide information and meet with the Connection Applicant to explain and substantiate the proposed scope of work on request from the Connection Applicant.

Supplementary information provided by SP AusNet in these circumstances may include information about timing of works activities.

7 Provision of information

By entering into the negotiation process, SP AusNet and the Connection Applicant each agree to provide to the other party all such commercial information as the other party may reasonably require, to enable that party to engage in effective negotiation with the other party, for the provision of the negotiable services including cost information.

SP AusNet's information provision obligations include that SP AusNet shall identify and inform the Connection Applicant of the reasonable costs, and/or the increase or decrease in costs (as appropriate), of providing the negotiable services. SP AusNet must demonstrate to the Connection Applicant, that its charges for providing those negotiable services reflect those costs, and/or cost increment or decrement (as appropriate).

In accordance with clause 6A.9.5(c)3(i) of the rules, SP AusNet will provide cost information to assist the Connection Applicant that will be itemised into a breakdown of incremental costs to provide the network services. The typical cost breakdown structure will be as follows:

- Project Establishment;

- Project Management;
- Project Closeout;
- Design;
- Procurement;
- Installation;
- Civil Works;
- Dismantling;
- Contingency;
- Finance Charges; and
- Specific allowance for defined project risks.

The purpose of providing this information is to demonstrate to the Connection Applicant that SP AusNet's charges are fair and reasonable.

Either party may determine that, in its opinion, information requested by the other party is not reasonably required by that party for the effective negotiation of provision of the negotiable services. If, in these circumstances, the requesting party maintains its request for the subject information then the parties shall meet and the requesting party will explain the need for the subject information and how it intends to use the information in the negotiation process. If the parties then fail to agree on whether the information is reasonably required, the matter shall be referred to the dispute resolution process (as outlined in Section 9 of this document).

8 Confidential information

All information disclosed to the Connection Applicant by SP AusNet shall be treated as confidential information. SP AusNet may require the Connection Applicant to enter into a confidentiality agreement prior to providing information.

In processing a connection enquiry and application to connect SP AusNet must consult with other Network Service Providers and NEMMCO (as noted in Section 2 of this document) and must therefore disclose information provided by the Connection Applicant. Having regard to this obligation the Connection Applicant must, upon provision of information to SP AusNet, advise in writing if any of the information is confidential information and is not to be disclosed to these other Network Service Providers and NEMMCO.

Unless advised to the contrary, SP AusNet will consider that the Connection Applicant consents to disclosure as outlined in the preceding paragraph.

Neither party shall be required to disclose information which would put it in breach of its obligations relating to confidential information set out in clause 8.6 of the Rules.

9 Dispute resolution

By entering into the negotiation process, SP AusNet and the Connection Applicant agree that disputes arising during the course of the negotiation shall be dealt with in accordance with Part K of Chapter 6A of the Rules.

10 Impact on other users

In accordance with clause 6A.9.5(c)(8) SP AusNet will determine the potential impact on other Transmission Network Users of the provision of the negotiated transmission service. Where a potential impact is determined, SP AusNet will notify and consult with any affected Transmission Network Users and ensure that the provision of the negotiated transmission services does not result in non-compliance with any service standards or other obligations in relation to other Transmission Network Users under the Rules.

Attachment 1.3 - Negotiated transmission service criteria

The AER has determined that the following negotiated transmission service criteria will apply to SP AusNet for the regulatory control period 1 April 2008 to 31 March 2014.

National Electricity Market Objective

11. The *terms and conditions of access* for a *negotiated transmission service*, including the price that is to be charged for the provision of that service and any *access charges*, should promote the achievement of the *market objective*.

Criteria for terms and conditions of access

Terms and Conditions of Access

12. The *terms and conditions of access* for a *negotiated transmission service* must be fair and reasonable and consistent with the safe and reliable operation of the power system in accordance with the NER.
13. The *terms and conditions of access* for a *negotiated transmission service* (including, in particular, any exclusions and limitations of liability and indemnities) must not be unreasonably onerous taking into account the allocation of risk between the TNSP and the other party, the price for the *negotiated transmission service* and the costs to the TNSP of providing the *negotiated transmission service*.
14. The *terms and conditions of access* for a *negotiated transmission service* must take into account the need for the service to be provided in a manner that does not adversely affect the safe and reliable operation of the power system in accordance with the NER.

Price of Services

15. The price for a *negotiated transmission service* must reflect the costs that the TNSP has incurred or incurs in providing that service, and must be determined in accordance with the principles and policies set out in the *Cost Allocation Methodology*.
16. Subject to criteria 7 and 8, the price for a *negotiated transmission service* must be at least equal to the avoided cost of providing that service but no more than the cost of providing it on a stand alone basis.
17. If the *negotiated transmission service* is a *shared transmission service* that:
 - i. exceeds any network performance requirements which it is required to meet under any relevant electricity legislation; or
 - ii. exceeds the network performance requirements set out in schedule 5.1a and 5.1 of the NER

then the difference between the price for that service and the price for the *shared transmission service* which meets network performance requirements must reflect the TNSP's incremental cost of providing that service (as appropriate).

18. If the *negotiated transmission service* is the provision of a *shared transmission service* that does not meet or exceed the network performance requirements, the difference between the price for that service and the price for the *shared transmission service* which meets, but does not exceed, the network performance requirements should reflect the amount of the TNSP's avoided cost of providing that service (as appropriate).
19. The price for a *negotiated transmission service* must be the same for all *Transmission Network Users* unless there is a material difference in the costs of providing the negotiated transmission service to different *Transmission Network Users* or classes of *Transmission Network Users*.
20. The price for a *negotiated transmission service* must be subject to adjustment over time to the extent that the assets used to provide that service are subsequently used to provide services to another person, in which case such adjustment must reflect the extent to which the costs of that asset is being recovered through charges to that other person.
21. The price for a *negotiated transmission service* must be such as to enable the TNSP to recover the efficient costs of complying with all regulatory obligations associated with the provision of the *negotiated transmission service*.

Criteria for access charges

Access Charges

22. Any *access charges* must be based on costs reasonably incurred by the TNSP in providing *Transmission Network User* access and (in the case of compensation referred to in clauses 5.4A(h) to (j)) on the revenue that is likely to be foregone and the costs that are likely to be incurred by a person referred to in rule 5.4A(h)-(j) where an event referred to in those paragraphs occurs (as appropriate).

Attachment 1.4 - Pricing methodology

1 Introduction

This document specifies the *pricing methodology* that the AER has determined will apply to SP AusNet for the regulatory control period 1 April 2008 to 31 March 2014.

For the purposes of this forthcoming regulatory period, SP AusNet is subject to the agreed interim arrangements published by the AER on 16 February 2007.

In order to comply explicitly with the pricing principles in Part J of Chapter 6A and the agreed interim arrangements, SP AusNet's *pricing methodology* has been drafted to reflect terminology and drafting employed in Part J of Chapter 6A. In respect to matters that do not relate to the pricing principles in Part J of Chapter 6A, SP AusNet's *pricing methodology* refers to Part C of the old Chapter 6 in accordance with the requirements of the interim arrangements.

It is also important to note that the transmission arrangements in Victoria differ from those in other states, given the roles and responsibilities that are ascribed to SP AusNet and VENCORP. In relation to pricing matters, SP AusNet undertakes the allocation of the AARR to each of the categories of prescribed transmission services, and is also responsible for pricing connection services. VENCORP is responsible for pricing prescribed TUOS services and prescribed common transmission services.

In light of the arrangements in Victoria, this proposed *pricing methodology* only addresses the pricing matters for which SP AusNet has responsibility.

The remaining sections of this document are structured as follows:

- Section 2 defines the AARR in accordance with the NER.
- Section 3 explains the allocation of the AARR to the categories of prescribed transmission services in accordance with clause 6A.23.2, in order to establish the *Annual service revenue requirements (ASRR)* for each category.
- Section 4 explains the allocation of the *ASRR* to transmission network connection points in accordance with clause 6A.23.3
- Section 5 explains the application of the price structure principles to the charges for connection services in accordance with clause 6A.23.4
- Section 6 describes the requirements relating to information provision, and the billing arrangements in accordance with clause 6.7 of Part C of the old Chapter 6.

Throughout this document, terms which appear in *italics*, have the meaning given to them in the NER.

2 SP AusNet's aggregate annual revenue requirement

Clause 6A.22.1 states that for the purposes of the pricing arrangements, the aggregate annual revenue requirement (AARR) for prescribed transmission services provided by a transmission Network Service Provider, is the maximum allowed revenue referred to in clause 6A.3.1 adjusted:

1. in accordance with clause 6A.3.2
2. by subtracting the operating and maintenance costs expected to be incurred in the provision of prescribed common transmission services.

Clause 6A.3.2 states that the revenue that a Transmission Network Service provider may earn any regulatory year of a regulatory control period from the provision of prescribed transmission services is the maximum allowed revenue subject to any adjustments referred to in clause 6A.3.2, and is to be determined in accordance with:

- a. the revenue determination forming part of the applicable transmission determination; and
- b. the provisions of the revenue rules set out in Part C of Chapter 6A, which related to the regulation of revenue for prescribed transmission services.

In accordance with the requirement of the NER, SP AusNet defines the *AARR* in accordance with clauses 6A.3.1, 6A.3.2, and 6A.22.1. Importantly, clause 6A.3.1 notes that the *AARR* should be defined in accordance with the *revenue determination*. At this stage, the *revenue determination* relating to the forthcoming *regulatory control period* has not yet been settled. However, SP AusNet undertakes to ensure that the *AARR* for price setting purposes is defined in accordance with the *revenue determination*.

3 Allocation of the AARR to categories of prescribed transmission services

3.1 Overview of the Allocation Principles

Clause 6A.23.2 of the NER required the *AARR* to be allocated in accordance with the following principles:

- a. The *AARR* for a Transmission Network Service Provider must be allocated to each category of prescribed transmission services in accordance with the *attributable cost share* for each such category of services
- b. This allocation results in the *annual service revenue requirement (ASRR)* for that category of services
- c. The allocation of the *AARR* must be such that:
 - i. every portion of the *AARR* is allocated; and
 - ii. the same portion of the *AARR* is not allocated more than once.
- d. Where, as a result of the application of the *attributable cost share*, a portion of the *AARR* would be attributable to more than one *category of prescribed transmission services*, that *attributable cost share* is to be adjusted and applied such that any costs of a *transmission system asset* that would otherwise be attributed to the provision of more than one *category of prescribed transmission services*; is allocation as follows:
 - i. to the provision of prescribed TUOS services, but only to the extent of the stand-alone amount for that category of prescribed transmission services

- ii. if any portion of the costs of a *transmission system* asset is not allocated to *prescribed TUOS services*, under subparagraph (i), that portion is to be allocated to *prescribed common transmission services*, but only to the extent of the *stand-alone amount* for that *category of prescribed transmission services*.
- iii. If any portion of the costs of a *transmission system* asset is not attributed to *prescribed transmission services* under subparagraphs (i) and (ii), that portion is to be attributed to prescribed entry services and *prescribed exit services*.

Clause 6A.22.3 defines the meaning of *attributable cost share* as follows:

- a. For a *Transmission Network Service Provider* for a *category of prescribed transmission services*, the *attributable cost share* for that provider for that category of services must, subject to any adjustment required under the principles in Clause 6A.23.2, substantially reflect the ratio of:
 - i. the costs of the *transmission system* assets directly attributable to the provision of that *category of prescribed transmission services*; to
 - ii. the total costs of all the *Transmission Network Service Provider's* transmission system assets directly attributable to the provision of prescribed transmission services
- b. The costs of the *transmission system* assets referred to in paragraph a) refers to optimised replacement cost or to an accepted equivalent to optimised replacement cost that is referable to values contained in the accounts of the *Transmission Network Service Provider*.

3.2 Application of the Allocation Principles

In accordance with clause 6A.22.6 SP AusNet determines the *attributable cost share* for each category of *prescribed transmission services* by calculating the ratio of:

1. the costs of the transmission system assets directly attributable to the provision of that *category of prescribed transmission services*; to
2. the total costs of SP AusNet's transmission system assets directly attributable to the provision of prescribed transmission services.

In accordance with the requirements of the NER, in calculating costs referred to above, SP AusNet values its assets in accordance with an optimised replacement cost methodology. Any optimisation will be conducted in accordance with the assets valuation roll-forward methodology described in the Rules.

To give effect to the allocation process, assets must be ascribed to the particular *category of prescribed transmission services* in accordance with clause 6A.23.2 of Part J of the NER and Schedule 6.2 of Part C of the old NER. In the following paragraphs SP AusNet describes how the particular categories of assets have been allocated to *prescribed transmission service categories* by applying the principles set out in clause 6A.23.2 of Part J of the NER and Schedule 6.2 of Part C of the old NER. As already noted, clause 6A.23.2(c) (2) defines the resulting amount of the *AARR* allocated to each of the *categories of prescribed transmission services* as the *annual service revenue requirement (ASRR)*.

3.2.1 Lines

All lines are allocated to *prescribed TUOS services*, with the following exceptions:

- 66kV double circuit lines between East Rowville, Cranbourne and Frankston Terminal Stations; and
- 66kV double circuit lines between Templestowe Terminal Station and Subs DC, HB, L and WD.

In accordance with Schedule 6.2 of Part C of the old NER, the line assets listed immediately above are allocated to *prescribed exit services*, as each one of the above lines is radial and connects a particular user to the transmission network.

3.2.2 Transformers

The main system tie transformers are allocated to *prescribed TUOS services*. Connection Transformers are allocated to prescribed entry services and *prescribed exit services* in accordance with Schedule 6.2 of Part C of the old NER.

3.2.3 Switchgear

In accordance with Schedule 6.2 of Part C of the old NER, a shallow connection policy is applied in determining the allocation of switchgear. In accordance with this policy, switchgear is assigned to *prescribed entry services* and *prescribed exit services* only when those assets provide *supply* to *Network Users* connected at the *connection point*. The remainder is assigned to *prescribed TUOS services*.

3.2.4 Busbars and Rack Structures

Busbars and rack structures are not separately identified for allocation. Instead, they are included in the relevant switchgear, transformer or reactive primary bays.

3.2.5 Reactive Compensation Plant

In accordance with Schedule 6.2 of Part C of the old NER, all reactive plant is assigned to *prescribed common transmission services* as it provides equivalent benefit to all users.

Reactive plant will be assigned to *prescribed TUOS services* if the benefits of the reactive plant can be allocated on a locational basis, but cannot be allocated to a particular user or group of users.

Reactive plant at the sub-transmission voltage level will be assigned to *prescribed exit services* if it is clearly evident that the plant has been provided to meet the local reactive requirements of one or more users connected at the relevant substation.

3.2.6 Land and Station Establishment

Land and establishment costs are apportioned between *prescribed exit services* and *prescribed TUOS services* on a case-by-case basis applying the principles set out in clause 6A.23.2.

3.2.7 Communications

All communication assets are assigned to *prescribed common transmission services*.

3.2.8 *Secondary Systems*

Secondary equipment is generally allocated in accordance with the allocation of the associated primary equipment.

3.2.9 *Victorian Network Switching Centre*

All operational costs are assigned to prescribed common transmission services.

3.2.10 *System Spares*

System spares are allocated to *prescribed common transmission services*.

3.2.11 *Non-System Assets*

Non-system asset are allocated to prescribed common transmission services.

3.2.12 *Easements*

Easements are allocated to *prescribed common transmission services*.

3.2.13 *Easement Land Tax*

On 24 March 2004 the Victorian Government announced it intended to extend land tax to electricity easements owned by electricity transmission companies in Victoria. Legislation to give effect to the changes, entitled the *Land Tax (Amendment) Act 2004*, received the royal assent on 27 April 2004.

As the tax is directly associated with the value of the easement portfolio, SP AusNet intends to allocate this cost to the prescribed common transmissions services.

4 Allocation of the ASRR to transmission network connection points

4.1 Overview of Allocation Principles

As noted earlier, the allocation process described in section results in the allocation of SP AusNet's ASRR to each *category of prescribed transmission service*. This allocation is defined in the NER as the *annual service revenue requirement (ASRR)*.

This section of SP AusNet's proposed *pricing methodology* explains how the ASRR for *prescribed entry and exit services* is to be allocated to transmission network connection points. It should be noted the VENCORP is responsible for allocation the ASRR for *prescribed TUOS services* and *prescribed common transmission services* in accordance with the NER.

Clause 6A.23.2 sets out the following principles for allocating ASRR to the *transmission network connection points*:

- a. the whole of the ASRR for any prescribed entry services is to be allocated to transmission network connection points in accordance with the attributable connection point cost share for prescribed entry services that are provided by the Transmission Network Service Provider at that connection point.
- b. the whole of the ASRR for any prescribed exit services is to be allocated to transmission network connection points in accordance with the attributable connection point cost share for prescribed exit services that are provided by the Transmission Network Service Provider at that connection point.

Clause 6A.22.4 defines the attributable connection point cost share as follows:

- a. For a Transmission Network Service Provider for prescribed entry services and prescribed exit services, the attributable connection point cost share for that provider for each of those categories of services must substantially reflect the ratio of:
 - i. the costs of the transmission system assets directly attributable to the provision of prescribed entry services or prescribed exit services, respectively, at a transmission network connection point; to
 - ii. the total costs of all the Transmission Network Service Providers' transmission system assets directly attributable to the provision of prescribed entry service or prescribed exit services, respectively.
- b. The costs of the transmission system assets referred to in paragraph a) refers to optimised replacement cost or to an accepted equivalent to optimised replacement cost that is referable to values contained in the accounts of the Transmission Network Service Provider

4.2 Application of the Allocation Principles

In accordance with clause 6A.23.3 SP AusNet allocates the *ASRR* for prescribed entry and exit services to be transmission network connection points in accordance with the attributable connection point cost share for prescribed entry and exit services at each connection point by calculating the ratio of:

1. the costs of the transmission system assets directly attributable to the provision of prescribed entry services or prescribed exit services, respectively, at a transmission network connection point; to
2. the total costs of all SP AusNet's transmission system assets directly attributable to the provision of *prescribed entry services* or *prescribed exit services*, respectively.

In accordance with the requirements of the NER, in calculating the costs referred to above, SP AusNet values its assets with an optimised replacement cost methodology. any optimisation will be conducted in accordance with the asset valued roll-forward methodology described in the NER.

The NER do not specify any principles to address the allocation of costs to multiple customers at a single terminal station. Nevertheless, Sp AusNet proposed the following standard allocation methodology for multiple customers at a single terminal station with its existing customers. Customers remain free to negotiate a different methodology with SP AusNet at any time.

4.2.1 Shared Entry Services

Where more than entry customer shares a terminal station, shared costs will be allocated by asset replacement costs (ORC) share. An example showing the breakdown of assets undertaken in accordance with clause 2.2(a) (1) of the interim arrangements at an entry terminal station is illustrated in Appendix 1 attached to this proposed *pricing methodology*.

4.2.2 Shared Exit Services

Where more than one exit customer is supplied from a terminal station, shares costs will be allocated under the following methodology:

- Coincident maximum demand (average of 10 highest demand days) will be used to determine the allocation of costs between customers at shares exit terminal stations. Adjustments to the coincident maximum demand will be made where a feeder is shared between two or more customers. This information and any adjustments necessary will be agreed by all customers at the relevant connection point.
- Coincident maximum demand information provide for the allocation will be for the previous financial year. For example, in the calculation of the 2007-08 charges, data from 2006-07 would be used; and
- The proportion of share costs allocated to a new exit customer must be calculated on the basis of a reasonable estimate of expected demand (over a period of not less than six months), consistent with the terms of the connection agreement between SP AusNet and the new exit customer.

SP AusNet will receive the required information from the relevant *Distribution Network Service Provider* as a percentage split for each shared terminal station. Non-distributor connection customers will have identical consultation opportunities and be subject to identical allocation principles.

An example showing the breakdown of assets undertaken in accordance with clause 2.2(a)(1) of the interim arrangements at an exit terminal station is illustrated in Appendix 2 of this *pricing methodology*.

4.2.3 Shared Exit and Entry Services

Where an exit customer shares a terminal station with a *Generator* or *MNSP*, shared costs will be allocated by asset optimised replacement cost (ORC) share.

5 Price structure

Clause 6A.23.4 requires each *TNSP* to develop separate prices for the recovery of the *ASRR* in accordance with the principles set out in paragraphs (b)-(i). As noted earlier, SP AusNet is responsible for the pricing of *prescribed entry* and *exit services* only, whilst VENCORP has responsibility for pricing *prescribed TUOS services* and *prescribed common transmission services*.

In relation to *prescribed entry* and *exit services*, clauses 6A.23.4(c) requires that prices for *prescribed entry services* and *prescribed exit services* must be a fixed annual amount. In accordance with this NER requirement, SP AusNet therefore proposes that prices for *prescribed entry* and *exit services* are fixed annual amounts.

6 Information requirements and billing

6.1 Compliance with Part C of the Old Chapter 6

In accordance with the interim arrangements, SP AusNet is required to adopt the billing process requirements set out in Part C of the old Chapter 6, rather than those in clause 6A.27 of Part J of Chapter 6A.

6.2 Timing

Clause 6.5.7(a) requires each TNSP to publish transmission services prices for the following *financial year*, by 15 May each year. In accordance with this requirement, prices for *prescribed entry* and *exit services* will be determined and issued by 15 May of the relevant *financial year*.

The *ASRR* for *prescribed TUOS services* and *prescribed common transmission services* for the following *financial year* will be issued to VENCORP two weeks before 15 May to allow VENCORP to calculate the prices for these services in accordance with the Rules by 15 May.

6.3 Information requirements from customers

Customers should provide SP AusNet with the required Maximum Demand information (described in Section 4.2 above) and any adjustments as agreed by all relevant parties by the last business day of April

6.4 Statement of charges to connection customers

In accordance with the relevant sections of clause 6.7.2 of Part C of the old Chapter 6, SP AusNet will issue a statement outlining the annual connection charge by 15 May. The statement will contain the following information:

- the total connection charge
- the breakdown of the connection charge by each customer connection point
- the dates on which the billing period starts and ends, and
- any relevant measured quantities, agreed quantities, prices and amounts charged for each component of the *Generator's* or *Transmission Customer's* total connection service amount.

6.5 Statement of Charge to VENCORP

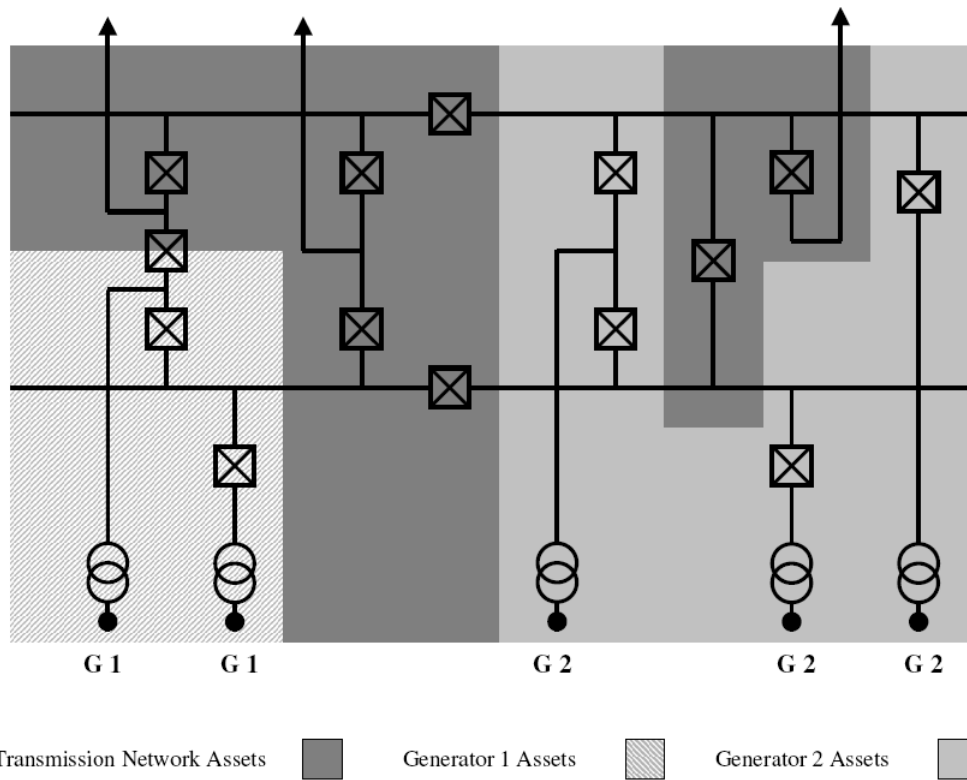
SP AusNet will endeavour to issue a statement outlining the annual transmission service charge payable by VENCORP two weeks before 15 May. The statement will contain the following information:

- the *AARR*
- the breakdown of *AARR* into the *ASRRs* to enable VENCORP to determine the pricing of *prescribed TUOS services* and *prescribed common transmission services*; and
- any relevant measured quantities, agreed quantities, prices and amounts charged for each component of VENCORP's total annual transmission service fee

6.6 Billing Frequency and Settlement

The annual transmission service payable by VENCORP and the connection charges payable by Transmission Customers will be recovered via twelve monthly bills issues one month in arrears. Settlement is 11 business days from the date of issue.

Appendix 1 – Shared entry terminal station example



Appendix 2 – Exit terminal station example

