ElectraNet Transmission Network Revised Revenue Proposal

1 July 2008 to 30 June 2013

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ElectraNet Corporate Headquarters

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ElectraNet Pty Ltd (ElectraNet) is the principal electricity transmission network service provider (TNSP) in South Australia.

At ElectraNet we:

- Recognise that a strong and reliable electricity transmission system is important to the economy and future security of supply
- Consult with stakeholders and take their views into consideration
- Respond appropriately to our customers' needs
- Provide efficient electricity transmission services
- Meet the challenge to keep costs down when key drivers are pushing costs up

For information about ElectraNet visit www.electranet.com.au.

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1. Overview

ElectraNet Pty Ltd (ElectraNet) is the principal electricity transmission network service provider (TNSP) in South Australia.

On the 31 May 2007, ElectraNet submitted a Revenue Proposal to the Australian Energy Regulator (AER) for the regulatory control period from 1 July 2008 to 30 June 2013 in accordance with the National Electricity Rules (Rules). ElectraNet's Revenue Proposal has been the subject of public consultation and detailed review by the AER and its consultants. On 28 November 2007, the AER published a draft decision on its transmission determination for ElectraNet (dated 9 November 2007).

This revised Revenue Proposal is submitted by ElectraNet in accordance with Chapter 6A of the Rules.

ElectraNet has carefully reviewed all of the matters raised by the AER in its draft decision including, in particular, where the AER has made adjustments to ElectraNet's original proposal. In many instances, ElectraNet has implemented the changes required by the draft decision. Where ElectraNet has not fully adopted the AER's draft decision, the revised Revenue Proposal provides additional information, including expert reports, to address the matters raised by the AER and to demonstrate that the revised proposal satisfies the requirements of the Rules.

ElectraNet notes that although it has implemented many of the AER's adjustments to its Revenue Proposal (May 2007), this does not necessarily mean that ElectraNet accepts the rationale provided by the AER or its consultants for making them. Furthermore, these adjustments in the draft decision are not necessarily reasonable to make unless they are accompanied by the other elements of the revised Revenue Proposal.

ElectraNet's revised Revenue Proposal sets out a maximum allowed revenue (MAR) requirement that increases from $214 million in 2008-09 to $294 million in 2012-13 (nominal) with a total MAR of $1,263 million over the next regulatory control period. By comparison the AER's draft decision MAR increases from $209 million in 2008–09 to $271 million in 2012–13 ($nominal) with a total MAR over the next regulatory control period of $1,195 million.

ElectraNet's revised opening regulated asset base (RAB) is $1,277 million (as at 1 July 2008). This compares to an opening RAB of $1,220 million in the AER's draft decision. ElectraNet has implemented all aspects of the AER's draft decision in relation to the opening RAB with the exception of the AER's treatment of easement transaction or acquisition costs. ElectraNet has also included updated forecasts of commissioned assets and assets under construction in the current regulatory control period in establishing its revised opening RAB proposal.

ElectraNet's revised capital expenditure (capex) forecast for the next regulatory control period is $719 million ($2007-08). This compares to $606 million in the AER's draft decision. ElectraNet has implemented all aspects of the AER's draft decision in relation to forecast capex with the exception of those related to:

- Weather station project costs;
- Strategic land and easement acquisition costs;

- Land and easement escalation;
- Non-labour construction cost escalation;
- Cost estimation risk factor; and
- Contingent projects.

ElectraNet's revised capex forecast takes into account the deferral of capital projects driven by changes to the South Australian Electricity Transmission Code (ETC), as proposed in the AER's draft decision. The revised capex forecast also includes $44.5 million ($2007-08) of additional asset replacement costs for assets that provide transitional services under the new Chapter 6A Rules, which were not included in the Revenue Proposal (May 2007) but should be added to the final revenue cap.

ElectraNet's revised total operating expenditure (opex) forecast for the next regulatory control period is $301 million ($2007-08). This compares the $291 million in the AER's draft decision. ElectraNet has implemented all aspects of the AER's draft decision in relation to forecast opex with the exception of those related to:

- Field support costs – land tax;
- Corrective maintenance costs;
- Maintenance projects; and
- Equity raising costs.

ElectraNet is subject to the AER's service target performance incentive scheme. This scheme encourages TNSPs to improve or maintain their service performance levels against measures of network security and reliability (known as parameters). The AER in its draft decision made a number of changes to the details of the scheme proposed by ElectraNet. ElectraNet has implemented all aspects of the AER's draft decision in relation to the service target performance incentive scheme with the exception of those related to the methodology for setting caps and collars for the loss of supply event frequency parameters.

ElectraNet estimates that this revised Revenue Proposal would result in a 7.7 per cent per annum nominal increase in average transmission charges over the next regulatory control period. Transmission charges represent approximately 10 per cent on average of end user electricity charges in South Australia. ElectraNet estimates that the increase in average transmission charges under this revised proposal would add approximately $8.70 to the average residential customer's annual bill of $1,058 (0.8 per cent).

The increase in average transmission charges is primarily because of:

- the need for increased capex associated with demand growth and new reliability standards specified in the ETC;
- the urgent need to replace and maintain ageing assets;
- high input costs such as construction materials and labour (as a consequence of the commodity/minerals boom); and

- increased opex due to a growing asset base.

ElectraNet submits this revised Revenue Proposal on the basis that the overall revised proposal, and its capital and operating expenditure forecasts in particular, reasonably reflect the efficient costs of a prudent operator and are consistent with realistic demand assumptions.

2. Introduction

2.1 Background

ElectraNet Pty Ltd (ElectraNet) is the principal electricity transmission network service provider (TNSP) in South Australia.

On the 31 May 2007, ElectraNet submitted a Revenue Proposal to the Australian Energy Regulator (AER) for the regulatory control period from 1 July 2008 to 30 June 2013. Under the National Electricity Law and the National Electricity Rules (Rules), the AER is responsible for the economic regulation of electricity transmission services provided by ElectraNet and other transmission network service providers (TNSPs) in the National Electricity Market (NEM).

The AER is required to provide ElectraNet with the opportunity to recover sufficient revenues to meet the efficient costs of providing electricity transmission services.

ElectraNet's Revenue Proposal has been the subject of detailed review by the AER and its consultants. The AER published ElectraNet's proposal on 29 June 2007 and called for interested parties to make submissions. The AER held a public forum on ElectraNet's proposal on 24 July 2007, where ElectraNet and interested parties made presentations. The AER engaged Sinclair Knight Merz (SKM) as a technical expert to advise it on key aspects of the Revenue Proposal. The AER also engaged CHC Associates to provide technical and engineering advice throughout the review.

On 28 November 2007, the AER published a draft decision on its transmission determination for ElectraNet (dated 9 November 2007). The purpose of this revised Revenue Proposal is to provide ElectraNet's response to the AER's draft decision.

In addition to ElectraNet's Revenue Proposal (May 2007), the AER's draft decision also considers ElectraNet's proposed negotiating framework for negotiated transmission services and ElectraNet's proposed pricing methodology related to the provision of prescribed transmission services.

The AER accepted ElectraNet's proposed negotiating framework, subject to minor drafting amendments, as compliant with the requirements of the Rules.

ElectraNet submitted a revised proposed pricing methodology to the AER on 14 December 2007 consistent with agreed transitional arrangements and ElectraNet's election to have its proposed pricing methodology (May 2007) assessed against the AER's 29 October 2007 pricing methodology guidelines[1].

2.2 Approach to Revised Proposal

ElectraNet's revised Revenue Proposal is submitted in accordance with Chapter 6A of the Rules.

ElectraNet has carefully reviewed all of the matters raised by the AER in its draft decision including, in particular, where the AER has made adjustments to ElectraNet's original proposal. In many instances, ElectraNet has implemented the changes required by the draft decision. Where ElectraNet has not fully adopted the AER's draft decision, the revised Revenue Proposal provides additional information,

[1] ElectraNet's revised proposed pricing methodology is available at www.aer.gov.au.

including expert reports, to address the matters raised by the AER and to demonstrate that the revised proposal satisfies the requirements of the Rules.

ElectraNet notes that although it has implemented many of the AER's adjustments to its Revenue Proposal (May 2007), this does not necessarily mean that ElectraNet accepts the rationale provided by the AER or its consultants for making them. Furthermore, these adjustments in the draft decision are not necessarily reasonable to make unless they are accompanied by the other elements of the revised Revenue Proposal.

ElectraNet submits this revised Revenue Proposal on the basis that the overall revised proposal, and its capital and operating expenditure forecasts in particular, reasonably reflect the efficient costs of a prudent operator and are consistent with realistic demand assumptions.

This revised proposal supplements ElectraNet's Revenue Proposal (May 2007) and makes extensive reference to it and the AER's draft decision. Therefore, this revised proposal should be read in conjunction with those documents.

2.3 Structure of Revised Proposal

The remainder of this revised Revenue Proposal is structured as follows:

- Chapter 3 discusses the opening regulated asset base for the next regulatory control period;
- Chapter 4 sets out the revised capital expenditure forecast;
- Chapter 5 sets out the revised operating expenditure forecast;
- Chapter 6 discusses the revised depreciation allowance;
- Chapter 7 discusses the benchmark weighted average cost of capital;
- Chapter 8 sets out revised values for the service target performance incentive scheme parameters;
- Chapter 9 sets out the maximum allowed revenues for the next regulatory control period; and
- Chapter 10 includes a table of Appendices to the revised Revenue Proposal.

3. Opening Asset Base

3.1 Summary

ElectraNet's RAB as at 1 January 2003 is prescribed in clause S6A.2.1(c)(1) of the Rules as $823.75 million. Chapter 7 of ElectraNet's Revenue Proposal (May 2007) sets out the roll forward methodology followed to establish the opening RAB as at 1 July 2008.

In its draft decision, the AER:

(a) Accepted adjustments to ElectraNet's RAB of $5.1 million for the difference between actual and forecast capex in the period 1 July to 31 December 2002 and $3 million associated with the foregone return on that difference (p. 35);

(b) Determined that $363 million of ElectraNet's commissioned assets during the current regulatory period were prudent and should be included in its RAB (p. 36);

(c) Determined that $44 million of ElectraNet's assets under construction were prudent and should be included in its RAB (p. 36);

(d) Determined that an additional $1.9 million interest during construction costs relating to assets under construction should be included in the RAB (p. 30);

(e) Accepted ElectraNet's proposal that an adjustment for easement compensation costs of $29 million should be added to the RAB (p. 44);

(f) Did not accept ElectraNet's proposed adjustment for easement transaction or acquisition costs of $53 million to be added to the RAB (p. 44);

(g) Accepted ElectraNet's proposal that previously optimised assets are required to provide prescribed transmission services during the next regulatory control period (p. 47); and

(h) Rejected the proposal to include $21 million in the RAB for previously optimised assets, requiring instead that the assets be readmitted to ElectraNet's opening RAB at a value of $17 million (p. 47).

ElectraNet has implemented all aspects of the AER's draft decision in relation to the opening asset base with the exception of the AER's treatment of easement transaction or acquisition costs. ElectraNet has also included an updated forecast of commissioned assets and assets under construction in the current regulatory period in establishing its revised opening RAB proposal. These two matters are discussed in the remainder of this chapter.

3.2 Easement Transaction or Acquisition Costs

AER Draft Decision

In its draft decision, the AER notes that the Rules allow it to consider adjustments to ElectraNet's RAB for easements and further that it is satisfied investors had a reasonable expectation that the regulator would be able to consider revaluation of ElectraNet's easements.

While the AER accepted ElectraNet's proposal that an adjustment for easement compensation costs of $29 million should be added to the RAB, it did not accept ElectraNet's proposal for easement transaction or acquisition costs of $53 million to be added to the RAB. The AER concluded that ElectraNet had not been able to provide sufficient evidence to enable the AER to be satisfied that these costs were not already included in the RAB as part of transmission line costs.

ElectraNet's Response

ElectraNet does not accept the AER's conclusion that insufficient evidence has been provided to allow it to be satisfied that easement transaction costs were not already included in the RAB as part of transmission line costs.

Were easement transaction costs included in the line valuation?

As noted in ElectraNet's Revenue Proposal (May 2007), the South Australian Government 1998 jurisdictional asset valuation included no recognition of easement transaction or acquisition costs. This fact is established in statements provided by Sinclair Knight Merz (SKM) who carried out the jurisdictional asset valuation. SKM stated that:

> *"… no elements of easement acquisition or route selection costs are included, or were ever included in SKM valuations.*
>
> *SKM can categorically and unequivocally confirm that its transmission line asset valuation database does not include any elements of route selection or easement acquisition costs. The database is constructed on the clear assumption that the transmission line is to be constructed on an existing easement."*[2]

SKM has stated unequivocally that its transmission line asset valuation database did not include any elements of route selection or easement acquisition costs and that all aspects of these costs were excluded from the 1998 valuation.

The SKM asset valuation was adopted as the jurisdictional asset valuation, hence there can be no doubt that easement transaction costs were excluded from the line valuation.

In its draft decision, the AER recognises that "*the ODRC revaluation of ElectraNet's transmission lines may have excluded undepreciated easement transaction costs*", but then decides that "*in the absence of any evidence to suggest otherwise, transaction costs would be deemed to be already included as part of transmission line costs*"[3].

The AER's position cannot be defended in the light of the categorical statements made by SKM. As has already been established, easement transaction costs incurred prior to 1998 were not included in the transmission line costs recognised in the jurisdictional asset valuation. These costs have, therefore, been excluded from the RAB.

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2 "ElectraNet SA Asset Valuation Review", SKM File Note, 8 June 2002.

3 AER Draft Decision – ElectraNet Transmission Determination 2008-09 to 2012-13, p. 44.

What evidence is there as to the exact nature and quantum of these costs?

In its draft decision the AER noted that no evidence had been provided as to the exact nature and quantum of easement transaction costs.

However, the nature and quantum of easement transaction costs was discussed in ElectraNet's Revenue Proposal (May 2007)[4].

Easement transaction costs are costs incurred to acquire the rights to easements, which include costs for surveying, drafting, valuation fees, negotiations, conveyance costs, Lands Titles Office and other government charges, mortgage production fees and reimbursement of professional fees incurred by the land owners. These costs are distinct from the easement compensation costs paid to landowners.

In 2002, the ACCC's consultant Meritec recommended that $36 million be introduced to the RAB to recognise the quantum of these costs based on the cost components and unit costs included in Table 3.1[5].

Table 3.1: Meritec easement acquisition cost components per easement/ownership[6]

For suburban areas	
Fees to negotiate easements	2,500
Fees to value easements for ElectraNet SA	2,000
In-house easement survey plans plus all documentation including discharge of mortgages etc	2,500
Representation of owner by solicitors	2,000
Representation of owner by valuer	2,000
Total	11,000
For rural and farming areas	
Ownership search and preliminary easement plan	200
Initial contact and preliminary negotiations	600
Assessment of easement compensation	800
Final cadastral survey for easement registration purposes	1,000
Final negotiations leading to agreement and/or compulsory process	1,800
Average payments made to solicitors/ valuers representing private ownerships	1,200
Preparation of easement documents, lodgement registration in Land Titles office	800
Total	6,500

At the time ElectraNet also provided a more comprehensive valuation by SKM which suggested a higher value of $54 million for easement transaction costs (also included in Meritec's report to the ACCC).

4 "Easement Value Adjustment Submission to the AER", May 2007 (included as Appendix S), pp. 18-21.

5 "ElectraNet SA Asset Base Review", Meritec report to ACCC, July 2002, p. 32.

6 Ibid, p. 28.

Have easement transaction costs been paid for by customers?

All undepreciated capitalised costs should be recognised in an ODRC valuation. This includes easement transaction costs capitalised as part of transmission line projects. As discussed earlier, there can be no doubt from categorical statements made by SKM who conducted the jurisdictional asset valuation for the South Australian government that to date there have been no easement transaction costs included in ElectraNet's RAB. On this basis customers have not paid.

Why the AER should allow ElectraNet's proposed easement transaction costs

The AER should accept ElectraNet's proposed adjustment for easement transaction costs of $53 million to be added to the RAB because:

- As has been established by ElectraNet's Revenue Proposal (May 2007), investors purchased ElectraNet with a reasonable expectation that the easements would be re-valued at a future revenue cap determination and factored this expectation into their investment decision (investors made a prepayment to the South Australian Government for network land lease, including easements, of $156.1 million);

- It would be inconsistent with the NEM objective to promote efficient investment in electricity services to decide not to revalue the easements as it would deny ElectraNet a fair return on its investment and therefore raise doubt as to the treatment of future investments with resultant implications for incentives for efficient investment;

- It is important to preserve regulatory certainty and the reliance investors can place on a regulator's undertaking; and

- As clearly shown below, easements are currently undervalued in comparison to easement values allowed by the ACCC in other TNSP revenue determinations (notwithstanding the adjustment for easement compensation costs included in the AER's draft decision).

What is an appropriate value for an easement transaction cost adjustment?

In its Revenue Proposal (May 2007), ElectraNet proposed an easement transaction cost adjustment of $53 million based on the CPI escalated mid point of the Maloney Field Services and SKM valuations included in the 2002 report of the ACCC's consultant Meritec. Section 7.6 of ElectraNet's Revenue Proposal (May 2007) includes the details of this proposal.

Table 3.2 shows easement values allowed in ACCC transmission revenue cap determination in comparison with easement lengths. The easement value allowed for ElectraNet in its 2002 revenue determination was $607 per km compared to $13,714 per km for the next lowest easement valuation – in other words all other TNSPs received recognition of easement value that was in excess of twenty times higher than that allowed for ElectraNet.

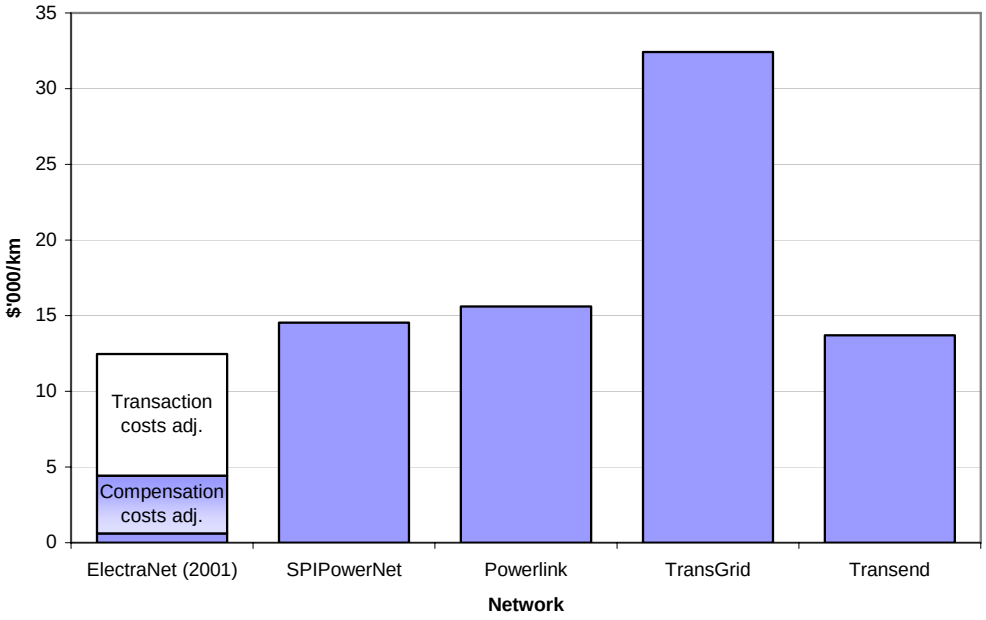
In its draft decision the AER accepted ElectraNet's proposal that an adjustment for easement compensation costs of $29 million should be added to the RAB. This increases ElectraNet's easement value to $4,429 per km, which is still too low at less than a third of the next lowest valuation.

ElectraNet's proposed adjustment for easement transaction costs results in easement costs per kilometre which are reasonable, but remain disproportionately lower than those of all other TNSPs. This comparison is illustrated in Figure 3.1.

Table 3.2: TNSP Transmission Line Circuit Lengths and Easement Values[7]

Easement value	Network Length (circuit km)	Value ($ million)	Value per circuit km
ElectraNet (2001)	5,600	3.4	607
ElectraNet (compensation)	5,600	24.8	4,429
ElectraNet (compensation and transaction)	5,600	69.8	12,464
SPI PowerNet	6,500	94.5	14,538
Powerlink	11,200	174.9	15,616
TransGrid	12,400	402	32,419
Transend	3,500	48	13,714

Figure 3.1: Comparison of TNSP Easement Values ($/km)



Conclusion

ElectraNet resubmits its proposed adjustment for easement transaction costs of $53 million to be added to the RAB consistent with the reasonable expectations of investors at the time of their investment decision.

As noted in ElectraNet's Revenue Proposal (May 2007), this would provide a conservative total easement value, which is significantly lower than:

[7] "Easement Value Adjustment Submission to the AER", May 2007 (included as Appendix S), p. 8. (updated) - Values from ACCC/AER decisions.

- the independent easement valuations that were made available to investors by the South Australian Government at the time of their investment decision; and

- the investor prepayment to the South Australian Government for network land lease (including easements) of $156.1 million.

3.3 Revised Capital Expenditure Forecast for 2007-08

AER Draft Decision

The AER accepted ElectraNet's past capital expenditure as prudent and stated that it "*will update the roll forward of ElectraNet's RAB with the most recent forecast of capex for 2007-08 and the latest CPI data, at the time of its final transmission determination*."[8]

In addition to accepting the value for assets under construction proposed by ElectraNet, the AER has included an interest during construction allowance on assets under construction to appropriately compensate ElectraNet for the change in regulatory regime from as commissioned to as incurred.

ElectraNet's Response

ElectraNet has updated 2007-08 forecasts for capitalisations and assets under construction in its revised Revenue Proposal. Forecast capitalisations for 2007-08 have decreased from $390.4 million to $389.0 million and assets under construction have increased from $45.9 million to $51.6 million.

3.4 Revised Opening Asset Base

ElectraNet's revised opening RAB as at 1 July 2008 is $1,277 million compared to $1,220 million included in the AER's draft decision. The increase in opening RAB is due to:

- inclusion of easement transaction or acquisition costs of $53 million;

- a reduction of $1.4 million in the 2007-08 capitalisation forecast; and

- an increase in forecast assets under construction of $5.7 million.

ElectraNet notes that the AER will update the opening RAB roll forward with actual March 2008 quarter CPI before its final decision is made.

Table 3.3 below shows the changes in the revised proposed asset base roll forward from the AER's Draft Decision.

[8] AER Draft Decision, p. 50.

Table 3.3: Adjustments to AER draft decision opening RAB ($m nominal)

	1 July 2008
Draft Decision opening RAB	1,220.36
Add: easement transaction costs	52.80
Add: increase in assets under construction	5.74
Less: reduction in 2007-08 capitalisations	(1.42)
Revised proposed opening RAB	1,277.48

Table 3.4 below shows the revised proposed opening RAB as at 1 July 2008.

Table 3.4: Revised opening RAB for the next regulatory control period ($m nominal)

	2003 Jan-Jun	2003-04	2004-05	2005-06	2006-07	2007-08[a]
Opening RAB	823.75	832.83	883.96	958.36	1,029.45	1,082.89
Forecast capex (adjusted for actual CPI) [b]	10.14	73.37	96.36	88.27	79.32	53.86
CPI adjustment on opening RAB	16.65	16.50	20.86	28.59	25.08	26.42
Straight-line depreciation (adjusted for actual CPI)	(17.71)	(38.75)	(42.81)	(45.78)	(50.95)	(48.20)
Closing RAB	832.83	883.96	958.36	1,029.45	1,082.89	1,114.97
Add: prudent capex over 2002 decision [c]						8.52
Add: return on difference [d]						3.04
Add: prudent assets under construction as at 30 June 2008						51.61
Add: readmitted optimised assets						17.44
Add: easement value adjustment						81.90
Opening RAB at 1 July 2008						**1,277.48**

(a) Updated for 2007-08 forecast capex.

(b) The capex values include a half WACC allowance to compensate for the average six-month period before capex is added to the RAB for revenue modelling purpose.

(c) Includes the difference between actual and forecast capex of $5.1 million for 1 July 2002 to 31 December 2002 and $3.4 million from 1 January 2003 to 30 June 2008. The cash value for disposal of assets have been deducted.

(d) This relates to the difference between actual and forecast capex of $5.1 million for 1 July 2002 to 31 December 2002.

(e) Numbers may not add due to rounding.

4. Forecast Capital Expenditure

4.1 Summary

Chapter 5 of ElectraNet's Revenue Proposal (May 2007) sets out the methodology followed to determine the capital expenditure (capex) forecast for the next regulatory control period together with the key inputs and assumptions used in determining the capex forecast.

As explained in its Revenue Proposal (May 2007), ElectraNet is facing a significantly higher capex requirement in the next regulatory control period due to the following cost drivers:

- Growth in demand and new mandated ETC reliability standards;
- An increasing number of assets nearing the end of their useful lives, which requires increased levels of asset replacement expenditure;
- Additional investment required to address concerns about the physical security of critical infrastructure;
- Real wages growth caused by a marked strengthening in employment demand in the mining, construction and manufacturing sectors in South Australia; and
- The price of transmission equipment currently rising well above inflation due to strong global demand.

In its draft decision, the AER made an assessment of ElectraNet's forecast capex for the next regulatory control period and:

(a) Accepted ElectraNet's capital governance framework stating that it contains appropriate controls, checks, accountability, reviews, approval gateways and that there is appropriate separation of prescribed and negotiated transmission services (p. 61);

(b) Assessed ElectraNet's use of ROAM Consulting's probabilistic scenario planning methodology as robust. The AER also considered that ESPIC's role in the development of the scenarios provided confidence to the objectiveness of the capex forecast (pp. 65-66);

(c) Accepted ElectraNet's proposed demand forecasts as reasonable and noted that the Electricity Supply Industry Planning Council (ESIPC)'s reconciliation of these forecasts provided confidence in their reliability (p. 72);

(d) Accepted ElectraNet's network planning framework as sound and consistent with good industry practice, that the ETC imposed additional planning requirements and that the joint planning arrangements with ETSA and ESIPC provided assurances that the most efficient project options have been identified (pp. 78-79);

(e) Accepted ElectraNet's Base Planning Objects (BPO's) as a reasonable basis to estimate the cost of forecast capital projects and accepted ElectraNet's s-curves as reasonable to develop the capex spend profile (pp. 90-91);

(f) Did not accept ElectraNet's forecast capex of $778 million and considered that the following adjustments should be made:

- Remove the line component of the Adelaide CBD ($105 million) and transformer ballistics proofing ($18 million) projects and make them contingent projects (p. 82 and p. 85);
- Substitute ElectraNet's proposed estimate of $4.1 million for the weather stations project with its own estimate of $2.2 million (p. 83);
- Reduce ElectraNet's proposed estimate for strategic land and easement acquisitions by $12 million (p. 84);
- Substitute ElectraNet's land and easement escalation costs of 10 per cent per annum with its own estimate of 8.17 per cent per annum (pp. 91-94);
- Substitute ElectraNet's non-labour construction cost escalation rates with those recommended by SKM (pp. 98-100); and
- Substitute ElectraNet's proposed cost estimation risk factor of 5.2 per cent with its own value of 2.6 per cent (pp. 102-105).

(g) Accepted ElectraNet's proposed contingent projects with the exception of the:

- Northern transmission reinforcement project ($250 million) on the basis that it included elements of negotiated transmission services and did not have a verifiable trigger; and
- Parafield Gardens West project ($14 million) on the basis that it included elements of negotiated transmission services (p. 115).

ElectraNet has implemented all aspects of the AER's draft decision in its revised Revenue Proposal with the exception of those related to:

- Weather station project costs;
- Strategic land and easement acquisition costs;
- Land and easement escalation;
- Non-labour construction cost escalation;
- Cost estimation risk factor; and
- Contingent projects.

ElectraNet's response addressing each of these matters raised in the AER's draft decision is included in the remainder of this chapter together with a revised capex forecast and revised proposed contingent projects for inclusion in the AER's final determination.

The draft decision also comments on the deliverability of the capex program with the AER concluding that while it is satisfied that ElectraNet has appropriate strategies in place to deliver the amended forecast capex program, it considers there is merit in deferring three proposed ETC driven projects towards the end of the next regulatory

control period. ElectraNet has taken the proposed deferrals into account in its revised capex forecast.

ElectraNet's revised capex forecast also includes additional asset replacement costs for assets that provide transitional services under the new Chapter 6A Rules which were not included in the Revenue Proposal (May 2007), but should be added to the final revenue cap. The rationale for the addition of these costs is discussed in Section 4.4 of this revised proposal.

ElectraNet is confident that its revised capex forecast is both efficient and prudent and that it meets the required Rules expenditure objectives.

Table 4.1 below sets out ElectraNet's response to the AER's draft decision by capex category.

Table 4.1: Summary of ElectraNet's response to draft decision by capex category

Forecast capex category	ElectraNet response
Augmentation	Revised estimate submitted
Connection	Revised estimate submitted
Replacement	Revised estimate submitted
Strategic land and easements	Revised estimate submitted
Security / compliance	AER accepted Revenue Proposal estimate
Inventory / spares	AER accepted Revenue Proposal estimate
Business IT	AER accepted Revenue Proposal estimate
Building / facilities	AER accepted Revenue Proposal estimate

4.2 Response to Matters Raised in the AER's Draft Decision

This section presents ElectraNet's response addressing matters raised in the AER's draft decision where ElectraNet does not accept the matters raised and is providing additional information for inclusion in the AER's final determination.

4.2.1 Weather Station Costs

AER Draft Decision

ElectraNet's proposed weather stations project included the installation of fifteen weather stations located across the South East, Mid-North and Eyre regions of the State to support the real time rating of transmission lines and improved utilisation of transmission line power transfer capacity.

Based on SKM's advice, the AER was not satisfied that ElectraNet had estimated the project based on the most efficient costs that a prudent TNSP would require to achieve the capex objectives. The AER accepted SKM's recommendation to reduce ElectraNet's proposed allowance for the weather stations project from $4.1 million to $2.2 million (a reduction of $1.9 million).

SKM considered that the proposed project costs ($0.3 million per remote site) were excessive and that the scope and cost of remote weather stations could be significantly reduced. Based on its experience with other TNSPs, SKM proposed that

the cost should be $0.15 million per remote site. This was based on the specific premise that costs could be reduced by using different types of communications systems, alternate power supplies and tower mounted weather stations.

ElectraNet's Response

ElectraNet does not accept that the AER's reduced allowance for this project reflects the costs that a prudent TNSP operating under the circumstances of ElectraNet would require to achieve the capex objectives.

In relation to SKM's recommendation that in some circumstances it may be possible to use lower cost communications solutions, ElectraNet considers this must be balanced against the need for reliable communications.

The only other TNSPs in the NEM that have implemented a co-ordinated roll out of weather stations as part of real time transmission line ratings systems are Transend (Tasmania) and SP AusNet (Victoria). SP AusNet has advised ElectraNet that it was able to utilise the mobile phone network for its communications to the transmission lines that have dynamic rating schemes applied to them because mobile phone coverage has been available where needed. Transend has fifteen weather stations. Eight are adjacent to existing substations and seven are at remote sites. At the remote sites, Transend has implemented radio links to the nearest substation RTU.

During 2006, ElectraNet constructed ten weather stations in the South East of the state. The actual cost for these ten sites was $2.1 million. Three of these weather stations were substation based and seven were at remote sites. ElectraNet spent approximately $0.28 million on each of the remote sites with actual (radio) communication costs alone ranging from $0.14 million to $0.15 million per site. SKM also reviewed in detail the costs of two other remote weather stations constructed on the Eyre Peninsula, which required even greater levels of expenditure due to their remoteness, and concluded that the costs of these were both prudent and efficient.

In the light of SKM's report and the AER's draft decision, ElectraNet has reassessed its original project scope and cost estimate based on adopting a 3G communications solution (this replaces the GSM technology noted by SKM) at sites where it considers reliable coverage may be available. ElectraNet has also taken into account the cost of engineering such a communications solution.

Table 4.2 provides details of the fifteen sites, the reassessed communications solution, the estimated cost per site and the proposed timing. The estimated costs are derived from base unit costs of:

- $0.05 million for substation sites with existing communications;
- $0.2 million for substation sites with no existing communications and no 3G coverage (i.e. requiring a radio solution);
- $0.15 million for remote sites with 3G coverage ; and
- $0.3 million for remote sites requiring a radio communications solution.

The estimated costs in the table include escalation of the above base unit costs.

Table 4.2: Proposed weather station sites, communications solutions and cost estimate ($m 2007-08)

Weather Station	Communications Solution	Estimated Cost [a]	Year
Engineering development of 3G solution	Not applicable	0.12	2008-09
Baroota substation	Substation currently has no communications – requires Radio	0.24	2008-09
Port Lincoln – Yadnarie 1	Radio	0.36	2008-09
Port Lincoln – Yadnarie 2	Radio	0.36	2009-10
Port Lincoln – Yadnarie 3	Radio	0.36	2009-10
Port Lincoln Substation	Communications already available	0.06	2010-11
Templers substation	Communications already available	0.06	2010-11
Roseworthy substation	Communications already available	0.06	2010-11
Brinkworth - Mintaro	Radio	0.36	2010-11
Waterloo – Templers	3G trial site	0.18	2010-11
Hummocks – Waterloo 1	Radio	0.36	2011-12
Hummocks – Waterloo 2	Radio	0.36	2011-12
Snuggery - Blanche	3G	0.18	2012-13
Bungama - Hummocks 1	3G	0.18	2012-13
Bungama - Hummocks 2	3G	0.18	2012-13
Bungama - Brinkworth	3G	0.18	2012-13
Total		**3.62** [b]	

(a) Estimated cost includes escalation of the base cost identified earlier

(b) Numbers may not add up due to rounding

The proposed annual expenditure profile over the next regulatory control period is shown in Table 4.11.

SKM also suggested that costs could be reduced by implementing non-grid power supply alternatives such as photovoltaic cells and making use of transmission towers rather than using stand alone masts.

The majority of the remote weather stations ElectraNet is proposing to implement are in close proximity to ETSA Utilities distribution lines. ElectraNet considers that this represents the lowest cost and most reliable form of power supply, which has minimal associated ongoing maintenance costs. Transend powers its remote sites with solar panels, augmented in some cases with wind or fuel cell technology. However, this alternative approach has only been implemented due to the lack of any mains power being close by, which would otherwise be preferred. These alternative supplies also require a higher ongoing maintenance effort to maintain their reliability.

ElectraNet is also satisfied that the use of stand-alone masts for weather station equipment and communications at remote sites is more practical and efficient in the long term compared to the use of transmission tower based solutions because:

- Earth potential rise associated with installing communications equipment on transmission line towers creates a safety and equipment reliability issue;

- Communications technicians do not need to have live line accreditation and work methods to access and maintain the equipment, providing a less hazardous alternative and reducing switching and work method complexity; and

- The site can be located with immediate, all-weather access on public land, which does not require negotiation with and disturbance of landholders.

ElectraNet does, however, utilise existing structures such as communications towers in substation based sites.

Appendix A2 includes relevant information supplied by Transend on its experiences with installing and using weather stations to support the real time rating of transmission lines.

ElectraNet's submits a revised weather station project cost estimate of $3.6 million (a reduction of $0.5 million from that originally proposed) for inclusion in the AER's final determination.

4.2.2 Strategic Land and Easement Costs

AER Draft Decision

ElectraNet's Revenue Proposal included $24 million for the acquisition of strategic land and easements to support future network developments.

The AER noted that, it is reasonable to provide ElectraNet an allowance for land and easements where the need and timing have been sufficiently demonstrated. However, for the Strategic Land Purchase RY2 High and Medium projects, the AER was not reasonably satisfied that the cost would be incurred during the next regulatory control period to achieve the capex objectives.

The AER noted that these projects provide for a uniform annual expenditure profile and sought clarification from ElectraNet on the reasons for this uniform expenditure. In response ElectraNet noted that this project consists of a number of projects with different timings and final expenditure plans will depend on appropriate routes and negotiations with landowners.

The AER concluded that:

> *"…this uncertainty as to expenditure plans of the sub-projects and the adoption of uniform expenditure demonstrates that the need for these strategic land projects is still not sufficiently determined*[9]*".*

The AER, therefore, reduced ElectraNet's proposed ex-ante capex allowance by $12 million.

ElectraNet's Response

ElectraNet does not accept that the AER's reduced allowance for this project reflects the costs that a prudent TNSP operating under the circumstances of ElectraNet would require to achieve the capex objectives.

[9] AER Draft Decision, p. 85.

The following additional information is provided to clarify the need for the Strategic Land Purchase RY2 High and Medium priority projects.

Clause 6.3.1 of the revised Electricity Transmission Code (1 July 2008) reinforces the obligation on ElectraNet for the early acquisition of land and easements to avoid breaching reliability standards.

> *"A transmission entity must use its best endeavours to obtain all necessary planning approvals and acquire all necessary easements on the basis of forecast demand prior to agreed maximum demand breaching the reliability standards specified in this industry code."*[10]

If ElectraNet followed the approach suggested by the AER's draft decision it would be at significant risk of breaching its obligations.

The AER recognised the importance of the early acquisition of land and easements in the Powerlink final revenue determination and stated that:

> *"The AER accepts it is good industry practice to acquire some easements before they are required for augmentation if their acquisition is likely to result in lower costs for customers in the longer term."*[11]

In its Revenue Proposal (May 2007), ElectraNet included forecast capex for strategic land and easement acquisitions that it considered would facilitate meeting the ETC requirement.

ElectraNet's "high, medium and low" ranking of planned acquisitions considered whether the land or easement was required within the demand forecast window and whether there are known difficulties that would suggest it likely that the land and/or easement may be unavailable when needed at a later date.

In summary, ElectraNet considers strategic land and easement acquisitions prudent if the land or easements are needed within:

1. Ten years based on ESIPC and customer connection point medium demand forecasts; or

2. Ten to twenty years based on the same forecast, in situations where there are known difficulties that suggest the land and/or easements are likely to be unavailable when needed at a later date.

Known difficulties might include, for example:

- Urban or regional centre boundary growth;
- Changes in development zoning;
- Issues identified in other infrastructure plans (e.g. local and state government plans);
- Known environmental, cultural or heritage issues; or

10 Electricity Transmission Code, ET/05, 1 July 2008, Clause 6.3.1, p. 22.

11 Powerlink Queensland transmission network revenue cap 2007-08 to 2011-2012 (Decision) p. 25.

- The site is strategic with benefits unavailable elsewhere; such as a transmission line crossing, or in close proximity to a transmission or distribution line, or adjacent to existing infrastructure that would minimise new line works.

ElectraNet has discussed this issue with the ESIPC and understands that it supports the above considerations to assist assessment of whether strategic land and easement acquisitions should be made[12].

ElectraNet also notes that the timely acquisition of land and easements well in advance of commencement of detailed project planning and consultation significantly reduces the impact and time of community consultation and provides greater project delivery and planning certainty.

Table 4.3 lists the planned acquisitions included in the Strategic Land Purchase RY2 High and Medium projects that ElectraNet is resubmitting in this revised proposal (with amendments resulting in a minor pre-escalation reduction in the forecast amount). Also included are details of the developments the planned acquisitions relate to, their estimated cost and timing, any foreshadowed difficulties or strategic reasons driving the need for early acquisition and the planned acquisition year.

The estimated costs include such elements as land for substations, communication sites and transmission line easements and are based on unit pricing consistent with recent acquisition experience for different asset types (e.g. substations, overhead line or telecommunications sites) and different land use areas (e.g. rural, suburban, industrial, inner city).

The proposed annual profile of expenditure on the Strategic Land Purchase RY2 High and Medium projects is shown in Table 4.11.

Table 4.3: Revised Proposal land and easement acquisition costs ($m 2007-08)

Project	Estimated Cost [a]	Required Timing and Foreshadowed Difficulties	Year(s)
Fleurieu Peninsula Reinforcement	4.40	Required within 0-10 year outlook. ETSA Utilities estimates that this transmission development will be required by 2014 to overcome major emerging distribution network limitations under system normal conditions. Urban encroachment and environmental sensitivities are known issues.	2008-10
South East Reinforcement	0.14	Required within 0-10 year outlook for second radio bearer through South East to meet NER security and compliance requirements. Requires specific sites to minimise line of site radio hops.	2009-10
Eyre Peninsula Reinforcement	0.55	Required within 10-20 year outlook even with Port Lincoln generation. Requires specific sites to minimise new transmission and distribution line works and line of site radio hops. Additionally, urban encroachment is a known issue in the vicinity of Port Lincoln.	2009-10
Mount Gambier Substation Rebuild	0.30	Required within 10-20 year outlook using medium demand forecast. Requires a nearby site to minimise new transmission and distribution line works and urban encroachment is a known issue.	2009-10

[12] Email correspondence from the ESIPC dated 24 December 2007.

Project	Estimated Cost [a]	Required Timing and Foreshadowed Difficulties	Year(s)
Kincraig Substation Rebuild	0.12	Required within 0-10 year outlook using medium demand forecast, though would be delayed with triggering and development of Lucindale West. If delayed, would still be required in 10-20 year outlook using medium demand forecast. Requires an adjacent site to minimise new transmission and distribution line works.	2010-11
Keith Substation Rebuild	0.12	Required within 10-20 year outlook using medium demand forecast. Requires an adjacent site to minimise new transmission and distribution line works.	2010-11
Eastern Suburbs – Yatala Vale	2.12	Required within 10-20 year outlook using medium demand forecast. Urban encroachment and environmental sensitivities are known issues.	2010-11
West Circuit into Brinkworth	0.24	Required within 10-20 year outlook using medium demand forecast. Shortest route sought to minimise transmission line length.	2010-11
Cherry Gardens to Happy Valley Second 275kV circuit Cherry Gardens to Happy Valley/Magill	1.29	Required within 10-20 year outlook using medium demand forecast. Urban encroachment and environmental sensitivities are known issues.	2011-12
Yorke Peninsula Reinforcement	3.78	Required within 10-20 year outlook using medium demand forecast. Environmental sensitivities are known issues.	2011-13
TOTAL	**13.06**		

(a) Estimated cost includes ElectraNet's escalation of land values, which results in a total amount that exceeds the AER's $12 million reduction in the ex-ante capex allowance.

ElectraNet resubmits the Strategic Land Purchase RY2 High and Medium projects (with minor amendments) at an estimated cost of $13.06 million for inclusion in the AER's final determination.

4.2.3 Land and easement escalation

AER Draft Decision

The AER noted that SKM analysed the effect of adopting short-term and long-term trends to forecast land price escalation rates and found that ElectraNet's proposed escalator of 10 per cent was outside the probable range that it considered would materialise over the next regulatory control period and, therefore, should not be accepted.

The AER considered that adoption of the weighted average of commercial, rural and residential land and easement escalation based on the entire available ABS data series (1989 to 2006) rather than the shorter data series adopted by ElectraNet (2000 to 2006) was consistent with the benchmark capex that would be incurred by an efficient TNSP over the regulatory control period.

Therefore, the AER substituted ElectraNet's annual escalation rate of 10 per cent with SKM's recommended rate of 8.17 per cent.

ElectraNet's Response

ElectraNet does not accept that the reduced annual escalation rate reflects the costs that a prudent TNSP operating under the circumstances of ElectraNet would require to achieve the capex objectives.

ElectraNet's proposed annual escalation rate of 10 per cent is expressed in real terms and was determined by adjusting the 13.0 per cent (nominal) forecast escalation rate for rural land by inflation. Given that 60 per cent of the land and easement acquisitions included in the capex forecast are classified as rural, and the fact that rural land has the lowest forecast escalation rate (compared to commercial and residential land), the annual escalation rate of 10 per cent (real) was considered to be a conservative value.

The AER substituted ElectraNet's annual escalation rate of 10 per cent (real) with SKM's recommended escalation rate of 8.17 per cent (nominal):

> *"SKM is of the opinion that the proposed 10% annual cost escalator is based on a short period of high price growth, and is higher than the long term trend and probable cost escalation that is likely over the period 2008 - 2013"* [13].

ElectraNet does not accept SKM's opinion on the likely growth in land values and notes SKM's acknowledgement in relation to the other cost escalators it considered that "*detailed macroeconomics and modelling are not part of SKM's normal course of business*" [14].

ElectraNet engaged BIS Shrapnel to provide advice on the appropriateness of its proposed land value escalators. The BIS Shrapnel report provides expert opinion that supports ElectraNet's proposed escalators based on the more recent historical data as consistent with the relevant economic indicators. In its report BIS Shrapnel makes the following observations[15]:

> *"BIS Shrapnel's forecast for the 2008-2013 period is for strong economic growth leading to strong property demand and prices, which, in turn, will drive an escalation of land values of similar order of magnitude to the growth so far this decade…"*
>
> *"the use of the 1990s decade data would unreasonably bias the likely escalation downwards as it reflects depressed conditions which are extremely unlikely to be repeated in the 2008-2013 period…"*
>
> *"it is more likely that the South Australian economy and property markets will be stronger over the next five years than in the last five…"*
>
> *"The average of increases observed for the past 17 years (as suggested by SKM) includes a decade of depressed property values and land values. Accordingly, using it will, we believe, significantly understate the escalation of land values over the 2008 to 2013 period. Indeed, there is a significant risk*

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13 SKM Review of ElectraNet Revenue Proposal, Final Report, 23 November 2007, p. 43.

14 Ibid, p. 41.

15 BIS Shrapnel report "Outlook for Land Values in South Australia", January 2008 (included as Appendix A3).

that land price escalation will be higher than over the first part of this decade".

Based on the expert opinion of BIS Shrapnel (included as Appendix A3), ElectraNet submits that the annual land value escalators included in its Revenue Proposal (May 2007) represent a reasonable and reliable forecast of land value growth in South Australia that reflects the costs a prudent operator in the circumstances of ElectraNet would require to achieve the Rules opex objectives.

ElectraNet resubmits an average annual escalation rate of 10 per cent (real) for land and easements for inclusion in the AER's final determination of its capex forecast.

Land and easement escalation in relation to the revised opex forecast is discussed in Section 5.2.1.

4.2.4 Non-labour construction cost escalation

AER Draft Decision

ElectraNet's proposed non-labour construction cost escalators were derived by Evans and Peck using statistical trend analysis of ABS producer price index (PPI) data to represent probable escalators for the various elements that make up ElectraNet's plant, equipment and materials costs.

The AER concluded that ElectraNet's proposed escalators were unreasonable and adopted an alternative set of escalators recommended by SKM.

The AER considered that SKM's alternative escalators were based on a more robust methodology of forecasting for the following reasons:

- Evans and Peck's report provided insufficient justification to validate the use of PPI's and trend based analysis as a basis for developing future cost escalators;
- The PPI's (specifically the general construction index) are too general and encompass a broad range of inputs from a variety of industries, whereas SKM used inputs to electricity infrastructure equipment that have been weighted based on market research;
- The PPI based recommendations seem to contradict sources such as ABARE, the IMF and the World Bank; and
- SKM considered a number of economic forecasts for each input cost component including base materials, labour, exchange rates and CPI to produce weighted forecast.

ElectraNet's Response

ElectraNet does not accept that the forecast escalators recommended by SKM and adopted by the AER reflect the costs that a prudent TNSP operating in the circumstances of ElectraNet would require to achieve the capex objectives.

ElectraNet considers that its proposed cost escalators were based on one of a number of reasonable forecasting methodologies. However, given the AER's views and the fact that a number of different forecasting techniques can validly be applied to

the same task, ElectraNet has examined the SKM forecast in detail to ensure it is sound in both method and application. To this end ElectraNet has undertaken additional work and engaged the Competition Economists Group (CEG) to advise on the development of annual escalation factors for its capex program[16].

SKM's recommended cost escalators

The escalators adopted by the AER based on SKM's recommendations are set out in Table 4.15 of the draft decision, which is replicated as Table 4.4 below.

Table 4.4: SKM's recommended non-labour escalators and weightings (per cent, nominal)[17]

	Weight	2007-08	2008–09	2009–10	2010–11	2011–12	2012–13
Labour [b]	29.0	5.6	5.6	6.0	6.3	5.9	5.6
Substation – primary	25.4	1.7	2.2	2.3	2.6	2.6	2.7
Protection and control	20.3	3.8	3.7	3.8	3.8	3.8	3.8
Civil	6.0	4.2	4.2	4.2	4.2	4.2	4.2
Overhead line	4.5	0.6	0.6	0.4	1.8	2.2	2.3
Underground cable	7.3	-0.3	-0.9	0.5	1.7	2.4	2.6
Land [c]	5.4	8.2	8.2	8.2	8.2	8.2	8.2
Miscellaneous materials (escalated by CPI) [d]	2.2	3.0	3.0	3.0	3.0	3.0	3.0
Weighted average annual escalation		**3.6**	**3.6**	**3.9**	**4.2**	**4.2**	**4.1**

(a) Weightings may not add up due to rounding
(b) SKM applied ElectraNet's proposed labour escalators
(c) SKM applied its recommended land and easement escalator
(d) SKM applied ElectraNet's proposed inflation forecast

As noted above, ElectraNet does not accept that these escalators reflect the costs that a prudent TNSP operating under the circumstances of ElectraNet would require to achieve the capex objectives. In particular, ElectraNet cannot accept the forecast escalators for the early years (including 2007-08) and the lower than inflation forecasts for substation primary equipment as reasonable.

ElectraNet has attempted to replicate SKM's non-labour cost escalators from the base data provided in SKM's report to SP AusNet that it has relied upon in determining the recommended escalators for ElectraNet[18]. However, ElectraNet has been unable to fully understand or replicate the SKM escalators due to a lack of transparency concerning how they have been derived. ElectraNet has also identified a discrepancy in SKM's report, and SKM has subsequently acknowledged that there appears to be an error in its original modelling[19].

16 CEG report, "Escalation factors affecting capital expenditure forecasts", 18 January 2008 (included as Appendix A4).

17 AER draft decision, p. 98.

18 SKM report for SP AusNet, "Escalation Factors affecting Capital Expenditure Forecasts", 21 February 2007.

19 Email correspondence from SKM dated 10 January 2008 and 15 January 2008.

ElectraNet considers that SKM's non-labour cost escalators should not be relied upon because:

- SKM's data sources and forecasting methodology are not transparent and cannot be replicated;
- the data sources that can be identified as being utilised by SKM are outdated and do not reflect the movement in prices in 2007, which are at odds with the predictions of SKM; and
- SKM has apparently identified an error in its original modelling.

Description of revised proposal forecasting method

The method adopted in this revised proposal is largely the same as the approach adopted by SKM. ElectraNet has no objections to SKM's forecasting methodology as such, but as noted above does have issues with the resultant values calculated by SKM.

Given that item specific forecasts of the cost of plant and equipment purchased by ElectraNet (such as transformers, switchgear, high voltage conductor and cable etc.) do not exist, it is necessary to identify the inputs used in the production of this plant and equipment for which forecasts are available.

For example, the transformers purchased by ElectraNet have been produced using labour, capital and materials (e.g. fabricated steel, copper, oil etc). For many of these inputs there are raw material forecasts and/or futures prices that can inform forecasts for transformers themselves.

The forecasting method is summarised by the following steps:

- Step 1 – breakdown the capex forecast for network capital projects into component costs (e.g. structures and fabricated steel, primary plant, transformers, aluminium conductor, labour etc.);
- Step 2 – breakdown the capex component costs into inputs for which there is a forecast available (e.g. aluminium, copper, steel, labour, construction etc.) and identify the weight that each input has in explaining the base period cost of the capex components identified in step 1;
- Step 3 – gather available forecasts for the component inputs identified in step 2 and select a point estimate/range for that forecast;
- Step 4 – calculate weighted average annual escalation factors for each capex forecast component by multiplying the forecasts in step 3 by the weights in step 2 and summing them.

In applying this forecasting methodology, ElectraNet has at step 1 broken down its capex forecast into a more detailed set of components than previously to address concerns about aggregation. At step 2 it has relied upon the component input weights used by SKM in its analysis, but amended for consistency with the component breakdown of ElectraNet's capex forecast. At step 3 ElectraNet has relied upon the forecast input escalators recommended by CEG. Further explanation of how ElectraNet has applied this methodology is provided below.

ElectraNet's revised non-labour cost escalators

ElectraNet has applied the forecasting methodology described above to develop a revised set of non-labour cost escalators.

Table 4.5 shows the breakdown of ElectraNet's network capital projects into component costs and how these costs have been further broken down into inputs for which an escalation forecast is available (steps 1 and 2). The breakdown of network capital projects into component costs is described in more detail in Appendix A9.

Table 4.5: Capex forecast components and input weights (per cent)

Component [a]	Weight	Aluminium	Copper	Steel	Oil	EGW wages	Construction costs	Other (escalated by CPI)	Land and easements
Labour	24.3					100			
Structures/ fabricated steel [b]	2.4			100					
Primary plant [b]	15.9		6		4			90	
Secondary systems [b]	13.4							100	
Transformers [b]	14.3		10	9	4			77	
Buildings	4.4						100		
Civil construction	12.9						100		
Electrical construction	6.2					100			
Transmission towers [b]	0.7			100					
Aluminium conductor [b]	0.3	60		5				35	
Concrete poles [b]	0.2							100	
Underground Copper cable [b]	0.02		55		5			40	
Land and easements	4.4								100
Materials – other	0.4							100	
Weighted average	100	2.4	0.2	1.2	4.4	30.4	17.3	39.6	4.4

(a) The breakdown of the capex forecast into component costs is described in Appendix A9.

(b) Input weights are based on those in Tables 6, 7 and 8 of SKM's report to SP AusNet. Where the SKM breakdown includes a labour component this has been reallocated to steel in the case of structures/ fabricated steel and transmission towers; and in all other cases to the "Other" category (escalated by CPI). This reallocation avoids double counting of this labour cost which has been included in the labour component of ElectraNet's forecast capex breakdown.

Table 4.5 shows that once component costs have been further broken down, approximately 40% of total network project costs are allocated to the Other input category to which no real cost escalation is applied.

Table 4.6 shows the forecast cost escalators applied to each of the input costs identified in Table 4.5 (step 3). These are presented as real annual escalators to year ended June.

Table 4.6: Forecast input cost escalators (per cent to year ended June, real)

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Copper [a]	30.5	-9.3	-11.1	-3.1	-3.4	-3.5	-3.7
Aluminium [a]	11.7	-15.1	-5.4	2.2	1.4	1.0	0.8
Crude oil [a]	-5.9	18.4	16.1	-3.3	-0.9	-1.7	-1.9
Steel [a]	2.9	0.0	0.0	0.0	0.0	0.0	0.0
Electricity, Gas and Water wages [b]	4.0	2.6	2.7	3.7	3.4	2.7	2.4
Construction costs [a]	6.4	2.3	1.8	0.7	0.5	0.9	1.8
Other (escalated at CPI)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Land and easements [c]	10.0	10.0	10.0	10.0	10.0	10.0	10.0

(a) Source: CEG report, "Escalation factors affecting capital expenditure forecasts", 18 January 2008 (included as Appendix A4), Tables 19 and 21. Commodity escalators reported by CEG in nominal terms have been converted to real escalators using the Fisher equation and the inflation forecasts in Table 21 of the CEG report.

(b) BIS Shrapnel forecasts accepted by the AER in its draft decision updated for actual inflation.

(c) ElectraNet has applied its average real annual escalator to land and easements.

CEG notes that using the above breakdown of costs and associated input cost escalators will underestimate the escalators to be applied to ElectraNet's capital program because growth in suppliers real wages costs and margins (reflecting the return on capital received by suppliers) are not taken into account:

> *"If ElectraNet were to factor in the impact of movements in these components of their costs, we believe that they would materially add to the estimated real escalation factors".*[20]

ElectraNet's revised non-labour cost escalators are set out in Table 4.7 and have been calculated using the input weights in Table 4.5 and the input cost escalators in Table 4.6 (step 4). These are presented as real annual escalators to year ended June.

ElectraNet has used the weighted average 2006-07 and 2007-08 escalators to convert its June 2006 network capital project estimates to June 2008 dollars. This is necessary because the AER's PTRM requires capex to be entered in June 2008 dollars[21].

[20] CEG report, "Escalation factors affecting capital expenditure forecasts", 18 January 2008 (included as Appendix A4), p. 19.

[21] AER final decision, "Electricity transmission network service providers post-tax revenue model", September 2007, pp. 5-6.

Table 4.7: ElectraNet's revised non-labour cost escalators and weightings (per cent to year ended June, real)

	Weight	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Labour [b]	24.3	4.0	2.6	2.7	3.7	3.4	2.7	2.4
Structures/ fabricated steel	2.4	2.9	0.0	0.0	0.0	0.0	0.0	0.0
Primary plant	15.9	1.6	0.2	0.0	-0.3	-0.2	-0.3	-0.3
Secondary systems	13.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transformers	14.3	3.1	-0.2	-0.5	-0.4	-0.4	-0.4	-0.4
Buildings	4.4	6.4	2.3	1.8	0.7	0.5	0.9	1.8
Civil construction	12.9	6.4	2.3	1.8	0.7	0.5	0.9	1.8
Electrical construction	6.2	4.0	2.6	2.7	3.7	3.4	2.7	2.4
Transmission towers	0.7	2.9	0.0	0.0	0.0	0.0	0.0	0.0
Aluminium conductor	0.3	7.1	-9.0	-3.2	1.3	0.8	0.6	0.5
Concrete poles	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Underground copper cable	0.02	16.5	-4.2	-5.3	-1.9	-1.9	-2.0	-2.1
Land and easements [c]	4.5	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Materials – other (escalated by CPI)	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Weighted average annual escalation	**100.0**	**3.6**	**1.6**	**1.5**	**1.6**	**1.5**	**1.3**	**1.4**

(a) Weightings may not add up due to rounding.

(b) BIS Shrapnel forecasts accepted by the AER in its draft decision.

(c) ElectraNet has applied its revised land and easement escalator.

Table 4.8 compares ElectraNet's revised weighted average annual escalators with those applied by the AER in its draft decision. This comparison shows that the draft decision escalators are low in all years of the next regulatory control period, but particularly in the early years.

The relatively higher proposed escalation to June 2007 reflects the significant price increases in plant, equipment and construction that have been experienced during the past 12 – 18 months and is consistent with movements in the unit rates used for developing ElectraNet's capital project cost estimates[22].

[22] The most recent annual update of the Powerlink Base Planning Objects (BPOs) used to estimate ElectraNet's capital project costs increases the capex forecast for network projects by 6 - 7 per cent (nominal).

Table 4.8: Comparison of ElectraNet's weighted average annual escalators with AER draft decision (per cent to year ended June, real)

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Draft decision escalators [a]	-	0.6	0.6	0.9	1.2	1.2	1.1
ElectraNet revised escalators	3.6	1.6	1.5	1.6	1.5	1.3	1.4

(a) The draft decision does not show escalation for 2006-07.

ElectraNet has applied the weighted average annual escalators in Table 4.7 (and Table 4.8) to its network capital project estimates in determining its revised capex forecast. No real cost escalation has been applied to non-network projects.

ElectraNet believes that it has addressed the concerns raised by the AER in its draft decision by:

- Adopting a methodology that considers a number of economic forecasts for each input cost component including base materials, labour, exchange rates and CPI to produce a weighted forecast – similar to the approach adopted by SKM; and
- Applying this methodology to a more detailed breakdown of its capex forecast into component categories.

ElectraNet believes that the escalators it has developed are more reliable than those recommended by SKM for the reasons stated earlier in this section and that they better reflect the costs that a prudent TNSP operating under the circumstances of ElectraNet would require to achieve the capex objectives.

ElectraNet submits the revised cost escalators in Table 4.7 for inclusion in the AER's final revenue determination.

4.2.5 Cost estimation risk factor

AER Draft Decision

The AER recognised the effect of cost estimation risk on efficient costs in its Powerlink revenue cap determination and considered it appropriate to apply an allowance to ElectraNet's capital program.

However the AER did not accept ElectraNet's proposal or SKM's advice that a 5.2 per cent cost estimation risk factor was appropriate and cited issues with the Evans and Peck methodology employed by ElectraNet. The AER instead drew links between ElectraNet and Powerlink's estimating processes and considered it appropriate for ElectraNet to apply the same 2.6 per cent risk factor as Powerlink had to its capex program.

In particular the AER identified the following issues with the methodology[23]:

[23] AER Draft Decision, pp. 103-104.

- Projected risk profiles and costs were based on the outcomes of a risk workshop and not any systematic evaluation of past evidence of actual occurrences or actual cost impact. In the absence of such evidence the risk profiles and costs were considered to be reliant on arbitrary projections;

- ElectraNet has not attempted to moderate the risk workshop outcomes to take account of new initiatives;

- The process inappropriately transfers typical operational business risks that are normally considered as being within the control of ElectraNet's management to users; and

- ElectraNet's risk assessment has only identified two instances of cost saving opportunities and the AER is not satisfied that ElectraNet has sufficiently identified and accounted for all possible gains from projects that could come under budget.

The AER concluded that these deficiencies it had identified indicate that the methodology adopted by ElectraNet does not lend itself towards its intended outcome of accurately providing an allowance for likely costs.

ElectraNet's Response

ElectraNet does not accept that the 2.6 per cent cost estimation risk factor adopted by the AER reflects the costs that a prudent TNSP operating under the circumstances of ElectraNet would require to achieve the capex objectives.

ElectraNet re-engaged Evans and Peck to provide a supplementary report addressing the specific concerns raised by the AER in relation to its methodology for estimating cost estimation risk. Evans and Peck's responses are summarised as follows:

- The approach adopted in developing the risk based estimates for ElectraNet was systematic and in the absence of reliable historical cost data was dependent on the combined knowledge of core ElectraNet personnel with actual project delivery experience. These personnel had a detailed understanding of the possible risks and opportunities likely to be encountered in delivering projects and the cost impact. This is a valid approach to adopt and widely used in the construction industry.

- The upper and lower boundaries of risk identified by the experienced personnel in the workshop takes into consideration the new initiatives and estimating process used by ElectraNet in developing its capital project cost estimates.

- The use of the 'Pert' distribution by its nature tends to be conservative and is heavily weighted towards the 'Most Likely' value. This means that the 'Pert' distribution is implicitly conservative (i.e. optimistic) in determining the likely final cost outcome. This implicit conservatism provides a moderated position.

- A portfolio of projects such as ElectraNet's capex program will have a combined level of risk that is less than the arithmetic sums of the component projects. The output of the risk modelling process is highly dependent on the number of projects in the portfolio. A larger number of projects provides a greater opportunity to diversify risk.

- Sensitivity analysis shows that due to the selection of the 'Pert' distribution and the moderating effect of the portfolio of projects, significant alterations to the risk boundary inputs does not have a significant impact on the out-turn capex cost. Evans and Peck conducted sensitivity analysis that tested risk boundaries well beyond reasonable limits, yet in the most extreme case (with the maximum boundary doubled) the effect was an increase in the risk factor from 4.6 per cent to only 8.0 per cent.

- Evans and Peck supports the view that unreasonable risk should not be transferred to customers. However, the approach adopted in developing risk based estimates does not transfer risk from ElectraNet to customers. Out-turn cost in excess of budget is a real cost of doing business, even in a well-run business. Allowances for reasonable risks should be built into budgets. The approach adopted to diversification of that risk explicitly results in a reasonable value for the risk allowance that ensures that inefficient expenditure or cost overruns would be incurred by the company.

- The statement that only two opportunities were identified in the model is incorrect. Each of the inherent risks identified in the model incorporates an opportunity. Each of the minimum values identified is below the 'Most Likely' value. We would expect diligent estimators to have already identified obvious cost savings in their base estimates. As a consequence, the likelihood of substantive decreases in cost is less than the possibility of increases arising from other risk factors. Notwithstanding this, a potential gain or reduction in cost is included in the model for all projects.

- A number of major public utilities and industry companies use quantified risk analysis to determine capital project budgets, indicating that risk-adjusted cost estimates are useful in determining the expected cost of a project or portfolio of projects. A comparison of the outcome from these evaluations that Evans and Peck is aware of produced a P50 risk factor of between 4.0 and 9.8 per cent. From this Evans and Peck infers that the 4.6 per cent risk factor proposed by ElectraNet (based on ElectraNet's revised capex forecast) is not unreasonable and within the bounds of other infrastructure programs.

Evans and Peck's responses to the issues raised by the AER are discussed in more detail in the supplementary report, which is included as Appendix A5.

Comparison of ElectraNet and Powerlink risk profile

The AER seems concerned that ElectraNet has sought a higher risk premium than was allowed for Powerlink in its recent revenue determination.

ElectraNet notes, however, Powerlink's view that its 2.6 per cent risk adjustment was extremely conservative and well below the level indicated by its historical performance[24]. Furthermore, ElectraNet has a different make-up of projects than Powerlink, a smaller network and is operating with a different labour force. These factors combine to provide ElectraNet with a smaller portfolio with less diversity than Powerlink (ElectraNet's forecast capex is less than a third of Powerlink's capex allowance).

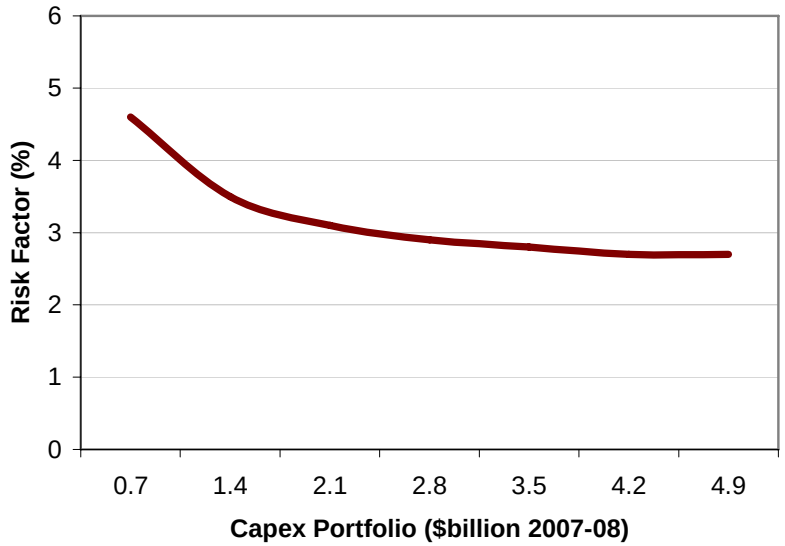
[24] Powerlink response to AER draft decision, Section 2.4.

A portfolio with less diversity assumes a higher risk. Less diversity in projects and fewer projects, means that the impact of realised risks on a single project will have more of an impact on the overall portfolio of projects (this only applies for project-specific risks, and not risks that are common to all projects).

The difference in project portfolio size and diversity between ElectraNet and Powerlink mean that ElectraNet could reasonably be expected to have a somewhat higher risk profile and therefore higher risk factor than Powerlink.

ElectraNet has undertaken a simple analysis to examine the impact of the size of the capital program on the portfolio risk factor. This was done by replicating ElectraNet's capital program a varying number of times and rerunning the cost estimation risk analysis. The results are shown in Figure 4.1 below. While these results should be considered as indicative only, they do support the conclusion that it is reasonable to expect that a smaller capital program has a higher risk profile associated with it than a larger one (assuming similar inherent and contingent risks).

Figure 4.1: Indicative impact of size of capital program on portfolio risk factor



ElectraNet also notes that Powerlink's 2.6 per cent risk factor was applied to all projects whereas ElectraNet's risk factor has only been applied to network capital projects. The implication of this is that the portfolio risk factors are not comparable on a like for like basis.

Revised cost estimation risk factor

ElectraNet has applied a robust and transparent methodology to estimate cost estimation risk, which is consistent with good industry practice. Application of this methodology results in a risk factor that has limited variability over a wide range of input assumptions (refer to section 9 of Evans and Peck's report).

ElectraNet notes SKM's conclusion that the resultant figure of 5.2 per cent for overall portfolio risk adjustment is within the range SKM expects from industry experience and should be accepted by the AER for inclusion within ElectraNet's forthcoming

revenue determination[25]. SKM's conclusion is supported by ElectraNet's own experience and the analysis and industry experience of Evan and Peck.

ElectraNet has re-applied the risk methodology for the purpose of its revised Revenue Proposal to take account of changes in the forecast capex program (for example removal of the Adelaide CBD line component which has been made a contingent project). This results in a lower cost estimation risk factor of 4.6 per cent, which has been applied to the network capital projects in ElectraNet's revised capex forecast[26].

ElectraNet submits a cost estimation risk factor of 4.6 per cent for inclusion in the AER's final determination. ElectraNet considers that this risk factor reflects the costs that a prudent TNSP operating under the circumstances of ElectraNet would require to achieve the capex objectives.

4.3 Capital Expenditure Profile – ETC Driven Projects

The draft decision comments on the deliverability of the capex program with the AER concluding that while it is satisfied that ElectraNet has the potential to deliver the amended forecast capex program, it considers that there is merit in deferring three proposed ETC driven projects towards the end of the next regulatory control period.

The AER wrote to ESCOSA on 24 October 2007 requesting it consider allowing ElectraNet to defer the commissioning of the following projects:

- Whyalla Terminal substation rebuild and transformer capacity increase;
- Wudinna transformer reinforcement; and
- Ardrossan West 132 kV substation partial rebuild and transformer capacity increase.

In response, ESCOSA has released a discussion paper seeking stakeholder comments on the following proposed amendments to the ETC[27]:

- Whyalla Terminal – to remain classified as a Category 3 load until 30 June 2010 and then be transferred to Category 4 thereafter, allowing deferral of the associated capital project from 2011 to 2013; and
- Wudinna – to remain classified as a Category 1 load until 30 June 2009 and then be transferred to Category 2 thereafter, allowing deferral of the associated reinforcement from 2011 to 2012.

ESCOSA considered that no change to the ETC was required to accommodate the potential deferral of the Ardrossan West capital project from 2011 to 2012 given that the required transformer capacity is not currently forecast to be exceeded until 2009 and 2012 is within the 3-year timeframe allowed by the ETC for restoring the required transformer capacity.

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25 Review of ElectraNet Revenue Proposal, SKM, p. 56.

26 Removal of the Adelaide CBD line component reduces rather than increases the risk factor because of the magnitude of this project and the significant risks associated with it.

27 "Amendments to the Electricity Transmission Code Discussion Paper", December 2007 available at www.escosa.sa.gov.au

However, the deferral of the Ardrossan West project from 2011 to 2012 is no longer feasible based on the record demands experienced by ETSA Utilities on the Yorke Peninsula of South Australia at the end of December 2007. ETSA Utilities has advised that it expects to revise its connection point demand forecast advancing the need for this project by one year.

Subject to ESCOSA amending the ETC prior to the AER's final decision, ElectraNet accepts the deferral of the Whyalla Terminal and Wudinna capital projects and has included these deferrals in its revised capex forecast. However, it would not be acceptable to expose ElectraNet to the risk that, following the appropriate regulatory process, ESCOSA decided not to make the relevant change. Such a risk would arise if the AER final decision predated the required amendments to the ETC.

Table 4.11 shows the adjustments to the annual proposed spend across the regulatory control period due to the deferral of the Whyalla Terminal and Wudinna projects. Amended project summaries for these deferred projects are included in Appendix A6.

ElectraNet's revised capex forecast incorporates the deferral of the Whyalla Terminal and Wudinna projects as proposed by the AER. However, these projects must not be deferred in the AER's final decision before ESCOSA has finalised the required amendments to the ETC.

4.4 Replacement of Assets Providing Transitional Services

The current revenue determination process is ElectraNet's first under the new Chapter 6A transmission rules introduced by the AEMC since the ACCC set ElectraNet's revenue cap in 2002. The emphasis in the new rules has shifted towards the services that the company provides to National Electricity Market participants and the relevance of the nature and costs of the assets that are owned or to be constructed by the company is that they contribute to the provision of those services. With respect to this the AEMC concluded:

> *"that the existing definitions of what services are regulated in the Rules are unclear, circular and require amending. It has also concluded that the scope and form of regulation is more appropriately determined on the basis of the functional and economic characteristics of services provided by the TNSP's, rather than on the basis of the assets involved in the delivery of services."*[28]

There is, however, an important transitional issue which the AER's final determination should take account of and which was not fully addressed in ElectraNet's Revenue Proposal (May 2007). That issue concerns the ongoing provision by ElectraNet of certain services that are currently subject to the ACCC revenue cap but which, if the new Chapter 6A Rules had applied when the services were initially provided, would not have been subject to the revenue cap for the reasons set out above.

There is a specific transitional provision that governs this issue in Rule 11.6.11(a), which provides that:

> *"References to prescribed transmission services in the new Chapter 6A include a service provided by an asset used in connection with or committed*

[28] Australian Energy Market Commission, *Rule Determination: National Electricity Amendment (Economic Regulation of Transmission Services) Rule 2006, No. 18*, 16 November 2006, p. 36.

to be constructed for use in connection with, a transmission system as at 9 February 2006:

(i) to the extent that the value of the asset is included in the regulatory asset base for that transmission system under an existing revenue determination in force at that time; or

(ii) if the price for the service has not been negotiated under a negotiating framework established pursuant to the old clause 6.5.9,

and, but for this clause, that service would not otherwise be a prescribed transmission service."

ElectraNet's Revenue Proposal (May 2007) took the approach of assuming that all asset replacements for such transitional services would be outside the revenue cap. However, upon more detailed investigation this is considered inappropriate for the following reasons:

- the approach would result in the costs of some assets which provide transitional services (the older assets) being recovered through the revenue cap and other assets (the newer assets) that provide exactly the same physical connection services at a customer connection point being recovered under a negotiated framework;

- an absurdity could commonly arise in which, for the very same transitional service, there would need to be a series of negotiations; for example, a new one each time an asset that provided the service came up for replacement;

- the unintended requirement of having to negotiate asset replacements for transitional services with the customer when the customer has not requested any change to the nature of the services provided – this would significantly undermine the purpose of the transitional arrangement, which is to provide continued certainty for all participants both TNSPs and those connected to the network who made investments under the old regime;

- in a context where the parties are committed to the provision and purchase of transitional services it is doubtful that any fully effective negotiation for the payment of part only of the costs of the transitional services could be undertaken; and

- the approach does not take account of the important shift in emphasis under the Chapter 6A Rules from a focus on the assets owned by TNSPs to a focus on the services that TNSPs provide.

Consequently, ElectraNet's revised capex forecast includes $44.5 million of asset replacement costs for assets that provide transitional services, which were not included in the Revenue Proposal (May 2007), but should now be added in the AER's final determination.

It is important to note that this does not imply that any user or users would necessarily pay more or less than they would have otherwise – merely that the whole costs of transitional services will continue to be recovered via the revenue cap rather than a complex combination of part recovery through the revenue cap and part recovery through a negotiation process.

Table 4.9 provides details of the asset replacement projects added to the revised capex forecast.

Table 4.9: Asset replacement projects added to revised capex forecast ($ 2007-08)

Project Name	Category	Estimated Cost	Description	Year
Morgan-Whyalla #1 Pumping Station	Replacement	9.0	Replacement of existing substation assessed as high risk	2010-11
Morgan-Whyalla #2 Pumping Station	Replacement	9.0	Replacement of existing substation assessed as high risk	2010-11
Mannum-Adelaide #1 Pumping Station	Replacement	9.1	Replacement of existing substation assessed as high risk	2011-12
Mannum-Adelaide #2 Pumping Station	Replacement	8.6	Replacement of existing substation assessed as high risk	2012-13
Mannum-Adelaide #3 Pumping Station	Replacement	8.7	Replacement of existing substation assessed as high risk	2012-13
Total		**44.5**		

The need for these replacement projects in the next regulatory control period has been established using ElectraNet's risk assessment methodology, including condition assessments and asset replacement recommendation reports, which the AER has accepted as consistent with good industry practice[29].

Project summaries for the five projects are included in Appendix A6.

ElectraNet's revised capex forecast includes $44.5 million of asset replacement costs for assets that provide transitional services, which were not included in the Revenue Proposal (May 2007), but should now be added in the AER's final determination.

4.5 Other Changes

For completeness, Appendix A6 also includes amendments to project summaries included in ElectraNet's Revenue Proposal (May 2007) for the Ardrossan West and Kadina East projects to reflect corrections and provide further clarification. These corrections and clarifications do not involve any substantive change to the projects.

4.6 Revised Forecast Capital Expenditure

This section presents ElectraNet's revised capex forecast for the next regulatory control period. The revised forecast is the result of applying the adjustments described earlier in this chapter to the AER's draft decision.

4.6.1 Summary of revised forecast

ElectraNet's revised capex forecast is shown by category in Table 4.10.

[29] AER Draft Decision, p. 249.

Table 4.10: Capital expenditure by category ($m 2007-08)

Category	2008-09	2009-10	2010-11	2011-12	2012-13	Total
Augmentation	39.6	50.4	27.8	27.9	10.8	156.5
Connection	36.6	33.6	34.4	18.0	4.6	127.3
Replacement	24.6	67.5	58.3	102.0	48.0	300.3
Easements	6.5	4.7	7.6	2.5	2.8	24.0
Security/Compliance	5.2	14.4	16.1	13.2	5.1	54.0
Inventory/Spares	3.4	2.4	2.4	2.4	5.5	16.1
Total Network	**115.9**	**173.0**	**146.5**	**166.1**	**76.7**	**678.2**
Information Technology	7.2	6.1	6.7	5.1	3.2	28.2
Facilities	9.3	0.6	0.4	0.9	1.6	13.0
Total Non-Network	**16.5**	**6.7**	**7.1**	**6.0**	**4.8**	**41.1**
Total Capex	**132.4**	**179.7**	**153.6**	**172.1**	**81.6**	**719.3**

Table 4.11 compares the revised capex forecast with the AER's draft decision showing incremental changes from the draft decision.

Table 4.11: Revised capex forecast incremental adjustments ($m 2007-08)

Adjustment	2008–09	2009–10	2010–11	2011–12	2012–13	Total
AER draft decision	126.1	176.9	130.2	115.8	57.2	606.3
ElectraNet modelling of draft decision [a]	126.5	180.4	130.5	112.5	56.2	606.0
Adjustment to annual construction cost escalators	8.0	13.8	10.0	8.5	4.1	44.5
Adjustment to cost estimation risk factor	2.4	3.7	2.7	2.3	1.1	12.1
Shift in timing of ETC driven projects [b]	-9.2	-33.3	-4.0	33.9	14.2	1.6
Adjustment to strategic land and easements	2.5	2.8	2.6	2.5	2.7	13.1
Adjustment to weather station project costs	0.3	0.3	0.3	0.3	0.3	1.4
Adjusted opex to capex transfer [c]	-0.7	-0.7	-0.8	-0.8	-0.8	-3.8
Addition of transitional services replacement projects	2.7	12.7	12.3	12.9	3.9	44.5
Total	**132.4**	**179.7**	**153.6**	**172.1**	**81.6**	**719.3**

(a) ElectraNet's modelling of adjustments made in the AER's draft decision
(b) Includes deferral of Whyalla Terminal and Wudinna capital projects.
(c) One of the opex projects transferred to capex by the AER has been reinstated as an opex project – the adjustment figures include the application of capex escalators to this project.

4.6.2 Directors' responsibility statement

In accordance with clause S6A.1.2(6) of the Rules, this revised Revenue Proposal must contain a certification of the reasonableness of the key assumptions that underlie the capital expenditure forecast by the directors of ElectraNet.

The director's responsibility statement is included in Appendix A1.

4.7 Contingent Projects

Details of ElectraNet's proposed contingent projects are included in Section 5.9 and Appendix H of its Revenue Proposal (May 2007).

This section presents ElectraNet's response addressing matters raised in the AER's draft decision together with revised contingent projects for inclusion in the AER's final determination.

4.7.1 Response to matters raised in the AER's draft decision

AER Draft Decision

ElectraNet's Revenue Proposal (May 2007) included seventeen contingent projects with a total indicative cost of $947 million. The AER considered that two of these projects should not be included as contingent projects[30]:

- The Northern Transmission Reinforcement project because the AER considered the proposed trigger event is not capable of objective verification (clause 6A.8.1(b)(4)) and because it contains capital works for assets, which provide both prescribed transmission services and negotiated transmission services, and therefore does not satisfy clause 6A.8.1(b); and

- The Parafield Gardens West project because the AER considered it contains capital works for assets which provide both prescribed transmission services and negotiated transmission services, and therefore does not satisfy clause 6A.8.1(b).

ElectraNet's Response

Northern Transmission Reinforcement

A description of this project was included in Appendix H of ElectraNet's Revenue Proposal (May 2007).

ElectraNet accepts that the originally proposed trigger event for this project did not satisfy the Rules requirements in respect of contingent projects. ElectraNet has addressed the AER's concerns raised in the draft decision by redefining the project trigger event and scope of works.

The trigger event has been redefined to be a customer application to connect or amend the connection agreement in accordance with Chapter 5 of the National Electricity Rules and application of the Regulatory Test for prescribed transmission

[30] AER Draft Decision p. 113.

services demonstrating that the proposed scope of works is both prudent and efficient.

The project scope has been modified to include only those components of works that are required for the provision of prescribed transmission services; i.e. assets required to support an increase in power transfer capability in the shared network. The revised $75 million indicative cost estimate for the project is based on the installation of dynamic and static reactive plant at Davenport substation to support power transfers on the shared transmission network between Adelaide and Port Augusta.

The proposed contingent project is described in more detail in Appendix A7.

Parafield Gardens West

ElectraNet does not accept the AER's draft decision in relation to the Parafield Gardens West project and, therefore, additional information is provided below to clarify the need for this project.

The AER assessed the project as including capital works associated with the provision of negotiated transmission services because the AER considered that the project is driven by an expansion of generation facilities.

While the project is intended to remove constraints associated with the expansion of generation facilities, the scope of works is wholly within the shared transmission network and physically removed from any generation connection. The works do not include any new or expanded facilities to connect generation to the transmission network.

Under the new Chapter 6A Rules, new or expanded connection services would be treated as negotiated transmission services. However, works to remove constraints on the shared transmission network are by definition prescribed transmission services (provided that a net market benefit is demonstrated by application of the Regulatory Test).

As the entire project is concerned with the provision of prescribed transmission services, the indicative cost estimate of $14 million will exceed the applicable contingent project threshold.

The trigger event for this project remains the application of the Regulatory Test for prescribed transmission services demonstrating that the project would deliver net market benefits.

The proposed contingent project is described in more detail in Appendix A7.

Contingent project threshold

ElectraNet's revised maximum allowed revenue for the first year of the next regulatory control period is $214 million (see Table 9.9). The applicable contingent project threshold is, therefore, five percent of this amount or $10.7 million.

ElectraNet resubmits the amended Northern Transmission Reinforcement and Parafield Gardens West contingent projects for inclusion in the AER's final determination. The issues raised by the AER have been addressed with both projects having verifiable triggers and scopes that only include assets providing prescribed transmission services.

4.7.2 Revised contingent projects proposal

ElectraNet's revised proposed contingent projects including trigger events and indicative costs are summarised in Table 4.12 below.

Table 4.12: Revised proposed contingent projects and indicative costs ($m)

Project Name	Trigger	AER Draft Decision	Revised Proposal
Eyre Peninsula Reinforcement	An increase in demand in the lower Eyre Peninsula region exceeding the published 2013-14 aggregated demand forecast for the region by 15 MW[31]	150	150
Riverland Reinforcement	An increase in demand in the Riverland region exceeding the published 2013-14 aggregated demand forecast for the region by 30 MW[31] or publication by VENCorp of available Murraylink dispatch into South Australia that is insufficient to provide the necessary network support to meet ETC reliability standards in the Riverland region	130	130
Yorke Peninsula Reinforcement	An increase in demand in the Yorke Peninsula region exceeding the published 2013-14 aggregated demand forecast for the region by 25 MW[31]	41	41
South East Reinforcement	An increase in demand in the South East region exceeding the published 2013-14 aggregated demand forecast for the region by 15 MW[31]	33	33
Bungama Reinforcement	An increase in demand in the Port Pirie area exceeding the published 2013-14 aggregated demand forecast for the area by 20 MW[31]	12	12
Southern Suburbs Reinforcement	An increase in demand in the Southern Suburbs of Adelaide exceeding the published 2013-14 demand forecast for the Southern Suburbs by 35MW[31]	16	16
Playford (Davenport) to Leigh Creek 132kV Transmission Line	An increase in demand on the Playford (Davenport) to Leigh Creek 132 kV transmission line more than 25 km from the Playford (Davenport) end exceeding the published 2013-14 aggregated demand forecasts for the existing loads connected to this line by 10 MW[31]	11	11
Fleurieu Peninsula Reinforcement[32]	DNSP application to connect in accordance with Chapter 5 of the Rules and successful completion of the Regulatory Test by the DNSP	65	65
Murray Mallee Reinforcement[32]	DNSP application to connect in accordance with Chapter 5 of the Rules and following successful completion of the Regulatory Test by the DNSP	34	34

[31] Aggregate of connection point demand forecasts for the region published by the ESIPC in its 2007 Annual Planning Report.

[32] ETSA Utilities has formally requested ElectraNet include these projects as proposed contingent projects.

Project Name	Trigger	AER Draft Decision	Revised Proposal
Munno Para Reinforcement[32]	DNSP application to connect in accordance with Chapter 5 of the Rules and successful completion of the Regulatory Test by the DNSP	26	26
Lucindale West Reinforcement[32]	DNSP application to connect in accordance with Chapter 5 of the Rules and successful completion of the Regulatory Test by the DNSP	17	17
Western Suburbs Reinforcement	DNSP application to connect in accordance with Chapter 5 of the Rules and successful completion of the Regulatory Test by the DNSP	15	15
Tailem Bend to Tungkillo Reinforcement	Application of the Regulatory Test demonstrating that the project would deliver net market benefits	41	41
Parafield Gardens West	Application of the Regulatory Test demonstrating that the project would deliver net market benefits	-	14
Para-Brinkworth-Davenport 275kV transmission lines	Application of the Regulatory Test demonstrating that the project would deliver net market benefits	12	12
Heywood Interconnection capacity upgrade	Application of the Regulatory Test demonstrating that an upgrade would deliver net market benefits	80	80
Northern Transmission Reinforcement	Customer application to connect or amend the connection agreement in accordance with Chapter 5 of the Rules and application of the Regulatory Test demonstrating that the proposed scope of works is both prudent and efficient	-	75
Adelaide CBD line works component	Successful completion of the Regulatory Test and receipt of development approval	105	105
Transformer ballistic proofing	A legal, regulatory or administrative determination made by a relevant authority or minister indicating the need for this project and a description of the credible threats	18	18
Total indicative cost		**805**	**894**

5. Operating and maintenance expenditure

5.1 Summary

Chapter 6 of ElectraNet's Revenue Proposal (May 2007) sets out the methodology followed to determine the operating and maintenance expenditure (opex) forecast for the forthcoming regulatory control period together with the key inputs and assumptions used in determining the opex forecast.

As explained in the Revenue Proposal (May 2007), cost drivers associated with asset growth, ageing assets, labour skills shortages, and a number of new costs such as land tax and generator testing obligations are contributing to the higher levels of opex experienced in recent years, which are expected to continue well into the future.

In its draft decision, the AER made an assessment of ElectraNet's forecast opex for the next regulatory control period and:

(a) Accepted ElectraNet's methodology for forecasting its opex requirement including the use of zero based forecasts for some opex components and the extrapolation of base year opex for the remaining opex categories (p. 142);

(b) Accepted ElectraNet's proposal to use 2005-06 as an efficient base year from which to forecast its opex requirements with the exclusion from the base year of zero based cost components (p. 144);

(c) Did not accept ElectraNet's proposed estimate for routine maintenance costs of $42 million ($2007-08) and substituted an estimate of $46.5 million ($2007-08) for the regulatory control period (p. 155);

(d) Accepted ElectraNet's proposed condition based maintenance forecast of $0.7 million ($2007-08) for the regulatory control period without adjustment (p. 151);

(e) Did not accept ElectraNet's proposed estimate for corrective maintenance costs of $28 million ($2007-08) and substituted an estimate of $26 million ($2007-08) (p. 157);

(f) Did not accept ElectraNet's proposed estimate for maintenance projects of $55 million ($2007-08) and substituted an estimate of $27 million ($2007-08) (p. 165);

(g) Did not accept ElectraNet's proposed estimate for field support costs of $45 million ($2007-08) and substituted an estimate of $43 million ($2007-08), based on an adjustment for land tax obligations (p. 165);

(h) Accepted ElectraNet's proposed $11 million ($2007-08) for operations costs as prudent (p. 166);

(i) Did not accept ElectraNet's proposed estimate for asset manager support costs of $33 million ($2007-08) and substituted an estimate of $32 million ($2007-08) based on an adjustment for generator testing obligations (p. 167);

(j) Did not accept ElectraNet's proposed estimate for corporate support costs of $55 million ($2007-08) and substituted an estimate of $53 million ($2007-08) based on an adjustment for skills development costs (p. 168);

(k) Accepted ElectraNet's proposed $14 million ($2007-08) for insurance costs as prudent (p. 168);

(l) Accepted ElectraNet's proposed $9 million ($2007-08) for self-insurance costs as prudent (p. 169);

(m) Accepted ElectraNet's proposed cost escalation factors for wages growth, non-labour costs and asset growth (pp. 172- 176);

(n) Accepted ElectraNet's proposed methodology for calculating an allowance for benchmark debt raising costs (p. 178);

(o) Did not accept and removed ElectraNet's proposed allowance for equity raising costs (p. 181); and

(p) Accepted ElectraNet's updated allowance for network support costs of $26 million ($2007-08) down from the Revenue Proposal figure of $27 million ($2007-08) (p. 177).

As summarised in Table 5.1, ElectraNet has implemented all aspects of the AER's draft decision with the exception of those related to:

- Field support costs – land tax;
- Corrective maintenance costs;
- Maintenance projects; and
- Equity raising costs.

ElectraNet's response addressing each of these matters raised in the AER's draft decision is included in the remainder of this chapter together with a revised opex forecast for inclusion in the AER's final determination.

ElectraNet is confident that its revised opex forecast is both efficient and prudent and that it meets the required Rules expenditure objectives.

Table 5.1: Summary of ElectraNet response to AER draft decision opex forecast

Forecast opex category	ElectraNet response
Routine maintenance	Implement AER's substituted estimate
Condition based maintenance	AER accepted Revenue Proposal estimate
Corrective maintenance	Revised estimate submitted
Maintenance projects	Revised estimate submitted
Field support	Revised estimate submitted
Operations	AER accepted Revenue Proposal estimate
Asset manager support	Implement AER's substituted estimate
Corporate support	Implement AER's substituted estimate
Debt raising costs	AER accepted Revenue Proposal estimate (adjusted for forecast capex)
Equity raising costs	Revised estimate submitted
Network support	AER accepted Revenue Proposal estimate (updated)

5.2 Response to Matters Raised in the AER's Draft Decision

This section presents ElectraNet's response addressing matters raised in the AER's draft decision where ElectraNet does not accept the matters raised and is providing additional information for inclusion in the AER's final determination.

5.2.1 Field support – land tax

AER Draft Decision

ElectraNet's land tax estimate is included in the Field Support opex category and is based on applying the land tax formula specified by the Valuer General to unimproved land values. In its Revenue Proposal (May 2007), ElectraNet estimated unimproved land values by applying a trend analysis to seven years of historical ABS data.

The AER accepted the methodology used by ElectraNet to forecast future land tax obligations, but considered that ElectraNet's proposed land value escalators present an overly positive view and so replaced them with those recommended by SKM, which are based on using all seventeen years of the available ABS historical data (p. 150).

ElectraNet's Response

ElectraNet's response to the AER's draft decision on land value escalation is set out in section 4.2.3 of this revised Revenue Proposal.

ElectraNet does not accept that the draft decision escalation rate reflects the costs that a prudent TNSP operating under the circumstances of ElectraNet would require to achieve the capex objectives.

In summary, ElectraNet has obtained an expert opinion from BIS Shrapnel confirming that a trend analysis of seven years of historical ABS data is a reasonable basis for estimating escalation of land values over the next regulatory control period; and that applying the longer data series adopted in the draft decision would significantly understate the expected escalation.

ElectraNet notes that the AER appears to have had regard to the 2007 South Australian Government budget statement, which assumes land values growing in line with inflation. ElectraNet has reviewed South Australian Government Budget statements over the past six years, which show a consistent pattern of substantial underestimation of the growth in land values in South Australia. It is apparent that South Australian Government budget forecasts are not a credible indicator of the expected escalation of land values over the next regulatory control period.

ElectraNet submits that the land value escalators included in its Revenue Proposal (May 2007) represent a reasonable and reliable forecast of land value growth in South Australia and that the revised estimate of $8.0 million for land tax obligations reflects the costs a prudent operator in the circumstances of ElectraNet would require to achieve the Rules opex objectives.

Other than the land tax forecast component, ElectraNet has implemented the AER's draft decision in relation to the Field Support forecast opex category.

Table 5.2: Adjustment to field support ($m 2007-08)

Category	2008-09	2009-10	2010-11	2011-12	2012-13	Total
Draft Decision field support	7.97	8.28	8.61	8.96	9.31	43.12
Adjustment for land value escalation	0.14	0.28	0.36	0.48	0.62	1.88
Revised Revenue Proposal field support	8.11	8.56	8.97	9.44	9.93	45.01

Note: Numbers include the influence of changes to the capex growth forecasts in the opex forecast model.

5.2.2 Corrective maintenance costs

AER Draft Decision

The AER has acknowledged the linkage between corrective maintenance expenditure and overall asset age and asset condition. The draft decision states that:

> *"It is reasonable to expect that improvements in the field maintenance regime will reduce the amount of corrective maintenance in the medium to long term, however, against that impact ElectraNet's asset age profile is increasing which is an indicator of possible increases in corrective maintenance."* [33]

In reviewing ElectraNet's detailed maintenance plans, SKM acknowledged that the investment by ElectraNet in the current regulatory period to address inadequacies of its maintenance policies are "*beneficial and necessary*"[34]. SKM also concluded that the current asset management strategies, operating practices and procedures are "reasonably efficient and in line with good industry practice" [35].

More specifically, in reviewing capital governance and linkages to the Asset Management Plan, SKM concluded:

> *"In light of this improved information on asset condition, ElectraNet has revised its asset management plans, triggering the increased maintenance effort evident from around the middle of the current period. The engineering, risk and economic analysis is robust and sophisticated, and supports good decision making and efficient outcomes"* [36]*; and*

> *"ElectraNet has invested significant effort in improving its asset management systems during the current regulatory period. The current framework is described below:... The outcome of this framework is the capital and maintenance programs. SKM has reviewed the documents and processes underpinning their development, and considers ElectraNet's overall asset management approach to be sophisticated and in line with good industry practice."* [37]

33 AER Draft Decision, p. 156.

34 SKM Review of ElectraNet Revenue Proposal, Final Report, 23 November 2007, p. xiv.

35 Ibid, p. xiv.

36 Ibid, p. 15.

37 Ibid, p. 16.

Despite these observations of a robust and sophisticated analysis, SKM considered that the condition of assets and the impact of opex projects are not adequately considered in the base year model for forecasting corrective maintenance costs.

In relation to the likely impacts on corrective maintenance SKM concluded:

> *"SKM has reviewed ElectraNet's opex application in detail, and accepts ElectraNet's core argument that its maintenance spend should be increased to reflect good industry practice. SKM also accepts ElectraNet's argument that corrective maintenance will also increase during the upcoming period as the additional inspection and routine maintenance activities will uncover defects requiring correction. However, once the first approximately 5 year cycle of increased maintenance is complete, SKM would expect the overall opex spend to reduce as corrective maintenance backlogs are eliminated and improved routine maintenance and inspection results in reduced defect rates."* [38]

The AER in its draft decision did not make any allowance for the anticipated increases in corrective maintenance early in the period, but removed real growth (labour escalation and asset growth) on corrective maintenance in the last two years of the next regulatory control period.

ElectraNet's Response

During the AER's review, two observations were made about the potential for corrective maintenance over the 2008-2013 regulatory period:

- Potential for increases in the short term due to increased inspection and condition assessment focus; and

- Potential for decreases in the longer term, once the new routine maintenance regime has completed a full round.

ElectraNet's asset management plans, including condition based asset replacement (capex) and opex maintenance projects, are focussed on maintaining the current overall level of network performance and risk rather than seeking an improvement. Consequently, ElectraNet considers that the corrective maintenance workload will not diminish during the next regulatory control period, but rather remain proportional to the size of the asset base.

ElectraNet agrees with the conclusions of SKM and the AER that there is a real likelihood that the corrective maintenance costs will increase in the shorter term as more attention is paid to assessing the condition of individual assets.

ElectraNet notes that this likely shorter term increase was not factored into the corrective maintenance forecast included in its Revenue Proposal (May 2007). This omission balances any potential longer term reduction in corrective maintenance within the forecast period (which reduction as stated above ElectraNet does not consider probable).

In summary, ElectraNet considers that its overall corrective maintenance forecast was conservatively low and reasonable because:

[38] Ibid, p. 128.

- ElectraNet's asset management strategy of maintaining overall network performance and risk means that corrective maintenance effort will remain proportional to the size of the asset base; and

- even if this proposition is not accepted by the AER, any potential longer term reduction in corrective maintenance is balanced by omission of the likely shorter term increases resulting from the increased focus on inspections and asset condition.

ElectraNet submits that the Revenue proposal (May 2007) represents a reasonable and reliable forecast for corrective maintenance costs and that the revised proposal estimate of $27.0 million reflects the costs a prudent operator in the circumstances of ElectraNet would require to achieve the Rules opex objectives.

Table 5.3: Adjustment to corrective maintenance costs ($m 2007-08)

Category	2008-09	2009-10	2010-11	2011-12	2012-13	Total
Draft Decision corrective maintenance costs	4.72	4.99	5.39	5.39	5.39	25.87
Adjustment	0.01	0.02	-0.03	0.26	0.90	1.17
Revised Revenue Proposal corrective maintenance costs	4.74	5.02	5.36	5.64	6.29	27.05

Note: Numbers include the influence of changes to the capex growth forecasts in the opex forecast model.

5.2.3 Maintenance projects

Summary

The AER made a number of adjustments to ElectraNet's forecast for maintenance projects. As summarised in Table 5.4 below, ElectraNet has implemented all aspects of the AER's maintenance projects draft decision with the exception of those related to:

- Uncertainty in project cost estimates; and

- Capitalisation of protection systems.

ElectraNet's response addressing these matters raised in the AER's draft decision is included in the remainder of this section.

Table 5.4: Summary of ElectraNet response to maintenance project adjustments

Maintenance Project Adjustment Category	ElectraNet response
Corrections	Implement AER's substituted forecast
Uncertainty	Revised estimate submitted
Estimates (line project escalation)	Implement AER's substituted forecast
Transformer refurbishment	Implement AER's substituted forecast
Capitalisation – transformer refurbishment	Implement AER's transfer to capex
Capitalisation – auxiliary supplies	Implement AER's transfer to capex
Capitalisation – protection systems	Revised estimate submitted

Uncertainty

AER Draft decision

SKM expressed concern about the uncertainty of the project estimates that were identified from the condition assessments. The concerns related to uncertainty in size of the individual scopes and consideration of efficiencies that may be available through bundling with other works.

Based on its concerns, SKM recommended a reduction of 5 per cent for substations, secondary systems and communications projects, and a reduction of 10 per cent for lines projects.

SKM qualified their concerns in general terms but did not provide any quantifiable analysis to support the proposed level of reductions, noting:

> *"…it is difficult to estimate the quantum of the likely improvement. SKM has proposed a nominal adjustment. A smaller reduction for substation projects compared to lines seems warranted given that more detailed condition assessment reports are available for substations"* [39]*.*

Without substantiating how or why ElectraNet's proposal was not reasonable, the AER rejected it and instead accepted SKM's recommendation to adjust the maintenance project forecast.

ElectraNet's response

In presentations to SKM and the AER, ElectraNet has confirmed that the maintenance project estimates are of the same level of accuracy as those used for its Level A capital project cost estimates; that is ± 20%. The estimates have been based on historical expenditures per unit task for similar packages of work and consequently include consideration of any efficiencies or benefits that were available at the time of doing the work.

The scope of the work has been developed based on sound risk management principles, and does not include any allowance for contingency in the project estimates. As is the case with the capex projects, any uncertainty is likely to result in greater risk of higher rather than lower expenditure. No allowance for this risk has been included in the project cost estimates. Consequently, ElectraNet considers that the cost estimates represent a conservatively low estimate of efficient delivery of the projects.

ElectraNet considers the arbitrary adjustments proposed by SKM and accepted by the AER, for uncertainty in the maintenance projects costs have not been reasonably justified in light of the opex objectives set out in the Rules and should, therefore, not be applied.

ElectraNet resubmits the maintenance projects forecast as per its Revenue Proposal (May 2007). ElectraNet considers this reflects the costs a prudent operator in the circumstances of ElectraNet would require to achieve the Rules opex objectives.

[39] SKM Review of ElectraNet Revenue Proposal, Final Report, 23 November 2007, p. 114

Capitalisation of maintenance projects – protection systems

AER Draft decision

The AER accepted SKM's recommendation that works proposed by ElectraNet for replacement of protection system components constitutes the replacement of major components of assets that would increase the expected life of secondary systems and provide additional functionality. They concluded that this work should, therefore, be capitalised in accordance with ElectraNet's capitalisation policy.

ElectraNet's response

The protection maintenance projects proposed by ElectraNet relate to replacement of selected relay types which have an unacceptably high risk of failure over the 2008-13 regulatory period. The project includes replacement of up to five individual relays installed at each of nineteen sites.

ElectraNet's capitalisation policy defines relay panels as the unit of property, and replacement of individual relays falls below that level. Consequently the replacement of single relays should not be considered as capital expenditure. The relevant clause of the capitalisation policy is provided below:

> *"6.8 Maintenance and Replacement of Part of Assets*
>
> - *Where parts of assets are replaced, which will not increase the useful life of an asset or increase functionality resulting in future economic benefits then the cost of replacement will be expensed. Examples include replacement of individual control and protection relays and re-insulation of transmission lines."* [40]

As the proposed replacements are only a small portion of the relays within the entire suite of relays on a relay panel, the proposed replacements do not extend the economic or technical life of the entire relay panel, or defer future capital replacements.

The replacement relays will be newer types with increased functionality because like for like replacements are no longer available, and repair of existing units is not practical or economically feasible. Despite the use of a relay with greater inbuilt functionality, the entire panel and communications are not being upgraded and so ElectraNet will not be able to take advantage of the additional functionality provided by the individual relay.

Therefore, ElectraNet does not accept that capitalising the proposed protection maintenance projects is consistent with its capitalisation policy.

ElectraNet resubmits the proposed protection projects as part of its opex maintenance project forecast as per its Revenue Proposal (May 2007). A corresponding adjustment has been made to ElectraNet's revised capex forecast. ElectraNet considers this reflects the costs a prudent operator in the circumstances of ElectraNet would require to achieve the Rules opex objectives.

[40] ElectraNet Capitalisation of Assets Policy, Version 2, 26 April 2007, p. 6 (provided to the AER and SKM on 29 August 2007).

Table 5.5 summarises the maintenance projects adjustments included in the revised Revenue Proposal.

Table 5.5: Adjustment to maintenance projects ($m 2007-08)

Category	2008-09	2009-10	2010-11	2011-12	2012-13	Total
Draft Decision maintenance projects	6.12	5.62	5.65	5.57	4.48	27.45
Adjustment for uncertainty	0.45	0.52	0.51	0.49	0.40	2.37
Adjustment for capitalisation of protection systems	0.80	0.84	0.86	0.86	0.87	4.23
Revised Revenue Proposal maintenance projects	7.38	6.97	7.01	6.92	5.76	34.05

Note: Numbers may not add due to rounding.

5.2.4 Equity Raising Costs

AER Draft decision

The AER accepted in principle ElectraNet's proposed cash flow approach to determining a benchmark allowance for equity raising costs. However, the AER concluded that ElectraNet does not require equity raisings costs as the benchmark cash flow approach indicates that ElectraNet would be able to fund its capex program over the next regulatory control period with retained cash flows.

ElectraNet's response

ElectraNet notes the AER's acceptance of the benchmark cash flow methodology. The AER's conclusion that no equity raising is required to fund the capex program in the next regulatory control period is dependent on excluding the line component of the Adelaide CBD capital project from the analysis.

ElectraNet understands that the line component of this project has been removed from the analysis because in the AER in its draft decision has removed it from the ex-ante capex forecast and identified it as a contingent project. However, ElectraNet submits that the line component of the Adelaide CBD project should not be excluded from the analysis to determine benchmark equity raising costs because there is no uncertainty whatsoever that the project will proceed. The Electricity Transmission Code requires the project to be completed by December 2011.

Using the benchmark cash flow methodology adopted by the AER in its draft decision, ElectraNet's revised capex forecast plus the addition of the Adelaide CBD line component, results in equity raising costs for the period of $0.84 million.

ElectraNet has included the $0.84 million equity raising costs as an allowance within the regulatory period, which is different in approach to the annuity stream based allowance included in the Revenue Proposal (May 2007). For practical reasons, ElectraNet prefers benchmark equity raising costs to be recognised in this way or alternatively to have equity raising costs included in the RAB as was the case in the AER's Powerlink revenue determination. Equity raising costs are shown below in Table 5.6.

Table 5.6: Adjustment to equity raising costs ($m 2007-08)

Category	2008-09	2009-10	2010-11	2011-12	2012-13	Total
Draft Decision equity raising costs	0.00	0.00	0.00	0.00	0.00	0.00
Adjustment	0.12	0.12	0.12	0.12	0.12	0.60
Revised Revenue Proposal equity raising costs	0.17	0.17	0.17	0.17	0.17	0.84

ElectraNet submits that the Adelaide CBD line component should be included in the calculation of benchmark equity raising costs and that a benchmark allowance of $0.84 million for equity raising costs in the next regulatory control period reflects the costs a prudent operator in the circumstances of ElectraNet would require to achieve the Rules opex objectives.

ElectraNet notes that benchmark equity raising costs should also be considered as part of future contingent project revenue determination processes.

5.3 Revised Forecast Operating and Maintenance Expenditure

This section presents ElectraNet's revised opex forecast for the next regulatory control period. The revised forecast is the result of applying the adjustments described earlier in this chapter to the AER's draft decision.

5.3.1 Summary of revised forecast

ElectraNet's revised opex forecast is shown by category in Table 5.7.

Table 5.7: ElectraNet's revised opex forecast ($m 2007-08)

Category	2008-09	2009-10	2010-11	2011-12	2012-13	Total
Field maintenance	20.33	20.85	21.32	22.05	22.21	106.76
Field support	8.11	8.56	8.97	9.44	9.93	45.01
Operations	1.96	2.04	2.12	2.19	2.27	10.57
Asset manager support	6.15	6.29	6.43	6.54	6.68	32.08
Corporate support	13.86	14.29	15.12	16.07	16.52	75.86
Total controllable opex [b]	**50.40**	**52.03**	**53.95**	**56.29**	**57.61**	**270.27**
Network support	4.69	4.84	5.04	5.36	6.30	26.22
Debt raising costs [a]	0.64	0.68	0.74	0.79	0.85	3.70
Equity raising costs	0.17	0.17	0.17	0.17	0.17	0.84
Total opex [b]	**55.89**	**57.71**	**59.90**	**62.61**	**64.93**	**301.04**

(a) Debt raising costs updated for revised capex forecast.
(b) Numbers may not add due to rounding

The opex expenditure in each of the controllable opex categories is dependant on the level of growth capital works, and this dependency is represented in the opex forecast modelling that has been accepted by the AER in its draft decision. In preparing the revised opex forecast, ElectraNet has updated the growth capital works inputs to the opex forecast model.

Table 5.8 compares the revised opex forecast with the AER's draft decision.

Table 5.8: ElectraNet's revised opex forecast ($m 2007-08)

Category	2008-09	2009-10	2010-11	2011-12	2012-13	Total
AER's controllable opex	49.24	50.42	52.61	54.55	54.60	261.42
Network support costs	4.69	4.84	5.04	5.36	6.30	26.25
Debt raising costs	0.60	0.64	0.70	0.74	0.77	3.46
Equity raising costs	0.00	0.00	0.00	0.00	0.00	0.00
AER's total opex	**54.54**	**55.90**	**58.35**	**60.66**	**61.68**	**291.13**
Revised proposal controllable opex	**50.40**	**52.03**	**53.95**	**56.29**	**57.61**	**270.27**
Network support costs	4.69	4.84	5.04	5.36	6.30	26.22
Debt raising costs	0.64	0.68	0.74	0.79	0.85	3.70
Equity raising costs	0.17	0.17	0.17	0.17	0.17	0.84
Revised total opex	**55.89**	**57.71**	**59.90**	**62.61**	**64.93**	**301.04**

Note: Numbers may not add due to rounding.

Table 5.9 sets out a summary of ElectraNet's adjustments to the AER's draft decision controllable opex. These adjustments are derived from the opex forecast model.

Table 5.9: Comparison of revised opex forecast and AER draft decision ($m 2007-08)

Item	2008-09	2009-10	2010-11	2011-12	2012-13	Total
Draft Decision total controllable opex	49.24	50.42	52.61	54.55	54.60	261.42
Adjustment for field support (land tax)	0.14	0.28	0.36	0.48	0.62	1.88
Adjustment for corrective maintenance	0.01	0.02	-0.03	0.26	0.90	1.17
Adjustment for maintenance projects	1.26	1.35	1.36	1.35	1.28	6.60
Revised proposal total controllable opex	**50.40**	**52.03**	**53.95**	**56.29**	**57.61**	**270.27**

Note: Numbers do not add because asset growth changes impact on other opex categories.

5.3.2 Comparison of revised opex forecast with SKM benchmarks

In its report, SKM identified a range of opex to replacement cost ratios that represent efficient level of expenditure. Figure 5.1 below provides an update of the data in Figure 26 of the SKM report by including the controllable opex forecast from the AER's draft decision and ElectraNet's revised proposal. The figure also takes into account the applicable capex forecasts in calculating the corresponding asset replacement cost.

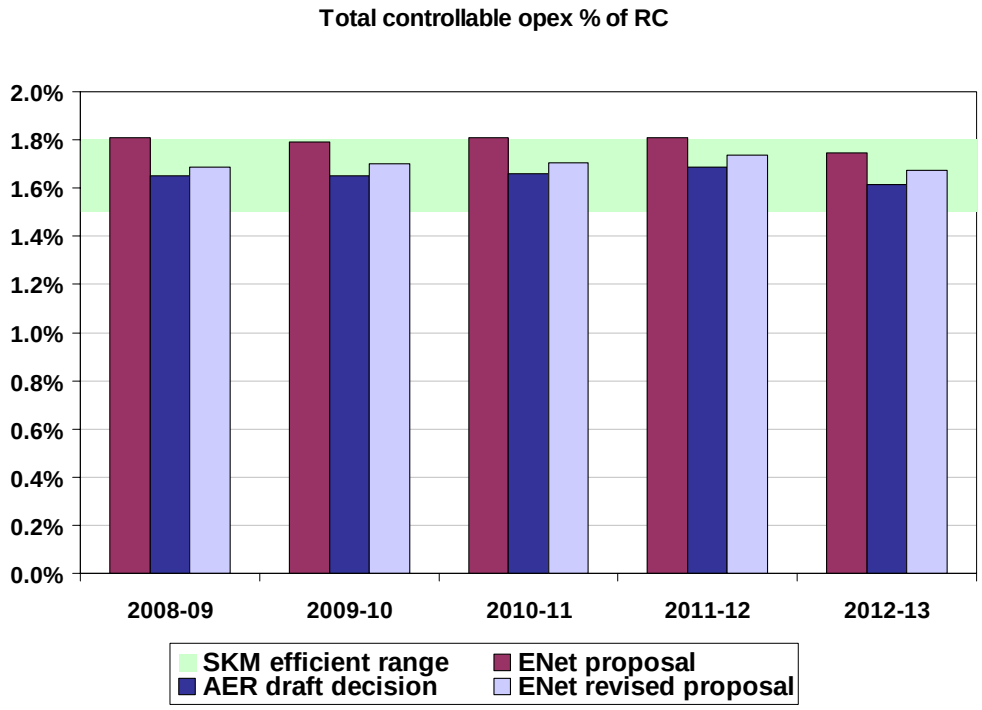
ElectraNet's revised proposal results in an opex to replacement cost ratio that is towards the middle of SKM's efficient band despite having a relatively aged asset base. Assessment of this comparative measure needs to take into account the

relative age and condition of the network, and that it would be reasonable for the sustainable costs for an aged network such as ElectraNet's to be towards the upper end of the range.

ElectraNet notes that the substantive difference between the draft decision and the revised proposal is specifically related to the management of aged assets (i.e. corrective and maintenance projects work).

The conclusion to draw from this is that ElectraNet's revised controllable opex forecast is reasonable and towards the middle of SKM's efficient level of expenditure band.

Figure 5.1: Controllable opex per total asset replacement cost ($m 2007-08)



5.3.3 Directors' responsibility statement

In accordance with clause S6A.1.2(6) of the Rules, this revised Revenue Proposal must contain a certification of the reasonableness of the key assumptions that underlie the operating expenditure forecast by the directors of ElectraNet.

The director's responsibility statement is included in Appendix A1.

6. Depreciation

6.1 Summary

ElectraNet's Revenue Proposal (May 2007) presented ElectraNet's assessment of the allowable depreciation on prescribed service assets during the next regulatory control period.

Clause 6A.6.3 of the Rules requires that the nominated depreciation schedules must use a profile that reflects the nature of the category of assets (which must be classified into well accepted categories) over the economic life of that category of assets. ElectraNet depreciated each asset category in the RAB on a straight-line basis over its economic life. In accordance with the requirements of Clause 6A.6.3, ElectraNet followed standard practice by assigning a regulatory life to each category of assets that equates to its expected economic or technical life.

ElectraNet's proposal included adopting new standard asset lives for substation secondary systems (electronic), substation demountable buildings, substation fences, network switching centres and computers, software and office machines that better reflect the expected economic or technical life of these assets.

ElectraNet notes that clause 6A.6.3(a)(2) of the Rules requires that the AER must accept ElectraNet's proposed depreciation schedules for each asset or category of assets provided that they conform with the requirements set out in clause 6A.6.3(b) of the Rules. ElectraNet is confident that its revised depreciation schedules meet the necessary Rules requirements.

In its draft decision, the AER:

(a) Accepted ElectraNet's proposed standard asset lives with the exception of the proposed standard asset lives for computers, software and office machines and computer-related equipment (network switching centres) (p. 211);

(b) Determined that computers, software and office machines and network switching centres should be depreciated over five years rather than the three years proposed (p. 211); and

(c) Did not accept the tax asset life of 33 years proposed for commercial buildings and replaced it with a tax asset life of 40 years consistent with ElectraNet's depreciation policy (p. 211).

ElectraNet has implemented all aspects of the AER's draft decision in relation to depreciation with the exception of the standard asset life for computers, software and office machines.

ElectraNet's response addressing this matter raised in the AER's draft decision is included in the remainder of this chapter together with revised forecast depreciation schedules for inclusion in the AER's final determination.

6.2 Computers, Software and Office Machines

AER Decision

In its draft decision, the AER was not satisfied that ElectraNet's proposed asset life of three years for the computers, software and office machines asset class is consistent with Australian industry standard. Instead the AER determined that the asset life for this asset class should remain at five years.

ElectraNet's Response

In its Revenue Proposal (May 2007), ElectraNet considered the turnover rate of modern day computer equipment to be approximately every three years. However, in response to the AER's draft decision ElectraNet has conducted a more detailed analysis of the expected economic or technical life of its computers, software and office machines asset class.

Table 6.1 shows a breakdown of this asset class into its component parts and the expected economic or technical life of each component. The table also includes the forecast capital expenditure in each of the component categories in the next regulatory control period.

Table 6.1: Expected economic life of computers, software and office machines

Asset Type	Asset Life (years)	Revised Capex Forecast $m 2007-08
Large software products (SAP)	5	8.54
Operating Systems	4	4.72
Servers	4	2.44
Office productivity software	3	9.58
Desk top computers and laptops	3	1.45
Network equipment	3	0.57
Printers	4	0.36
Projectors/ long life hardware	5	0.51
Weighted average	**4**	**28.17**

ElectraNet has assessed the economic or technical lives of the component assets based on past experience and in consultation with ElectraNet's IT service provider.

ElectraNet has also reviewed depreciation policies of other organisations available to it to assess the economic life for computers and computer related equipment. Tax ruling 2007/3 states that computers generally have an effective life of four years and laptops three years. Other assets such as printers and projectors range from five to ten years. In regards to software, SAP has a policy life of five years, Areva three years, and Microsoft four years. ElectraNet also notes that the Australian Competition and Consumer Commission's (ACCC) own policy on computer hardware has an asset life of three years, and computer software ranges between three and seven years[41].

[41] ACCC Annual Report 2005-06, p. 167.

ElectraNet has used a weighted average life methodology to determine an appropriate asset life for its computers, software and office machines asset class. Table 6.1 shows how the expected asset lives of the asset class components have been weighted with the forecast capex in the next regulatory control period to calculate a weighted average life of four years for the computers, software and office machines asset class.

ElectraNet considers that a four year weighted average life for this asset class is consistent with a reasonable expected economic life for these assets and is, therefore, consistent with the requirements of clause 6A.6.3(b) of the Rules.

ElectraNet submits a revised proposed standard asset life for the computers, software and office machines asset class of four years for inclusion in the AER's final determination.

6.3 Revised Depreciation Forecast

ElectraNet has forecast its depreciation schedules for the next regulatory control period based on the AER's methodology for rolling forward the opening asset base and forecast asset additions and disposals.

Asset class lives included in the opening asset base (as at 1 July 2008) have been calculated using a weighted average life. The PTRM has been used to calculate the depreciation forecast on a straight-line-basis. Clause S6A.1.3(7) of the Rules requires ElectraNet to provide depreciation schedules, which categorise the relevant assets by reference to well accepted categories. ElectraNet has provided depreciation schedules by asset class (e.g. transmission lines, substation primary plant etc.) in the Submission Guideline Templates – other information. Table 6.2 sets out the standard asset lives associated with ElectraNet's asset classes.

Table 6.2: Comparison of Asset Categories and Standard Lives

Asset Category	Draft Decision Asset Life	Revised Proposal Asset Life
Substation Primary	45	45
Substation Establishment	55	55
Substation Demountable Buildings	15	15
Substation Fences	35	35
Substation Secondary Systems – Electromechanical	27	27
Substation Secondary Systems – Electronic	15	15
Transmission Lines – Overhead	55	55
Transmission Lines – Underground	40	40
Network Switching Centres (e.g. SCADA)	5	5
Communication – Civil	55	55
Communication – Other	15	15
Commercial Buildings	30	30
Computers, Software and Office Machines	5	4
Office Furniture, Movable Plant and Miscellaneous	10	10
Easements	n/a	n/a
Land	n/a	n/a

Table 6.3 shows the change in straight-line depreciation from the AER draft decision.

Table 6.3: Forecast straight-line depreciation schedule ($m nominal)

	2008-09	2009-10	2010-11	2011-12	2012-13	Total
Draft decision	58.69	61.82	61.08	66.10	73.63	321.32
Revised Revenue Proposal	52.78	55.47	62.87	68.92	71.61	311.65

Changes in depreciation from the draft decision have resulted largely from:

- changes in the standard asset life for the computers, software and office machines asset class from five years to four years; and
- deferral in the commissioning dates of some ETC driven projects (refer to section 4.3).

For the purpose of estimating the cost of corporate income tax pursuant to Clause 6A.6.4 of the Rules, ElectraNet has calculated tax depreciation in accordance with tax law on a straight-line basis. Different asset lives apply for taxation purposes.

Table 6.4 shows the forecast tax depreciation schedule for the next regulatory control period, which has been used to calculate ElectraNet's allowance for corporate income tax.

Table 6.4: Forecast tax depreciation schedule ($m nominal)

	2008-09	2009-10	2010-11	2011-12	2012-13	Total
Draft decision straight-line tax depreciation	27.98	29.39	36.17	45.38	50.89	189.81
Revised revenue proposal tax depreciation	27.92	29.27	35.97	44.36	50.63	188.14

The AER's PTRM has been used to calculate both the regulatory and tax depreciation allowances. This approach is consistent with the requirements set out in Clause 6A.6.3 and S6A.1.3 of the Rules.

7. Cost of Capital

7.1 Summary

The return on capital is a significant component of ElectraNet's total revenue requirement and relatively small reductions in the rate of return can have a material and adverse impact on the business and its financial viability.

The importance of providing a stable return on investment has been recognised in formulating the cost of capital and taxation aspects of the Rules. In particular, the Rules provide greater certainty regarding the methodology and parameters that should be applied in determining the return on capital.

Chapter 9 of ElectraNet's Revenue Proposal (May 2007) sets out the methodology followed to determine the weighted average cost of capital (WACC).

In its draft decision, the AER has calculated a WACC based on market rates prevailing at the time of the draft decision. ElectraNet recognises that the risk free rate and debt risk premium will be updated for the AER's final determination using the averaging period requested by ElectraNet on a confidential basis.

Subject to these changes to be made in the final determination, ElectraNet has implemented all aspects of the AER's draft decision on WACC with the exception of the expected inflation rate. Even though the expected inflation rate does not have a material impact on the WACC itself, it does have a very significant impact on the allowed revenue calculated using the AER's PTRM. This issue is discussed in the following section.

7.2 Forecast Inflation

AER Draft Decision

The expected inflation rate is an inherent aspect of the nominal risk free rate and is also implicit in the nominal cost of debt.

The AER proposes in its Regulatory Principles to derive the expected inflation rate from the difference between nominal and indexed bond rates and has adopted this approach in previous regulatory decisions.

In its Revenue Proposal (May 2007), ElectraNet referred to the work undertaken by NERA that identified a downward bias in the yield from indexed bonds. This bias distorts the inflation forecast that is derived using the AER's inflation forecasting methodology. ElectraNet used the AER's methodology but included an adjustment recommended by NERA in an attempt to correct for the downward bias in the yield from indexed bonds.

The AER did not accept ElectraNet's methodology as an acceptable method of forecasting inflation. However, the AER did accept that there is evidence recognising that the current practice of deriving inflation forecasts from indexed Commonwealth Government Securities may not provide an appropriate benchmark for the real risk free rate.

In the absence of any other objective market based methodology, the AER has relied upon the Reserve Bank of Australia's (RBA) assessment of inflationary expectations. The AER stated in its draft decision:

> *"Where the RBA has a bias to tighten monetary policy, inflation will be taken to be at the top of the 2 to 3 percent inflation target range. Where the RBA has a bias to relax monetary policy, inflation expectations will be taken to be at the bottom of the range. Where the RBA has a neutral position, inflation will be taken to be at the mid-point."*[42]

The AER has referenced the RBA's recent statement on monetary policy, which includes a forecast of inflation over the short term above 3 per cent. As the RBA is currently in a tightening cycle of monetary policy, the AER considers the upper end of the RBA's inflation target range to provide the *"best inflation estimate at this time."*[43] As ElectraNet's forecast inflation rate of 2.97 per cent is in line with the top of the RBA's inflation target range, the AER accepted ElectraNet's 2.97 per cent rate in its draft decision.

ElectraNet's Response

ElectraNet does not accept the AER's revised methodology of forecasting expected inflation by adopting a rate of 2, 2.5 or 3 per cent within the RBA's inflationary target range. ElectraNet considers that this approach of setting a forecast at 0.5 per cent increments is unreasonably simplistic because it provides a limited and discrete consideration of the expected rate of inflation.

Such a limited forecasting approach is open to challenge because it is unorthodox and inconsistent with the Rules requirement for the AER to adopt a methodology that "*is likely to result in the best estimates of expected inflation*"[44]. The inflation rate forecast must be based on the best evidence and expertise available.

ElectraNet engaged Dr Tom Hird of the Competition Economics Group (CEG) to review and provide an expert opinion on the AER's methodology for determining a best estimate of inflation for calculating the real expected yield on nominal Commonwealth Government bonds with a maturity of 10 years[45].

Inflation forecast must be a 10-year forecast

The AER is required by the Rules to derive a real risk free rate[46] by starting with the observed yield on CGS with 10 years to maturity. 6A.6.2 (c) of the Rules states that:

> *"The nominal risk free rate for a regulatory control period is the rate determined for that regulatory control period by the AER on a moving average basis from the annualised yield on Commonwealth Government bonds with a maturity of 10 years..."*

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42 AER, Draft Decision, p. 132.

43 Ibid, p. 132.

44 Rule 6A.5.3(b).

45 CEG report, "A methodology for estimating expected inflation", January 2008 (included as Appendix A8).

46 The PTRM model effectively uses this real risk free rate (and other WACC parameters) to determine the real return on capital.

CEG state that the only correct measure of expected inflation that can be used in this context is expected inflation over the life of the 10 year nominal CGS bond from which the inflation estimate is being removed.

> *"Given we are starting with market participants' required nominal return over 10 years we must, consistently, attempt to estimate market participants' expected inflation over the same period.*
>
> *If this is not the case then an error will result. For example, if expected inflation over two years is used in the above equation then the calculated value will be meaningless. It will certainly not be an estimate of the expected real return on nominal CGS with ten years to maturity (unless, by coincidence, expected inflation over two years is equal to expected inflation over 10 years).*
>
> *Recognising this context, the only reasonable estimate of expected inflation is expected inflation over 10 years."* [47]

The AER's inflation forecast is not a 10-year forecast

CEG notes that the AER's methodology for determining expected inflation has no economic or financial basis and at best gives rise to a short term (one to two years) forecast of inflation.

CEG's report highlights that the AER's methodology fails to recognise the purpose of the RBA's shift in interest rates. If the RBA is raising interest rates, then it is reasonable to presume that inflation over the next one to two years will be towards the top of the RBA's band. However, what the AER's methodology fails to recognise is that by increasing interest rates the RBA is attempting to *reduce* inflationary pressures. If the RBA is successful in this policy (as it and other central banks have clearly been in modern history) then, in the medium term inflation can be expected to be less than 3.0 per cent. This cycle is reversed when inflation is decreasing, with the intent to *increase* inflationary pressure.

CEG's report indicates that using the AER's methodology would imply that every time the RBA changes its stance on monetary policy from a tightening phase to a loosening phase and vice versa, investors are changing their inflation forecast from 2 per cent to 3 per cent, the extremes of the RBA's target inflation range. The RBA changes its stance on monetary policy during a 10 year period many times depending upon economic data. It is unreasonable to take the view that investors similarly change their opinion of long term inflation forecasts at the same rate. The RBA does not wait for inflation to be at the extreme of the target range of 2 to 3 per cent before it changes its stance on monetary policy. As stated above, given that monetary policy increases and decreases over an economic cycle, then assuming several economic cycles during a 10 year period would result in an average 10 year forecast of approximately 2.5 per cent.

The conclusions to draw from this discussion are that the AER's methodology is not suitable for estimating expected inflation over 10 years and that it is reasonable to expect that an appropriate 10 year inflation forecast would be anchored around the centre of the RBA's target range (2.5 per cent).

[47] CEG report, pp. 3-4.

Best estimate of expected inflation over 10 years

CEG has reviewed a range of credible economic forecasts to estimate the expected inflation rate over 10 years. These forecasts range from short term to long term forecasts. Table 1 in CEG's report details the economic forecasts used in its analysis. CEG has used forecasts from a range of banks and economic forecasters. The banks use short term modelling and extrapolate out long term inflation in line with the mid point of the RBA's target range. Other economic forecasters employ a range of assumptions and proprietary modelling techniques in an attempt to model annual variations in inflation over the long-term. In CEG's opinion, the approaches taken by these two groups of forecasters are equally valid and arrive at similar longer term inflation forecasts.

On the basis of an analysis of all available forecasts, CEG recommends a best estimate of expected inflation over a 10 year period of 2.53 per cent. This forecast is shown to be in the middle of quite a narrow distribution of forecasts.

CEG notes that selecting an estimate of 2.53 per cent for expected inflation is also consistent with the written advice of both the RBA and the Commonwealth Treasury who have separately noted 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 yield less the centre of the inflation target band (i.e. the nominal yield less 2½ per cent)."*[48]
>
> *"The Australian Government's suspension of issuance of these inflation-linked bonds, as well as increased demand for this asset class, is likely to cause market-implied inflation estimates to exceed consensus forecasts of inflation over the medium term. We therefore recommend that the ACCC uses the mid-point of the RBA's target band for inflation (that is, 2.5 per cent per annum) as the best estimate of inflation. Since the independence of the Reserve Bank board in conducting monetary policy was formalized in 1996, annual inflation has averaged 2.5%."*[49]

ElectraNet notes that even if only the forecasts of economic forecasters are used the mean estimate of expected inflation over 10 years is 2.62 per cent.

Conclusion

ElectraNet has adopted a best estimate of expected inflation over 10 years of 2.53 per cent based on CEG's expert advice, which is set out in detail in Appendix A8. ElectraNet has applied this inflation in the AER's PTRM.

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48 Letter dated 9 August 2007 from Assistant RBA Governor, Mr Guy Debelle, to ACCC Executive General Manager Mr Joe Dimasi.

49 Letter dated 7 August 2007 from Treasury Executive Director, Mr Jim Murphy, to ACCC Executive General Manager Mr Joe Dimasi.

7.3 Revised Cost of Capital

ElectraNet considers that the AER should adopt a 10-year inflation forecast of 2.53 per cent in its final determination for the reasons set out in this chapter.

For the purposes of this revised Revenue Proposal, ElectraNet has used a post tax nominal vanilla WACC of 9.66 percent, the same as adopted by the AER in its draft decision. The key parameters and variables underlying the cost of capital calculation are summarised in Table 7.1 below.

Table 7.1: WACC parameters used for the purpose of this Revised Revenue Proposal

Parameter	AER Draft Decision	ElectraNet Revised Revenue Proposal
Risk-free rate (nominal)	6.25%	6.25%
Expected inflation rate	2.97%	2.53%
Debt risk premium	1.68%	1.68%
Market risk premium	6.00%	6.00%
Corporate tax rate	30.00%	30.00%
Proportion of equity funding	40.00%	40.00%
Proportion of debt funding	60.00%	60.00%
Value of imputation credits	0.5	0.5
Equity beta	1.0	1.0
Normal vanilla WACC	9.66%	9.66%

7.4 Taxation Allowance

Chapter 9 of ElectraNet's Revenue Proposal (May 2007) sets out the methodology followed to determine the tax allowance.

ElectraNet's revised tax allowance for the next regulatory control period is shown in Table 7.2. This tax allowance has been calculated using the AER's PTRM and the tax depreciation schedule summarised in section 6.3.

Table 7.2: Tax Allowance ($m nominal)

Tax Allowance	2008-09	2009-10	2010-11	2011-12	2012-13	Total
Tax payable	19.46	20.93	22.65	23.06	23.23	109.34
Less value of imputation credits	(9.73)	(10.47)	(11.32)	(11.53)	(11.62)	54.67
Net tax allowance	**9.73**	**10.47**	**11.32**	**11.53**	**11.62**	**54.67**
Draft decision net tax allowance	9.58	10.26	9.52	9.22	9.97	48.55

8. Service Target Performance Incentive Scheme

8.1 Summary

Chapter 10 of ElectraNet's Revenue Proposal (May 2007) sets out the proposed performance targets, caps, collars and weightings for each of the parameters that apply to it under the First Proposed Service Target Performance Incentive Scheme[50].

The proposed targets, caps and collars were based on the provisions of the scheme and developed in accordance with a methodology developed by consultants, SAHA International[51].

ElectraNet also proposed other aspects of the performance parameters including critical circuits, peak and non-peak periods for the availability parameters and the x and y thresholds for the loss of supply event frequency parameters.

In its draft decision, the AER made an assessment of ElectraNet's proposed parameter definitions and associated values for the next regulatory control period and:

(a) Rejected ElectraNet's proposed critical circuits for the circuit availability parameters and substituted a longer list which included 275kV transmission lines between Adelaide and Port Augusta (p. 191);

(b) Accepted ElectraNet's proposed peak hours definition of 8:00am to 8:00pm on weekdays (p. 191);

(c) Rejected ElectraNet's proposed x and y thresholds for the loss of supply event frequency parameters of 0.2 and 1.0 system minutes and substituted values of 0.05 and 0.2 system minutes (p. 191);

(d) Rejected ElectraNet's proposal to use a period of greater than five years for calculation of targets, caps and collars for the loss of supply event frequency and average outage duration parameters and substituted a five year period for these calculations (pp. 199-197, 200);

(e) Accepted ElectraNet's proposed target for the total circuit availability parameter and rejected the proposed targets for the critical circuit peak and non-peak parameters and substituted targets which take into account changes made to the list of critical circuits (p. 193);

(f) Accepted in principle ElectraNet's proposed adjustments for expected step increases in connection point demand, but rejected the specific adjustments proposed and substituted its own which were derived using a slightly more rigorous methodology for calculating the impact (p. 196);

(g) Rejected ElectraNet's proposal to exclude the impact of the significant increases in connection point demand expected from the expansion of Olympic Dam (p. 197);

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50 AER, "First Proposed Service Target Performance Incentive Scheme, Explanatory Statement and Issues Paper", January 2007.

51 SAHA International "Service Target Incentive Scheme Review", May 2007 (included as Appendix W in ElectraNet's Revenue Proposal (May 2007)).

(h) Rejected ElectraNet's proposed targets for the loss of supply event frequency and average outage duration parameters and substituted those proposed by SKM (pp. 196-197);

(i) Rejected the methodology proposed by ElectraNet for the calculation of caps and collars for the circuit availability and average outage duration parameters and substituted an alternative methodology proposed by SKM based on curve fitting and the use of a Weibull distribution (p. 200);

(j) Rejected the methodology proposed by ElectraNet for the calculation of caps and collars for the loss of supply event frequency parameter and substituted an alternative methodology proposed by SKM based on curve fitting and the use of a Chi squared distribution (p. 200); and

(k) Accepted ElectraNet's proposed parameter weightings (p. 201).

ElectraNet has implemented all aspects of the AER's draft decision in its revised Revenue Proposal with the exception of those related to the methodology for setting caps and collars for the loss of supply event frequency parameters.

ElectraNet's response addressing this matter raised in the AER's draft decision is included in the remainder of this chapter together with a revised service standards proposal for inclusion in the AER's final determination.

8.2 Caps and Collars for Loss of Supply Event Frequency Parameters

AER Draft Decision

The AER rejected the methodology proposed by ElectraNet for the calculation of caps and collars for the loss of supply event frequency parameters and substituted an alternative methodology proposed by SKM based on curve fitting and the use of a Chi squared distribution.

ElectraNet's Response

ElectraNet does not accept the AER's draft decision as reasonable and proposes an alternative methodology. The AER and SKM have failed to establish that the methodology proposed by ElectraNet for the calculation of caps and collars for the loss of supply event frequency parameter was unsound. It appears the rejection of the caps and collars is based solely on the rejection of the methodology used for the circuit availability and average outage duration parameters with no analysis of the merit of the different methodology proposed for this parameter.

ElectraNet's Revenue Proposal (May 2007) used a period of greater than 5 years for calculation of targets, caps and collars for the loss of supply event frequency parameter. This was required to achieve a statistically sound sample size for an inherently random parameter with a very small annual number of events.

ElectraNet does not consider that either the methodology adopted in its Revenue Proposal (May 2007) or the AER's alternative methodology are statistically sound when used with the smaller sample size proposed by the AER.

Therefore, ElectraNet proposes an alternative methodology for the calculation of caps and collars for the loss of supply frequency parameters consistent with that proposed

by PB acting for the AER in the recent SP AusNet draft decision[52] and accepted by the AER in that draft decision as a sound methodology.

> *"PB has recommended a sound and reasonable methodology to establish the caps and collars to determine the rate at which SP AusNet receives a reward or penalty. 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. The AER accepts PB's recommendations on the appropriate cap and collar values to be applied to SP AusNet's parameters."*[53]

This methodology sets the caps and collars to the nearest integer one standard deviation above and below the mean and is based on five years of performance data. ElectraNet notes that this varies from the PB proposal of two standard deviations from the mean for all but availability parameters[54]. Two standard deviations above and below the target appears to overstate the range of expected performance and unduly reduces the incentive for improvement required by the scheme. The annual performance data as adjusted by SKM and used to set the proposed caps and collars is summarised in Table 8.1.

Table 8.1: Annual performance loss of supply event frequency[55]

Loss of supply event frequency (no.)	2002	2003	2004	2005	2006	Mean	Standard Deviation
> 0.05 system minutes	11	5	11	7	7	8.2	2.68
> 0.2 system minutes	6	2	6	2	5	4.2	2.05

Applying the proposed methodology results in the caps and collars summarised in Table 8.2. Rounding to the nearest whole number is consistent with previous regulatory decisions including the SP AusNet draft decision:

> *In accordance with previous transmission determinations, the AER will round loss of supply targets to the nearest whole number.*[56]

Table 8.2: Calculation of loss of supply event frequency caps and collars

Loss of supply event frequency (no.)	Collar (un-rounded)	Collar (rounded)	Target	Cap (un-rounded)	Cap (rounded)
> 0.05 system minutes	10.88	11	8	5.52	6
> 0.2 system minutes	6.25	6	4	2.15	2

ElectraNet submits that caps and collars for the loss of supply event frequency parameters be set to the nearest integer one standard deviation above and below the mean.

52 AER Draft Decision, "SP AusNet transmission determination 2008-09 to 2013-14", 31 August 2007, p. 208.

53 Ibid, p. 208.

54 Ibid, p. 207.

55 Email from SKM's Jeff Butler, "Best fit curves using EasyFit.doc", 20 November 2007.

56 AER Draft Decision, "SP AusNet transmission determination 2008-09 to 2013-14", 31 August 2007, p. 206.

8.3 Revised Service Target Performance Incentive

This section presents ElectraNet's revised performance targets, caps, collars and weightings proposed to be applied to it during the next regulatory control period. As discussed earlier in this chapter, the only change from the AER's draft decision is the caps and collars for the loss of supply event frequency parameters.

Table 8.3 specifies the proposed values, weightings and other elements related to ElectraNet's service target performance incentive scheme parameters. Critical circuits are defined in Table 8.4. The revised loss of supply frequency parameters are illustrated in Figures 8.1 and 8.2.

Table 8.3: Proposed values, weightings and other scheme elements

Parameter	Collar	Target	Cap	Weighting
Circuit availability (%)				*MAR (%)*
Total transmission	99.10	99.47	99.63	0.3
Critical circuit peak[a]	98.52	99.24	99.51	0.2
Critical circuit non-peak	98.88	99.62	99.95	0
Loss of supply event frequency (no.)				*MAR (%)*
> 0.05 system minutes	11 [b]	8	6	0.1
> 0.2 system minutes	6 [b]	4	2	0.2
Average outage duration (minutes)				*MAR (%)*
Total	119	78	38	0.2

Notes: (a) Peak is defined as 8am to 8pm Monday to Friday and non-peak is all other times
(b) Amended from AER's draft decision

Table 8.4 Revised proposed critical circuits

Line no.	Voltage (kV)	Circuit name
1904	275	Para – Tailem Bend no.2
1910	275	Davenport – Brinkworth (east circuit)
1911	275	Brinkworth – Para (east circuit)
1918	275	Davenport – Para (west circuit)
1919	275	Davenport – Canowie
1926	275	Canowie – Robertstown
1920	275	Davenport – Robertstown no. 2
1921	275	Para – Tailem Bend no.1
1922	275	Tailem Bend – South East no. 1
1923	275	Tailem Bend – South East no. 2
1930	275	South East – Heywood no. 1
1931	275	South East – Heywood no. 2
1938	275	Robertstown – Cherry Gardens no. 1
1939	275	Robertstown – Cherry Gardens no. 1

Note: Some of these lines will be split because of capital works. The number of circuits (and the denominator in the availability calculation) will change as these splits occur.

Figure 8.1: Loss of Supply Event Frequency > 0.05 System Minutes parameter

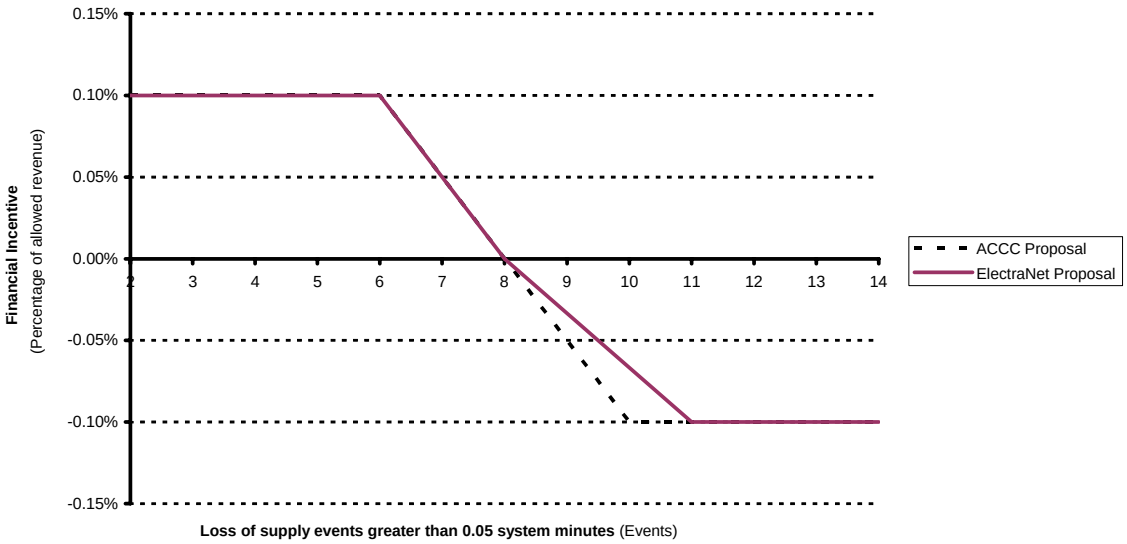
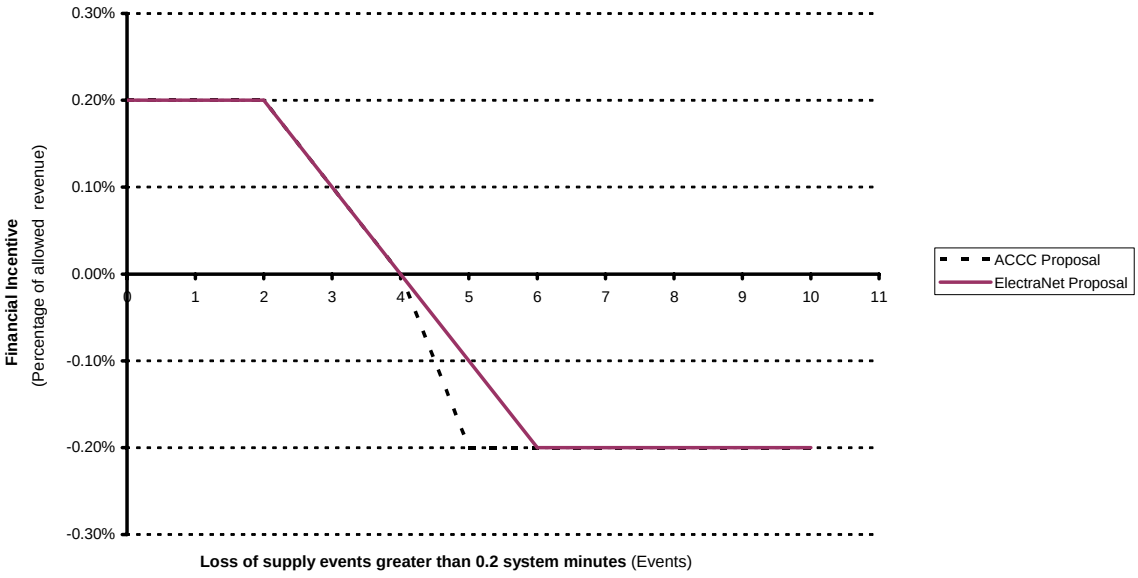


Figure 8.2: Loss of Supply Event Frequency > 0.2 System Minutes parameter



9. Maximum Allowed Revenue

9.1 Introduction

This chapter sets out ElectraNet's calculation of the maximum allowed revenue (MAR) for the provision of prescribed transmission services for each year of the next regulatory control period based on the post tax building block approach outlined in Chapter 6 of the Rules, the AER Guidelines and the PTRM. The revenue building block components included in ElectraNet's Revenue Proposal (May 2007) have been updated in line with this revised Revenue Proposal.

The building block formula to be applied in each year of the revenue control period is:

MAR = return on capital + return of capital + Opex + Tax

= (WACC x RAB) + D + Opex + Tax

where:

MAR = Maximum allowable revenue

WACC = post tax nominal weighted average cost of capital

RAB = Regulatory Asset Base

D = economic depreciation (nominal depreciation – indexation of the RAB)

Opex = operating and maintenance expenditure + efficiency glide path payments

Tax = regulated business corporate tax allowance

The annual building block revenue is then smoothed with an X factor in accordance with the requirements of clause 6A.6.8 of the Rules. A brief summary of each of the building blocks, the unsmoothed building block revenue requirement and smoothed revenue requirement is outlined in this chapter.

9.2 Regulatory Asset Base

The movements in the regulatory asset base over the 2008-09 to 2012-13 regulatory period are set out in Table 9.1. These reflect the revised capex forecast set out in chapter 4 and expected depreciation over the period set out in chapter 6.

Table 9.1: Asset Base Roll-Forward from 1 July 2008 to 30 June 2013 ($m nominal)

Regulatory Asset Base	2008-09	2009-10	2010-11	2011-12	2012-13
Opening RAB	1,277.48	1,397.38	1,572.63	1,720.76	1,892.07
Net capex	140.36	195.36	171.21	196.68	95.57
Inflation on opening RAB	32.32	35.35	39.79	43.54	47.87
Straight-line depreciation	(52.78)	(55.47)	(62.87)	(68.92)	(71.61)
Closing RAB	**1,397.38**	**1,572.63**	**1,720.76**	**1,892.07**	**1,963.89**

9.3 Return on Capital

The WACC is discussed in chapter 9 of ElectraNet's Revenue Proposal (May 2007). For the purposes of the revised Revenue Proposal, the return on capital has been calculated by applying the draft decision post tax nominal vanilla WACC of 9.66 per cent to the opening RAB consistent with the AER's post tax revenue model. This calculation is shown in Table 9.2 below.

Table 9.2: Return on Capital from 1 July 2008 to 30 June 2013 ($m nominal)

Return on Capital	2008-09	2009-10	2010-11	2011-12	2012-13
Asset value	1,277.48	1,397.38	1,572.63	1,720.76	1,892.07
Return on capital	123.38	134.96	151.88	166.19	182.74

9.4 Depreciation

The methodology for calculation of depreciation is discussed in chapter 7 of ElectraNet's Revenue Proposal (May 2007). The AER's post tax revenue model calculates regulatory depreciation by subtracting indexation of the opening asset base from straight-line depreciation for each regulatory year. A summary of the revised Revenue Proposal calculation is shown in Table 9.3 below.

Table 9.3: Depreciation from 1 July 2008 to 30 June 2013 ($m nominal)

Depreciation	2008-09	2009-10	2010-11	2011-12	2012-13
Straight-line depreciation	52.78	55.47	62.87	68.92	71.61
Inflation on opening RAB	(32.32)	(35.35)	(39.79)	(43.54)	(47.87)
Regulatory depreciation	20.46	20.11	23.08	25.38	23.74

Depreciation	2008-09	2009-10	2010-11	2011-12	2012-13
Tax depreciation	27.92	29.27	35.97	44.36	50.63

9.5 Operating and Maintenance Expenditure

The revised opex forecast is summarised in chapter 5 of this revised Revenue Proposal. The total opex is shown in Table 9.4.

Table 9.4: Operating expenditure from 1 July 2008 to 30 June 2013 ($m 2007-08)

Operating Expenditure	2008-09	2009-10	2010-11	2011-12	2012-13	Total
Controllable opex	50.40	52.03	53.95	56.29	57.61	270.27
Other opex	5.49	5.69	5.95	6.32	7.32	30.76
Total opex	**55.89**	**57.71**	**59.90**	**62.61**	**64.93**	**301.04**

9.6 Operating and maintenance expenditure efficiency allowance

The opex efficiency scheme that applies to ElectraNet in the current regulatory control period is explained in chapter 11 of ElectraNet's Revenue Proposal (May 2007). ElectraNet has updated its forecast 2007-08 opex in this revised Revenue Proposal. As a result, the opex efficiency payment becomes $10.7 million over the next regulatory control period. Tables 9.5 and 9.6 show how this amount is calculated.

Table 9.5: Calculation of annual efficiency savings ($m 2007-08)

	2003	2003-04	2004-05	2005-06	2006-07[a]	2007-08[a]	TOTAL
Opex allowance	26.66	53.43	53.31	53.88	54.45	54.79	296.51
Less network support	2.27	4.54	4.54	4.54	4.54	4.54	24.95
Less equity and debt raising costs	0.34	0.79	0.79	0.91	0.91	0.91	4.65
Adjusted allowance	**24.05**	**48.10**	**47.98**	**48.44**	**49.00**	**49.34**	**266.90**
Controllable opex	26.79	39.22	37.60	46.61	49.14	48.49	247.85
Total efficiency	**(2.74)**	**8.88**	**10.38**	**1.83**	**(0.14)**	**0.85**	**19.05**
Average opex efficiency savings							3.46

(a) Updated 2006-07 and 2007-08 controllable opex forecast

Table 9.6: Glide path of Controllable opex efficiencies ($m 2007-08)

	2008-09	2009-10	2010-11	2011-12	2012-13	TOTAL
Opex efficiency glide path	100%	80%	60%	40%	20%	
Opex efficiency payment	3.46	2.77	2.08	1.39	0.69	10.39

9.7 Tax allowance

The calculation of the corporate tax allowance is discussed in chapter 9 of ElectraNet's Revenue Proposal (May 2007). The revised tax allowance is shown in Table 9.7 below.

Table 9.7: Tax allowance from 1 July 2008 to 30 June 2013 ($m nominal)

Tax Allowance	2008-09	2009-10	2010-11	2011-12	2012-13
Tax payable	19.46	20.93	22.65	23.06	23.23
Less value of imputation credits	(9.73)	(10.47)	(11.32)	(11.53)	(11.62)
Net tax allowance	**9.73**	**10.47**	**11.32**	**11.53**	**11.62**

9.8 Maximum Allowed Revenue

ElectraNet has calculated its annual building block revenue requirement using the AER's PTRM, as the sum of return on capital, return of capital, operating and maintenance expenditure, efficiency carry-over and corporate tax allowance. The annual building block revenue requirement increases from $214 million in 2008-09 to $291 million in 2012-13. Table 9.8 shows the annual building block calculations.

Table 9.8: Revised Revenue Proposal annual building block revenue requirement ($m nominal)

Unsmoothed Revenue	2008-09	2009-10	2010-11	2011-12	2012-13	Total
Return on capital	123.38	134.96	151.88	166.19	182.74	759.15
Regulatory depreciation	20.46	20.11	23.08	25.38	23.74	112.78
Operating expenses	57.31	60.67	64.56	69.19	73.57	325.29
Opex efficiency payment	3.55	2.91	2.24	1.53	0.79	11.02
Net tax allowance	9.73	10.47	11.32	11.53	11.62	54.67
Unsmoothed revenue requirement	**214.43**	**229.12**	**253.09**	**273.82**	**292.45**	**1,262.91**

ElectraNet has determined a smoothed nominal expected MAR that increases from $214 million in 2008-09 to $292 million in 2012-13 using the same methodology that was used by the AER in its draft decision. The first year MAR is equal to the annual building block amount and a constant X factor has been applied thereafter.

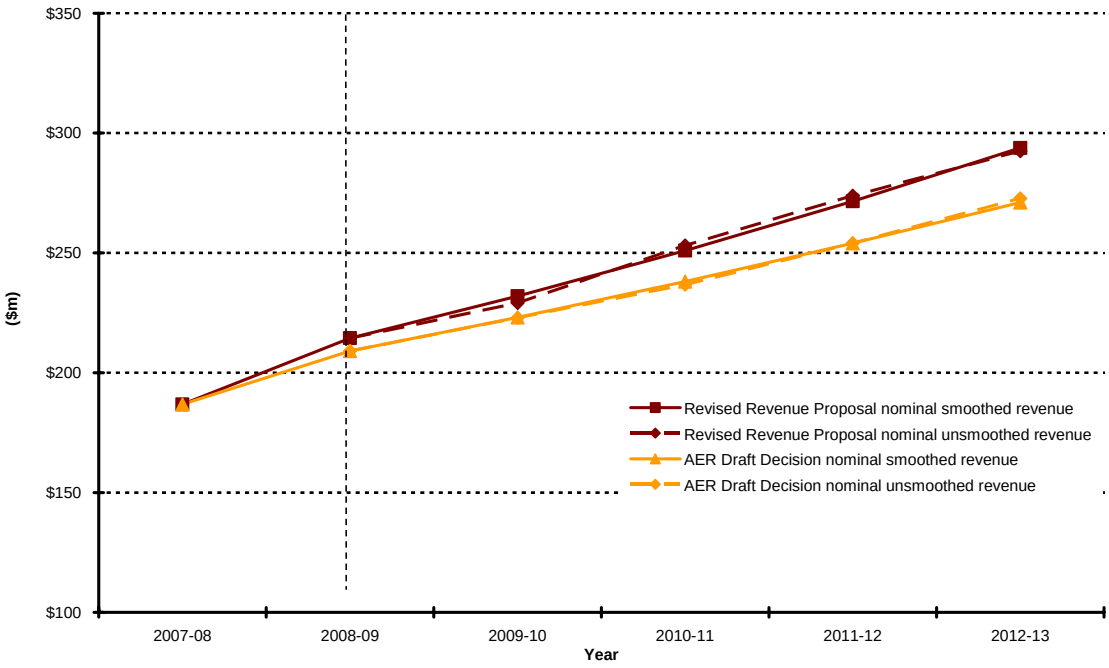
A comparison of the draft decision X factors and ElectraNet's revised X factors are presented in Table 9.9 below.

Table 9.9: Smoothed revenue requirement, 1 July 2008 to 30 June 2013 ($m nominal)

	2008-09	2009-10	2010-11	2011-12	2012-13	Total
AER Draft Decision						
MAR smoothed	208.81	222.88	237.89	253.91	271.02	1,194.52
X factor	-8.56%	-3.66%	-3.66%	-3.66%	-3.66%	-
Revised Proposal						
MAR unsmoothed	214.43	229.12	253.09	273.82	292.45	1,262.91
MAR smoothed	214.43	231.98	250.97	271.52	293.75	1,262.65
X factor	-11.95%	-5.52%	-5.52%	-5.52%	-5.52%	

The AER's PTRM has been used to calculate the X factors to ensure that the smoothed and unsmoothed revenue requirements are equal in NPV terms. Figure 9.1 shows ElectraNet's smoothed and unsmoothed revenue path in nominal terms compared to the AER's draft decision.

Figure 9.1: Revenue path ($m)



As noted in the AER's draft decision, the AER may adjust the MAR during the next regulatory control period for a number of reasons set out in the Rules, including for cost pass through events, reopening for capex to respond to unforseen circumstances, contingent projects and the service target performance incentive scheme applied to ElectraNet.

9.9 Average Transmission Prices

ElectraNet determines transmission prices and charges in accordance with its approved transmission pricing methodology and the Rules.

The effect of ElectraNet's revised Revenue Proposal on average transmission prices can be estimated by taking the maximum allowed revenues and dividing them by forecast energy delivered in South Australia. Based on this approach, ElectraNet estimates that its revised Revenue Proposal will result in an increase of about 7.7 per cent per annum (nominal) in average transmission charges over the regulatory control period[57].

Table 9.10 and Figure 9.2 show the average price path resulting from the revised Revenue Proposal over the next regulatory control period compared with the average price for the final year of the current regulatory control period (2007–08). Average transmission charges are estimated to increase from around $14.57 per MWh in 2007–08 to $21.05 per MWh in 2012–13.

57 Forecast energy figures are taken from ESIPC's Annual Planning Report June 2007, total customer sales .

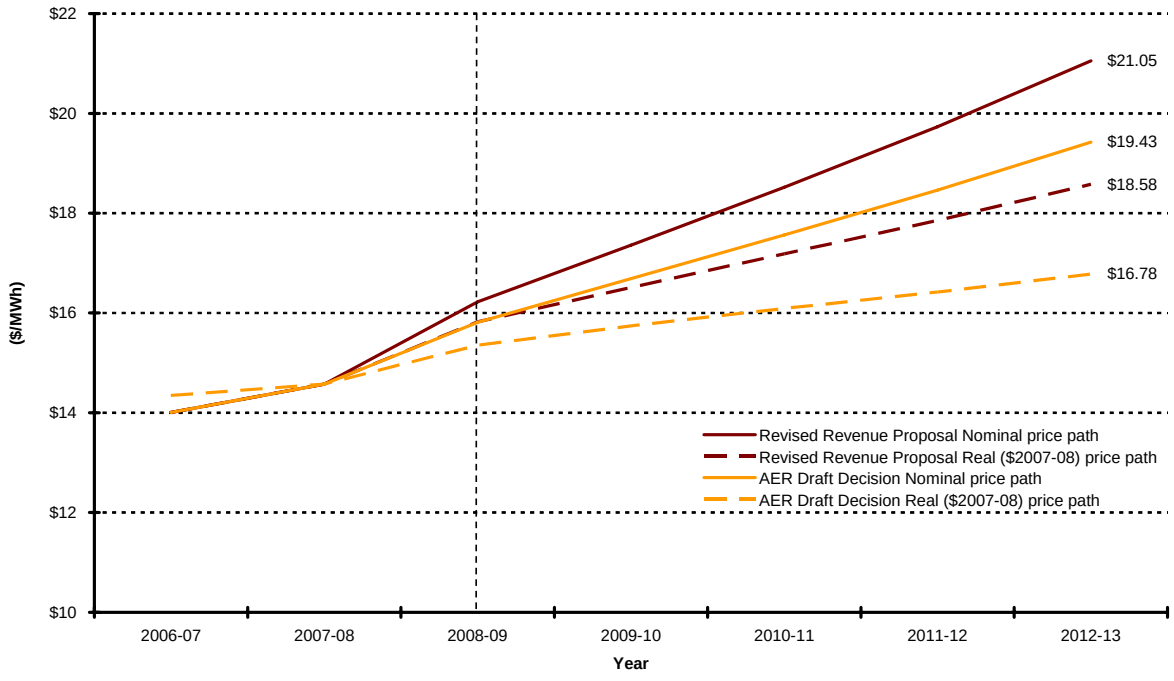
ElectraNet estimates that the 7.7 per cent per annum (nominal) average increase in transmission charges will add approximately $8.70 to the average residential customer's annual bill of $1,058 (0.8 per cent)[58].

ElectraNet notes that the principal reason for higher average increases in transmission charges compared to its Revenue Proposal (May 2007) is the higher WACC resulting from higher bond yields in the financial markets since ElectraNet submitted its revenue proposal.

Table 9.10: Average price path ($m nominal)

	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Smoothed revenue requirement	186.8	214.43	231.98	250.97	271.52	293.75
Energy (GWh)	12.8	13.2	13.4	13.6	13.8	14.0
Average transmission price ($/MWh)	14.6	16.2	17.4	18.5	19.7	21.1

Figure 9.2: Average price path ($/MWh)



58 Customer billing data from ESCOSA, "2005-06 Annual Performance Report - SA Energy Retail Market", November 2006, pp. 71-73.

10. Appendices

A1 Director's Responsibility Statement

A2 Transend's Use of Weather Stations to Support the Real-time Rating of Transmission Lines

A3 BIS Shrapnel report, "Outlook for Land Values in South Australia", January 2008

A4 CEG report, "Escalation Factors affecting capital expenditure forecasts", 18 January 2008

A5 Evans & Peck, "Risk Review of Capital Works Program – Supplementary Report", January 2008

A6 Revised Forecast Network Capital Projects

A7 Revised Proposed Contingent Projects

A8 CEG report, "A methodology for estimating expected inflation", 15 January 2008

A9 Breakdown of Network Capital Projects into Component Costs