Decision

Victorian Transmission Network Revenue Caps 2003-2008

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Contents

Glossary

AGSM	Australian Graduate School of Management
ASX	Australian Stock Exchange
AusCID	Australian Council for Infrastructure Development Limited
Capex	Capital Expenditure
CAPM	Capital Asset Pricing Model
COAG	Council of Australian Governments
Code	National Electricity Code
Commission	Australian Competition and Consumer Commission
CPI	Consumer Price Index
DAC	Depreciated Actual Cost
DCST	Double Circuit Steel Tower
draft *Regulatory Principles*	Draft Regulatory Principles (for the Regulation of Transmission Revenues)
EAG	Energy Action Group
EBDIT	Earnings Before Depreciation Interest and Taxes
ESAA	Electricity Supply Association of Australia
ESC	Essential Services Commission
EUAA	Energy Users Association of Australia
EUCV	Energy Users Coalition of Victoria
Gamma (g)	Likely Utilisation of Imputation Credits
Guidelines	Information Requirements Guidelines
ICTPS	International Comparison of Transmission Performance Studies
IPART	Independent Pricing and Regulatory Tribunal
ITOMS	International Transmission Operations & Maintenance Study
kV	Kilovolt
MAR	Maximum Allowed Revenue
MRP	Market Risk Premium
MVA	Mega Volt Ampere
MW	Mega Watt
NCC	National Competition Council
NECA	National Electricity Code Administrator
NEM	National Electricity Market
NEMMCO	National Electricity Market Management Company
NPV	Net Present Value
ODRC	Optimised Depreciated Replacement Cost
ODV	Optimised Deprival Value
OFGEM	Office of Gas and Electricity Markets
Opex	Operating and Maintenance Expenditure
ORC	Optimised Replacement Cost
PB Associates	Parsons Brinckerhoff Associates
QCA	Queensland Competition Authority
RAB	Regulated Asset Base
RBA	Reserve Bank of Australia
Regulatory Principles	Statement of Principles for the Regulation of Transmission Revenues
Reverse Capex	Past Capital Expenditure

SCST	Single Circuit Steel Tower
SECV	State Electricity Commission of Victoria
SKM	Sinclair Knight Merz Pty Ltd
SMHEA	Snowy Mountain Hydro-Electric Authority
SNNS	Specification and Negotiation of Network Services
SPI PowerNet	SPI PowerNet, a subsidiary of Singapore Power International
Tariff Order	Victorian Electricity Supply Industry Tariff Order
TNSP	Transmission Network Service Provider
TUoS	Transmission Use of System
urbis	urbis consulting property advisers
VAR	Voltage Amperes Reactive
VENCorp	Victorian Energy Networks Corporation
VNSC	Victorian Network Switching Centre
WACC	Weighted Average Cost of Capital
WDV	Written Down (Depreciated) Value

Executive Summary

Introduction

Under the provisions of clause 6.2 of the National Electricity Code (the code), the Australian Competition and Consumer Commission (the Commission) is responsible for determining the maximum allowed revenue (MAR) for the non-contestable electricity services provided by SPI PowerNet and VENCorp (Victorian Energy Networks Corporation).

As prescribed by the code, the revenue cap takes into account expected demand growth, service standards, weighted average cost of capital, potential efficiency gains, a fair and reasonable risk adjusted return on efficient investment and ongoing commercial viability for SPI PowerNet and VENCorp. It will be set for a period of five and quarter years, from 1 January 2003 to 31 March 2008 for SPI PowerNet and five and a half years, from 1 January 2003 to 30 June 2008 for VENCorp.

In setting the revenue cap the Commission has adopted an accrual building block approach. Under this approach, the allowed revenue consists of:

- a return on capital – that is the depreciated value of the regulatory asset base (RAB) multiplied by the post-tax nominal weighted-average cost of capital (WACC);
- a return of capital – depreciation allowance (to recoup the expired capital outlay); and
- an allowance for operating expenses and taxation.

The allowed revenue established for the first year will be increased by inflation (consumer price index – CPI). This CPI-X adjustment will be made year-on-year during the regulatory period.

The Commission issued a draft Statement of Principles for the Regulation of Transmission Revenues (draft *Regulatory Principles*) in May 1999. The draft *Regulatory Principles* sets out the Commission's regulatory framework.

Under the code, the Commission commenced regulation of the revenues of the Victorian transmission networks, SPI PowerNet and VENCorp, from 1 January 2001. The Commission's role is limited until 1 January 2003 to administering transmission-related functions under the Tariff Order. However, from that date, the Commission will become responsible for setting the revenue requirements of SPI PowerNet and VENCorp in accordance with the processes set out in the code.

The transmission arrangements in Victoria are unique in the national electricity market. SPI PowerNet owns and operates the transmission network and provides bulk transmission services to VENCorp under a network agreement. VENCorp is a not-for-profit organisation that owns no transmission assets itself. It provides shared network services to users and is responsible for planning and directing the augmentation of the shared network (which excludes the connection facilities utilised by generators and distribution bodies).

Process

On 11 April 2002, SPI PowerNet submitted its proposed MAR to the Commission for approval in respect of the non-contestable electricity transmission services provided by the company in the state of Victoria. The application was made under the relevant provisions of the code.

On 30 April 2002, VENCorp submitted its proposed revenue cap to the Commission for approval in respect of the costs that it expects to be recovered through Transmission Use of System (TUoS) charges over the regulatory control period. VENCorp's application proposed certain arrangements that preserve the key elements of the Victorian Electricity Supply Industry Tariff Order (Tariff Order), the regime under which it is currently regulated. On 15 October 2002, NECA lodged applications for authorisation of proposed amendments to the code. The proposed amendments relate to the regulation of transmission network services in Victoria from 1 January 2003. Victoria is seeking these derogations to ensure that the code provides adequate recognition of the not-for-profit status of VENCorp. The Commission is currently considering those applications and will issue a determination separately from this revenue cap decision.

The Commission engaged PB Associates to review the asset base, capital expenditure (capex) and operating and maintenance expenditure (opex) of SPI PowerNet. PB Associates were also engaged to review the opex of VENCorp. Submissions were received from a number of interested parties on the applications and PB Associates' reports. The MAR applications, consultant's reports, Draft Decision and submissions by interested parties have been placed on the Commission's website. This Final Decision should be read in conjunction with these documents.

SPI PowerNet Revenue Cap Application

Cost of capital

It is incumbent on the Commission, pursuant to clause 6.2.2(b)(2) of the code, to ensure that TNSPs are rewarded for efficient investment with a fair and reasonable rate of return. To achieve this objective, the Commission employs the capital asset pricing model (CAPM) and uses a post-tax revenue model. Clause 6.2.4(c)(3) of the code states that the Commission must have regard to the WACC of the transmission network.

In deciding upon the values that should be assigned to SPI PowerNet's cost of equity, the Commission has given careful consideration to the nature of the underlying business and the current financial circumstances. The Commission has adopted a nominal risk free interest rate of 5.12 per cent, calculated as the ten-day moving average of the five-year government bond, considered by the Commission to be the most appropriate proxy of the risk free interest rate over the five-year regulatory period. The Commission has arrived at a debt margin of 1.20 per cent above the nominal risk free interest rate, which results in a cost of debt of 6.32 per cent.

After reviewing market evidence and the advice of financial experts, the Commission has decided to employ a market risk premium of 6.00 per cent and an equity beta of 1.0. Furthermore, the Commission has adopted a corporate tax rate of 30 per cent and a franking credits utilisation ratio of 50 per cent.

Table I below provides a comparison of the cost of capital parameters employed by the Commission in this Final Decision with those detailed in its Draft Decision and in SPI PowerNet's application.

Table I Comparison of the cost of capital parameters

Parameter	SPI's proposal	Draft Decision	Final Decision
Nominal Risk Free Interest Rate (R_f) %	5.99%	5.31%	5.12%
Expected Inflation Rate (F) %	3.10%	2.26%	2.04%
Debt margin (over R_f) %	1.85%	1.20%	1.20%
Cost of debt $R_d = R_f$ + debt margin %	7.84%	6.51%	6.32%
Market Risk Premium (R_m-R_f) %	6.00%	6.00%	6.00%
Debt Funding (D/V) %	60%	60%	60%
Value of imputation credits γ	50%	50%	50%
Asset Beta β_a	0.585	0.40	0.40
Debt Beta	0.31	0.00	0.00
Equity Beta	1.0	1.00	1.00
Nominal Post Tax Return on Equity	11.99%	11.28%	11.09%
Nominal Vanilla WACC	9.50%	8.42%	8.23%

Opening asset base

Pursuant to clause 6.2.3(d)(4)(iii) of the code, in setting a revenue cap for the initial regulatory control period, the Commission is required to value sunk assets at the value determined by the jurisdictional regulator or consistent with the regulatory asset base established in the jurisdiction, provided that this value does not exceed deprival value.

In light of independent legal advice, the Commission is of the view that the principal constraint imposed by s 6.2.3(d)(4)(iii) is that where, in establishing the regulatory asset base in the jurisdiction, a judgment has been made on the treatment of a particular asset or class of assets, the Commission cannot substitute its own judgment for that which was exercised in establishing the regulatory asset base.

However, where no judgment has been made with respect to the treatment of assets, the Commission is of the view that it is consistent with the regulatory asset base established in the jurisdiction for it to include those assets in the asset base, provided that s 6.2.3(d)(4)(iii) of the code is otherwise satisfied.

Further, where a judgement was made to exclude assets from the regulatory asset base for a particular reason, the Commission is of the view that it is consistent with the regulatory asset base for it to now include such assets in the asset base if the circumstances which lead to the particular treatment of those assets by the jurisdiction have changed in such a way as to justify a different treatment by the Commission.

In accordance with the code, the Commission has rolled forward the jurisdictional valuation of 1 July 1994 to include asset additions, certain assets for which no provision was made in the jurisdictional valuation, deletions and depreciation and set an opening regulated asset base (RAB) as at 1 January 2003.

The Commission engaged PB Associates to undertake a review of SKM's valuation and assess the reasonableness of SPI PowerNet's proposed asset roll forward schedule. PB Associates concluded that SPI PowerNet had adopted a rigorous and detailed process to develop its RAB as at 1 January 2003.

Based on PB Associates' recommendations and the Commission's investigations, SPI PowerNet's opening asset has been adjusted by the following:

- the value of some assets for which no provision was made in the jurisdictional asset base was added to the roll forward 1994 SKM valuation to arrive at the opening base valuation as at 1 January 2001. The Commission considered it appropriate to include such assets on the basis that no judgment with respect to the valuation of these assets was made by the jurisdiction;

- one such asset class was 66kV transmission lines, for which SPI PowerNet proposed a valuation of $11.2 million. In its review, PB Associates stated that the ODRC valuation is approximately $7.3 million. The Commission accepted the reasoning behind PB Associates decision;

- another asset class was easements, for which no provision had been made in the SKM valuation due to a lack of information. For the easement valuation SPI PowerNet has used a hybrid method. Actual historical costs were indexed to 2001 and added to the transaction costs estimated in 1997 and escalated to 2001, which resulted in a value of $231.8 million. For the purposes of the Final Decision, the Commission considers it appropriate to include only the direct historical cost of easements of $88.91 million into the asset base; and

- finally, provision has been made in the asset base for re-optimised assets on the basis that these services are now in use. For re-optimised assets SPI PowerNet has proposed to value the assets entering the asset base at replacement cost of $249.6 million. PB Associates argued that SPI PowerNet's assets entering the asset base through re-optimisation should enter at depreciated replacement cost of $153.7 million.

The Commission has determined that the value to be attributed to SPI PowerNet's RAB as at 1 January 2003 is $1,835.60 million. The RAB determined for SPI PowerNet in the Draft Decision as at 1 January 2003 was $1,815.56 million. The main differences between the Draft and Final Decision in regard to the RAB are the inclusion of landowner's cost and changes in the indexation of the roll-forward of the opening asset base from 2001 to 2003.

Capital expenditure

SPI PowerNet has planned the introduction of new technology and integrated systems to replace existing, relatively old, discrete systems. SPI PowerNet applied for a total capex amount of $369.7 million. After a brief review of the types of major capital expenditure projects proposed during the regulatory period, PB Associates concluded that projects planned are justified and appropriate. The Commission has taken into account that SPI PowerNet's capex requirement is limited to the replacement or refurbishment of assets, and does not encompass network growth projections.

Accordingly, the Commission will allow capex, including a minor augmentation allowance, of $378.64 million (nominal) over the regulatory period as detailed below:

Table II SPI PowerNet capex: 1 Jan '03 to 31 Mar '08 (nominal $m, excl GST)

	Q1 2003	2004	2005	2006	2007	2008
Total capex	**17.61**	**72.96**	**68.34**	**57.62**	**79.72**	**82.39**

The Commission's Final Decision differs from its Draft Decision and SPI PowerNet's application due to the allowance made for minor augmentations, interest during construction and the escalation of the claim from 2001 to 2003.

Operating and maintenance expenditure

SPI PowerNet's application outlines opex totalling $402.7 million (nominal) for the period 1 January 2003 to 31 March 2008. SPI PowerNet submitted a variation to its forecast opex on 31 May 2002 as a result of updated cost allocation data based on its audited (statutory) accounts for the period 1 April 2001 to 30 March 2002.

Consequent to the review provided by PB Associates and the Commission's own analysis of matters, the Commission grants opex of $395.53 million (nominal), as follows:

Table III SPI PowerNet opex: 1 Jan '03 to 31 Mar '08 (nominal $m, excl GST)

	Q1 2003	2004	2005	2006	2007	2008
Total opex	**20.12**	**72.08**	**73.55**	**75.05**	**76.58**	**78.15**

The Commission's Final Decision differs from its Draft Decision and SPI PowerNet's application due to the allowance made for efficiency carry-over, equity raising costs, self-insurance and the escalation of the claim from 2001 to 2003.

Total revenue and CPI-X smoothing

Based on the various elements of the building block approach, the Commission propose a smoothed revenue allowance that increased from $68.75 for 1 January 2003 to 31 March 2003 to $271.23 million, $278.85 million, $286.70 million, $294.76 million and $303.05 million in the subsequent full years of the regulatory period (Table IV). Those figures incorporate revenue smoothing based on an X smoothing factor 0.77 per cent i.e., the MAR will increase by CPI *plus* 0.77 per cent in each year of the regulatory period.

Table IV SPI PowerNet's MAR to 2008 ($ nominal million, excluding GST)

	Financial years ending 31 March					
	2003[1]	**2004**	**2005**	**2006**	**2007**	**2008**
Return on capital	37.74	151.79	154.57	156.68	157.63	160.03
Return of capital	7.74	39.21	42.63	46.12	50.58	54.68
Operating expenses	20.12	72.08	73.55	75.05	76.58	78.15
Estimated taxes payable	6.28	16.29	17.17	18.02	18.82	19.81
Less value of franking credits	3.14	8.14	8.58	9.01	9.41	9.91
Unadjusted revenue	68.75	271.23	279.33	286.87	294.20	302.71
Smoothed MAR	**68.75**	**271.23**	**278.85**	**286.70**	**294.76**	**303.05**

[1] This is data for a three-month period, 1 January 2003 to 31 March 2003.

Differences between Draft Decision and Final Decision

There are five main differences between the draft and final decisions. The following items have been accounted for in this Final Decision:

- *The interest rate sampling period.* On the 13 November 2002, the Commission decided to reduce the interest rate-sampling period from 40-days to 10-days;
- *Debt and equity costs.* Following the GasNet decision, the Commission have made an allowance in SPI PowerNet's MAR to acknowledge benchmark costs relating to the raising of debt and equity finance;

- *Service standards*. On the 24 September 2002, the Commission released its Draft Decision regarding service standards. Details of those standards and how they will apply to the Victorian Electricity Transmission Network are incorporated in this decision;

- *Opex Efficiency Carry Over*. The Commission have incorporated an allowance in SPI PowerNet's MAR to recognise efficiency gains in past operating expenditure; and

- *Pass through rules*. Following the GasNet decision, the Commission have incorporated pass through rules in this decision.

In arriving at its Final Decision, the Commission notes that its proposed revenue cap is around 8.89 per cent lower than SPI PowerNet's proposed revenue cap. Table V below illustrates the comparisons between the Final Decision with the Draft Decision and SPI PowerNet's application.

Table V Comparison of Final Decision with Draft Decision and SPI PowerNet's Application (nominal $million, excluding GST)

	2003	2004	2005	2006	2007	2008
Opex – SPI	19.5	70.1	73.2	75.1	78.2	81.2
Opex – Draft	19.41	67.78	69.31	70.87	72.47	74.1
Opex – Final	20.12	72.08	73.55	75.05	76.58	78.15
Capex – SPI	16.8	69.9	66.1	56.2	78.6	82.1
Capex – Draft	15.3	68.58	63.79	54.31	75.95	82.29
Capex – Final	17.61	72.96	68.34	57.62	79.72	82.39
Return of Capital – SPI	18.4	79.7	83.6	86.3	89.4	92.8
Return of Capital - Draft	7.83	35.71	39.08	42.62	47.13	51.34
Return of Capital - Final	7.74	39.21	42.63	46.12	50.58	54.63
Return on Capital – SPI	49.8	203.2	208.5	212.9	217.8	223.8
Return on Capital - Draft	38.2	153.42	156.19	158.27	159.25	161.68
Return on Capital - Final	37.74	151.79	154.57	156.68	157.63	160.03
Smoothed MAR – SPI	75	299.8	308.8	314.7	321.6	329.8
Smoothed MAR - Draft	68.61	264.55	272.5	280.68	289.12	297.81
Smoothed MAR - Final	68.75	271.23	278.85	286.70	294.76	303.05

VENCorp Revenue Cap Application

VENCorp's revenue requirement is essentially comprised of:

- payments to SPI PowerNet for bulk transmission services (prescribed services);

- payments to SPI PowerNet and other network providers for services relating to augmentations; and

- opex costs.

Payments for augmentations are set under regulatory provisions (if non-contestable) or by competitive processes (if contestable). Therefore, only the opex costs are fully within the direct control of VENCorp. This represents about 2% of VENCorp's total charges.

Proposed revenue cap arrangements

In its application, VENCorp proposed arrangements that differed from other TNSPs currently regulated by the Commission. In essence, it submitted arrangements that preserved the key elements of the Victorian Tariff Order regime under which it is presently regulated. VENCorp pointed to clause 9.8.4 of the code as authorising these arrangements which recognised the not-for-profit nature of the organisation and allowed for annual adjustments of its TUoS charges for under and over-recoveries of charges from the previous year, and for new augmentations when commissioned.

VENCorp proposed to maintain these features under the revenue cap decision, such annual adjustments being subject to approval by the Commission in the case of under or over-recoveries, or subject to the regulatory test in the case of new augmentations.

Powerlink has commented that it wants equitable treatment for all TNSPs. It should be noted, however, that the code contains derogations in relation to the economic regulation of VENCorp. Clause 9.8.4 of the code operates to apply the Victorian transmission regulatory arrangements to the regulation of VENCorp's transmission revenues. These arrangements, as defined in clause 9.8.3(b), include the provisions of the Tariff Order.

Further, in the event of an inconsistency between Parts B and C of chapter 6 of the code and the Victorian transmission regulatory arrangements, the latter arrangements will prevail. The Commission notes that the Tariff Order currently provides for the annual adjustment of TUoS charges as submitted by VENCorp in its revenue cap application.

As a result of the interaction of clauses 9.8.3 and 9.8.4 and Part B of the code, VENCorp submitted particular revenue cap arrangements in its application which it believes will be more appropriate to its situation. The Commission noted PB Associates' conclusion that it is not clear what purpose is served by using the CPI-X model for a not-for-profit organisation such as VENCorp.

On 15 October 2002, NECA lodged applications for authorisation of proposed amendments to the Victorian transmission regulatory arrangements. The Commission is currently considering those proposed changes.

Network augmentation expenditure

The Commission notes that PB Associates found VENCorp's planning processes and expenditure to be appropriate, with planned augmentations satisfying the regulatory test (unless such projects are not yet at the detailed planning stage, in which case there is further detailed analysis still to be performed). PB Associates also found the load growth forecasting process to be reasonable and in accordance with industry best practice. Additionally, VENCorp's budgetary capital cost estimates used for planning projects appeared reasonable for the scope of works.

In its review, PB Associates examined the implementation of certain planning decisions and found the process followed was appropriate in the projects reviewed. The Commission is therefore, satisfied that VENCorp's forecast augmentation expenditure is appropriate and reasonable.

Network optimisation

VENCorp believes that it has a comprehensive risk mitigation process in place in respect of potential optimisation, bearing in mind that it does not own transmission assets itself. VENCorp further believes that optimisation should not apply as it is a not-for-profit body and projects must pass the regulatory test and review by its Board. PB Associates agrees the risk of asset stranding is low, especially in the short term.

The Commission acknowledges concerns from interested parties that optimisation risk should apply equally to all TNSPs. However, it is recognised that VENCorp is not the owner of the assets at risk. Rather, the risk it bears is in relation to any commitment to make payments under contractual agreements to asset owners where the asset has been optimised by the Commission out of that asset owner's regulatory asset base.

The Commission is presently considering how optimisation risk should apply to VENCorp, and intends to address this matter as part of its overall guidelines on the application of optimisation to TNSPs to be included in its finalised *Regulatory Principles*.

As the result of the analysis provided by PB Associates and the Commission's considerations, the Commission accepts the capex and opex claim made by VENCorp, but amends the forecast SPI PowerNet Prescribed Services charges as follows:

- SPI PowerNet's nominal dollar amounts, as calculated by the Commission, have been multiplied by 83% (VENCorp had proposed a figure of 86% as an estimate of how much of SPI PowerNet's total charges relate to the shared network. However, recent figures have averaged about 82.8% and little change in this allocation of charges is anticipated);

- This figure was then converted to 2002 real dollars, as quoted in VENCorp's application, employing the same inflation rate applied to SPI PowerNet; and

- An annual availability rebate of $6m payable by SPI PowerNet in defined circumstances was then deducted to arrive at the final charges (it was also necessary to adjust for the difference in financial years between the two organisations).

Forecast revenue requirement

Most of VENCorp's costs are regulated or set by competitive processes, with opex being its only directly controllable cost. The Commission notes PB Associates' finding that the $0.7m increase in opex over the regulatory period is considered appropriate. VENCorp's net opex is small, capped, and increases modestly over the regulatory period. A significant factor in the quantum of its net opex is the reduction of interest income from previous years.

VENCorp has provided the Commission with historical costs and forecasts for the regulatory period, and explanations for any increases. The Commission also notes that PB Associates is satisfied that VENCorp's planning processes are reasonable and robust and ensure that only necessary and efficient expenditure is included in forecasts.

The Commission concludes from these findings and its own analysis that the proposed opex and augmentation expenditure is appropriate. The Prescribed Services charges to be included in VENCorp's costs are as follows:

Table VI SPI PowerNet charges 2003 to 2007/08 (in 2002 $m, excluding GST)

	2003 (6 mths)	2003/04	2004/05	2005/06	2006/07	2007/08
Total revenue	**110.0**	**212.4**	**214.2**	**216.1**	**218.1**	**220.2**

These amended SPI PowerNet Prescribed Services charges have been added to VENCorp's opex and augmentation capex requirement. The Commission accordingly grants a total revenue requirement over the regulatory period as follows:

Table VII VENCorp revenue from 2003 to 2007/08 (in 2002 $m, excluding GST)

	2003 (6 mths)	2003/04	2004/05	2005/06	2006/07	2007/08
Total revenue	**118.8**	**232.3**	**237.8**	**244.4**	**249.3**	**253.0**

In summary, the revenue path detailed above encompasses a transition from the Tariff Order regime to regulation under the code which incorporates certain Victorian derogations. The effect of the derogations is to recognise the not-for-profit status of VENCorp and to preserve key elements of the Tariff Order regime in the determination of VENCorp's revenue requirement.

Victorian Transmission Network Service Standards

The service standards review is aimed at giving the incentive to TNSPs to operate the network in a fashion consistent with market outcomes. The performance incentive scheme decided upon by the Commission is based on the final report by SKM. The SKM report was placed on the Commission website 4 December 2002. The incentive scheme is detailed and complex.

SKM recommended to the Commission five basic indicators including total circuit availability, loss of supply event, average restoration time, minutes constrained (both inter and intra-regional). These indicators proxy the level of service provided. The specific performance indicators selected for SPI PowerNet and VENCorp relate to connection assets, performance targets based on historical performance, financial incentives, which are incorporated into the MAR.

Linking the level of service to financial incentives was done by selecting an appropriate percentage of the AR that SPI PowerNet can gain or forfeit depending on the performance it achieves. The Commission considers that a one per cent increase in the AR (per annum) would provide a large enough incentive for the TNSPs to maintain or improve their current level of service. Further, a one per cent decrease in the AR would strengthen the TNSP's incentive to avoid deterioration of their current level of service. The Commission considers that the potential loss of one per cent of its AR will not subject SPI PowerNet to extra material risk.

Increase in scope between the Code and the previous Tariff Order regime

In the transition from the present Victorian regime to regulation under the Code, the scope of SPI PowerNet's activities covered by the revenue cap will increase. This is due to the Code's "non-contestable" transmission services covering a wider range of activities than were previously covered under the Tariff Order's "prescribed services".

Therefore, while SPI PowerNet's total revenue from both "non-contestable" and "contestable" sources will stay the same (providing there are no other changes), its revenue cap will increase due to the broadening in the scope of its regulated activities.

This increase in scope is important to bear in mind in any comparison of revenue and expenditure between the two regimes.

The Impact of the Revenue Cap on Transmission prices in Victoria

On a $/MWh basis, the revenue cap as detailed in this decision will secure significant real price reductions over the term of the regulatory period. A year-on-year real reduction of approximately 1-3 per cent will be delivered over the next regulatory period.

1 Introduction

The code was developed out of a number of resolutions made by the Council of Australian Governments (COAG) concerning the large potential for efficiency gains to the Australian economy available from reform of the electricity industry.

The code provides the framework for the NEM, which establishes a single wholesale market across southern and eastern Australia and an access regime for the transmission and distribution networks in participating jurisdictions. The NEM commenced on 13 December 1998. The code also establishes a regulatory framework which:

- provides that the Commission will determine the revenue caps to be applied to the non-contestable elements of participating transmission networks; and
- sets out how those regulated revenues, combined with the networks' contestable revenues, will be translated into network charges.

In accordance with its responsibilities under the code, the Commission commenced regulating the revenues of transmission networks in the NEM on 1 July 1999, with the timetable outlining the date at which the Commission commences responsibility in each jurisdiction outlined below.

Table 1.1 NEM transmission network regulation timetable

Jurisdiction	Commission transmission regulation start date
Victoria	1 January 2003 [1]
South Australia	1 January 2003 [2]
Queensland	1 January 2002
Australian Capital Territory	1 July 1999
New South Wales	1 July 1999

1 The Commission commenced administration of the Victorian Tariff Order on 1 January 2001
2 The Commission commenced administration of the South Australian Electricity Pricing Order on 1 January 2001

This document sets out the Commission's decision in respect of the non-contestable elements of the Victorian transmission network, operated by SPI PowerNet and VENCorp. Commencing from 1 January 2003, SPI PowerNet's decision will apply for a period of five and quarter years, while VENCorp's will apply for a five and a half-year period.

The remainder of this chapter sets out:

- the regulatory framework according to which the Commission will determine the revenue caps to be applied to SPI PowerNet's transmission assets;

- the review and public consultation processes followed by the Commission in reaching its decisions; and
- an introductory overview of the Victorian transmission networks.

1.1 The Commission's role as regulator of transmission revenues

1.1.1 Scope of the regulatory review

The code outlines the general principles and objectives for the transmission revenue regulatory regime to be applied by the Commission (see Box 1 for further details). It also grants the Commission the flexibility to use alternative methodologies, providing they are consistent with code's 'objectives, principles, broad forms and mechanisms, and information disclosure requirements'.

For example, the code requires the Commission to set revenue caps for the non-contestable elements of SPI PowerNet's transmission assets. That is, to determine the maximum allowed revenue (MAR) which the owners of those assets can earn from the use of those non-contestable elements. However, if the Commission considers there is sufficient competition to warrant a more light handed regulatory approach, it may determine and apply such an approach.

Note that, to the extent that those assets also provide contestable services, the revenues associated with those services can be competitively sourced. Such revenues are, therefore, excluded from the revenue capping process and may be determined separately by SPI PowerNet.

Box 1: Objectives and principles of the transmission revenue regulatory regime

The code establishes that:

1. the transmission revenue regulatory regime must achieve outcomes which:
   - (a) are efficient and cost effective;
   - (b) are incentive based that share efficiency gains between network users and owners and provide a reasonable rate of return to network owners;
   - (c) foster efficient investment, operation, maintenance and use of network assets;
   - (d) recognise pre-existing government policies on asset values, revenue paths and prices;
   - (e) promote competition; and
   - (f) are reasonably accountable, transparent and consistent over time;
2. the regulation of aggregate revenue of transmission networks must:
   - (a) be consistent with the regulatory objectives (see 1 above);
   - (b) address monopoly pricing concerns, wherever possible, through the competitive supply of network services but otherwise through a revenue cap;
   - (c) promote efficiency gains and balance supply and demand side options;
   - (d) promote a reasonable rate of return to network owners on an efficient asset base where:
     - (i) the value of new assets is consistent with take-or-pay contracts or NEMMCO augmentation determinations;
     - (ii) the value of existing assets are determined by jurisdictional regulators and must not exceed their deprival value; and
     - (iii) any asset revaluations undertaken by the Commission are consistent with COAG decisions;
3. the form of the economic regulation shall:
   - (a) be a revenue cap with a CPI-X incentive mechanism;
   - (b) take into account expected demand growth, service standards, weighted average cost of capital, potential efficiency gains, a fair and reasonable risk adjusted return on efficient investment and ongoing commercial viability of the transmission industry;
   - (c) have a regulatory control period of not less than five years; and
   - (d) only apply to those assets not expected to be offered on a contestable basis.

Source: National Electricity Code, clauses 6.2.2 – 6.2.5.

1.1.2 Form of transmission revenue regulation

In assuming its role as the regulator of NEM transmission revenues, the Commission's aim is to adopt a regulatory process which eliminates monopoly pricing, provides a fair return to network owners and creates incentives for managers to pursue ongoing efficiency gains through cost reductions. In achieving these aims the Commission is aware of the need to ensure compliance costs are minimised and that the regulatory process is objective, transparent and as light handed as possible.

As this review is being undertaken, the Commission is working towards finalising its *Statement of the Principles for the Regulation of Transmission Revenues* (*Regulatory Principles*) which sets out how the Commission proposes to regulate transmission revenues. The draft *Regulatory Principles* was released in May 1999 and the Commission is continuing to consult on elements of that document. While the *Regulatory Principles* have yet to be finalised, this SPI PowerNet revenue cap decision encompasses the majority of the principles outlined in the draft *Regulatory Principles*. For example, the SPI PowerNet revenue cap has been determined according to the following principles:

- an accrual building block approach based on forecast costs of service;
- for the initial asset value, using the jurisdiction asset value, provided it is below the optimised deprival value (ODV) as part of an optimised deprival valuation assessment;
- networks are given the opportunity to identify assets subject to bypass risk — such assets may be subject to accelerated depreciation to compensate the network for that risk prior to their removal from the asset base;
- planned capital expenditures being subject to an *ex ante* prudency test and an *ex post* examination of the actual expenditure which has taken place;
- the rate of return on the asset base being determined using a post-tax nominal framework;
- the required efficiency regime will be of the CPI-X form;
- operating and maintenance expenditures will be subject to a single regulatory period glide path while other components of the building block will face a P_0 adjustment;
- the revenues determined will be 'sanity checked' through the use of financial indicator analysis; and
- each network will be required to provide a set of service standards for approval by the Commission - those standards will be included in the revenue cap decision and a penalty system will apply if the network fails to comply with those standards.

Consistent with the proposals contained in its draft *Regulatory Principles*, the Commission has adopted an accrual building block approach in the present revenue cap decisions. In implementing this framework, the 'post-tax nominal' accrual building block approach calculates the MAR as the sum of the return on capital, the

return of capital, an allowance for operating and maintenance (non-capital) expenditure and income tax payable; that is:

MAR = return on capital + return of capital + opex + taxes

= (WACC * WDV) + D + opex + taxes

where: WACC = post-tax nominal weighted average cost of capital;

WDV = written down (depreciated) value of the asset base;

D = depreciation allowance;

opex = operating and maintenance expenditure; and

taxes = tax liability allowance.

Furthermore, in implementing the CPI-X incentive mechanism the revenue cap will increase each year in line with inflation but decrease by a smoothing factor.

1.1.3 Structure of this document

The remainder of this document broadly follows the structure inherent in the methodology described above. That is, in relation to the SPI PowerNet decision:

- Chapter 2 concerns the network's weighted average cost of capital (WACC);
- Chapter 3 sets out the Commission's assessment of SPI PowerNet's RAB as at 1 January 2001;
- Chapter 4 determines the network's projected future capital expenditure requirements;
- Chapter 5 concerns operating and maintenance expenditure;
- Chapter 6 summarises the Commission's assessment of each element of the building block (including depreciation), applies the CPI-X incentive regime and discusses options for revenue smoothing to determine the final revenue path;
- Chapter 7 sets out the service standards appropriate to the level of the revenue cap determined; and
- Chapter 8 sets out the relevant financial indicator analysis conducted on the revenue cap determined.

Chapter 9 sets out the VENCorp revenue cap decision.

1.2 Review and public consultation processes

The key aspects of the review of SPI PowerNet's revenue cap which have occurred to date are as follows:

- *On the 11 April 2002, SPI PowerNet submitted its application for the Commission's consideration*: The application outlines its views on key elements of

the revenue cap decision. The application is also available on the Commission's website.

- *The Commission engaged a consultant to review a recent valuation of SPI PowerNet's asset base and its proposed capex, opex and service standards*: PB Associates was engaged to conduct these consultancies. Copies of the PB Associates reports are available on the Commission's website.

- *The Commission conducted a public consultation process (submissions closed on the 28 June 2002*: This involved the Commission inviting interested parties to provide comments on SPI PowerNet's application and PB Associates' reports. The Commission received five written submissions from interested parties.

- *The Commission conducted discussions with SPI PowerNet*: The information provided by SPI PowerNet subsequent to its submission is included in this Final Decision.

- *The Commission published the Draft Decision*: On 30 September 2002, the Commission published a Draft Decision setting out the Commission's proposed revenue cap for SPI PowerNet for the period from 1 January 2003 to 30 March 2008.

- *The Commission conducted a Public Forum* On the 14 November 2002 the Commission conducted a public forum where interested parties presented submissions regarding the draft decision.

Submissions on the draft decision closed on 31 October 2002. On the 14 October 2002, SPI PowerNet requested that the Commission conduct a public forum. The forum was held in Melbourne on the 14 November 2002. The Commission has taken into consideration issues raised by interested parties in submissions and at the public forum in this Final Decision.

1.3 Overview of the SPI PowerNet and VENCorp transmission network

1.3.1 SPI PowerNet

SPI PowerNet owns, operates and maintains over 6,500 kilometres of high voltage transmission lines, as well as 44 switching and transformation facilities throughout Victoria. SPI PowerNet's network spans 228,000 square kilometres throughout Victoria. Figure 1.1 illustrates the length of SPI PowerNet's network and highlights the major load centres in Victoria.

The network is built around a 500kV backbone running from the major generating source in the Latrobe Valley, through Melbourne and across the southern part of the state to Heywood, near the South Australian border. This backbone is designed to support the major load centres (Melbourne and the Portland aluminium smelter) and is surrounded by:

- A 220 kV ring around the Melbourne metropolitan area supplying 220kV/66 kV terminal stations;

- An inner and outer ring of 220 kV/66 kV terminal stations in country Victoria supplying the regional centres (the "State Grid"); and
- Three interconnections with NSW and one with South Australia.

SPI PowerNet services in excess of 1.8 million households and 280,000 businesses. In total, the transmission network is responsible for 53 million megawatt hours of energy annually.

SPI PowerNet's network supplied a maximum demand for electricity of 8,205 megawatts (MW) over the 2000/01-summer peak. The Victorian peak loading conditions occur during high temperature summer days and the transmission system capability is limited by reactive support following critical contingencies.

Figure 1.1: SPI PowerNet's transmission network

1.3.2 VENCorp

The Victorian Energy Networks Corporation (VENCorp) is wholly owned by the Victorian government and was established in 1997 under an act of Parliament. It is the monopoly provider of shared transmission network services in Victoria, acquiring bulk network services from SPI PowerNet and other service providers under network agreements. VENCorp is a not-for-profit organisation and does not own transmission assets itself. Under the Victorian Tariff Order regime, it operates on a full cost recovery but no operating surplus basis, recovering its costs through transmission use of system charges.

VENCorp also plans and directs the augmentation of the shared network. It adopts a ten year planning horizon to identify potential major transmission constraints in the Victorian network and develops options for alleviating those constraints. VENCorp's other roles include technical compliance monitoring of network participants.

The separation of the network asset owner (SPI PowerNet) from the investment decision-maker (VENCorp) is unique within the NEM.

2 The cost of capital

2.1 Introduction

Clause 6.2.2(b)(2) of the code requires that the Commission seek to achieve a fair and reasonable rate of return on efficient investment as one of the objectives of economic regulation. Further guidance is provided in Clause 6.2.4(c)(3) of the code in which it is stated that the Commission must have regard to the WACC of the transmission network. In addition, the Commission is to have regard to the risk adjusted cash flow rate of return required by investors in commercial enterprises facing similar business risks to the transmission network.

The importance of correctly assessing, and expressing, the return on capital is highlighted by the capital intensive nature of the electricity industry, illustrated by the *NSW and ACT*[1] and *Queensland Transmission Network (Powerlink)*[2] revenue cap decisions where the return on capital accounted for around two thirds of the MAR. Hence, relatively small changes to the cost of capital can have a significant impact on the total revenue requirement and, ultimately, end user prices.

The importance of the return on equity is that, if it is too low, the regulated network will be unable to recover the efficient (and fair) costs of service provision and perhaps, more importantly, may not have adequate incentive to augment facilities when appropriate. Conversely, if the return on equity is too high, this will affect business-input cost and the ability of firms to compete domestically and overseas, as well as a significant impact on down stream investment and allocative efficiency.

2.2 The capital asset pricing model

According to Clause 6.2.2 of the code, the revenue regulatory regime, to be administered by the Commission, must provide for a:

> a sustainable commercial revenue stream which includes a fair and reasonable rate of return to *Transmission Network Owners* and/or *Transmission Network Service Providers* (as appropriate) on efficient investment, given efficient operating and maintenance practices…

Schedule 6.1(2.2.2) of the code states that there are a variety of methods that can be applied to estimate this key return on equity (R_e) component. For example, prices to earnings ratios, dividend growth model and arbitrage pricing theory. However, in practice the capital asset pricing model (CAPM) remains the most widely accepted by regulators.

The CAPM calculates the required return given the opportunity cost of investing in the market, the market's own volatility and the systematic risk of holding equity in the

[1] ACCC, *decision – NSW and ACT Transmission Network Revenue Caps 1999/00-2003/04*, January 2000.

[2] ACCC, *decision – Queensland Transmission Network Revenue Cap 2002-2006/07*, November 2001.

particular company. The CAPM determines the rate of return from the perspective of the investor measured in cashflow terms. This includes the returns from year to year as well as the value to the investor accruing as the result of any net appreciation in the capital base.

The CAPM formula is:

$$R_e = R_f + \beta_e(R_m - R_f)$$

where: R_f = the risk free rate of return — usually based on government bond rates of an appropriate tenure;

(R_m-R_f) = the market risk premium (MRP) — the return of the market as a whole less the risk free rate; and

β_e = the relative systematic risk of the individual company's equity.

The CAPM expresses the rate of return as the post-tax nominal return on equity. This can be adjusted to allow for debt to derive the corresponding return on assets, otherwise known as the WACC.

Key parameters

The key parameters relevant to WACC/CAPM analysis are:

- the risk free interest rate (R_f);
- the expected rate of inflation (F);
- the cost of debt (R_d);
- the market risk premium (MRP);
- the likely utilisation of imputation credits (γ);
- the likely level of debt funding (D/V);
- the equity beta (β_e) of the company; and
- the statutory tax rate (T) from which effective tax rates on debt (T_d) and equity (T_e) can be derived for individual firms.

The Commission's assessments of each of these measures are discussed in turn.

2.2.1 Submissions on the Draft Decision

The Energy Users Coalition of Victoria (EUCV) in response to the Draft Decision stated that the WACC included in the Draft Decision is still well above the WACC granted by international regulators, operating in a similar risk and financial environment to that applying in Australia.

The Australian Council for Infrastructure Development Limited (AusCID) stated that its concerns focus on the need for a clear and stable regulatory environment that

reduces the perception of regulatory risk and creates incentives for long-term investment. The AusCID considered that the current approach by the Commission does not fulfil the above goals.

The AusCID noted that the Commission's Draft Decision only serves to increase perceptions that regulatory risk is real. The AusCID stated that the key concern is that there is an apparent lack of consistency in the Commission's approach with regards to the allowed WACC in its recent decisions. In addition, the AusCID noted that there is also considerable inconsistency between the approach adopted by the Commission and the Essential Services Commission (ESC) with regards to the allowed WACC in their respective regulatory decisions. These decisions differ in terms of:

- the term of the risk free rate;
- the credit rating on which the debt margin is based;
- the debt margin allowed;
- the allowance for debt raising costs (additional to the debt margin); and
- the allowance for equity raising costs.

The AusCID considered that the message that the Commission will send out to the infrastructure investment community is that there is a considerable lack of certainty with regards to the allowed WACC on their investment. In conclusion, the AusCID noted that this has obvious consequences for investment decisions by other companies who may be contemplating building new systems or expanding existing ones.

2.3 Estimate of the risk free interest rate

The risk-free rate (rf) is an important parameter which is used to determine both the cost of debt and the cost of equity. The risk-free rate measures the return an investor would expect from an asset with zero volatility and zero default risk. This rate of return can be approximated by the yield on long-term government bonds, which are viewed as risk-free assets since the government can honour all interest and debt repayments.

On this issue of the risk free interest rate, Statement 6.7 of the draft *Regulatory Principles* states:

> The risk free rate will be estimated from the (nominal) observable rate on five-year Commonwealth bonds.
>
> The risk free rate will be normally based on a 40 trading day moving average covering the eight weeks prior to the reset date unless there is evidence to suggest that the current rate of the day represents a transition to a new level which is expected to be maintained.

The Commission adopted the forty trading day average in *NSW and ACT*, and *Powerlink* revenue cap decisions.

2.3.1 SPI PowerNet proposal

SPI PowerNet proposed a ten-year bond rate of 5.99 per cent. Further, SPI PowerNet commissioned a report by Professor Bob Officer (Officer) that supported a ten year bond rate and a shorter interest rate sample.

2.3.2 Draft Decision

In the Draft Decision, the Commission proposed maintaining the current approach of linking the bond term with the length of the regulatory period and using a 40-day moving average for the interest rate sample. However, the Commission considered the appropriateness of possibly adopting a shorter interest rate sample. At the time of the Draft Decision, the five year, forty day moving average for bond rates provided a rate of 5.31 per cent.

2.3.3 Submissions on Draft Decision

SPI PowerNet

The term of the risk free rate

SPI PowerNet noted in response to the Draft Decision that there is a two-fold impact of choosing a shorter bond rate, as compared to the benchmark ten-year rate:

- first, it reduces the return on equity and the return on debt by approximately 25 basis points (this being the difference between 5 year and 10 year Commonwealth Government securities on average); and
- second, it reduces the return on debt still further, by reducing the debt margin (which is a function of the term assumed for the risk free rate) by approximately the same amount.

Taken together, SPI PowerNet noted that the impact of the Commission's Draft Decision on the risk free rate is to reduce the WACC by at least 40 basis points (note that the effect on the debt margin has only a 60 per cent effect on the WACC due to the gearing assumption).

Furthermore, SPI PowerNet stated that there are many well established reasons in favour of using a 10 year basis for the risk free rate:

- the long term nature of infrastructure investment;
- consistency with the estimation basis for the MRP; and
- greater reliability of estimates because the market in 10 year bonds is much deeper than for shorter term Commonwealth Government Securities.

SPI PowerNet noted that in the context of the revision of the Access Arrangements for GasNet, the Commission commissioned a paper by Associate Professor Martin Lally (Lally) entitled "determining the risk free rate for regulated companies". Lally's conclusion is that the risk free rate should indeed be chosen to align with the regulatory period. SPI PowerNet concluded that in the GasNet Draft Decision, the

Commission appears to have relied (solely) on Lally's paper for maintaining its use of a five-year bond rate.

In view of this, SPI PowerNet asked Officer to review and critique the Lally bond rate paper. Officer's critique was provided to the Commission as part of SPI PowerNet's response to the ElectraNet Draft Decision and is included at Appendix C together with Officer's updated paper entitled "A weighted average cost of capital for benchmark Australian Electricity Transmission Business" – the original version of this paper, dated 28 February 2002, was submitted as an appendix to SPI PowerNet's revenue cap application to the Commission.

Officer's finding is that: *"In short, all of Lally's examples for using a five year bond rate are equally applicable to using the changes in the ten year rate of each regulatory period and yet this rate is the rate consistent with the MRP and therefore consistent with the CAPM"*.

SPI PowerNet considered that Lally's conclusion and therefore the Commission's would only be correct if the regulator provided the utility with a capital guarantee. That is, if the utility was absolutely sure that its investment would be returned in full. SPI PowerNet stated that in reality, the Commission cannot make such a guarantee (certainly the framework provided by the Code in concert with the Trade Practices Act 1974 does not allow for it) and even if the Commission tried, it would not be credible in the context of the investment horizon of electricity transmission (up to 70 years).

Against this background, SPI PowerNet believed that the Commission's Draft Decision is based on an assumption (that there exists a capital guarantee) that could never hold. In conclusion, SPI PowerNet stated that the Lally analysis that the Commission is relying on has been shown by Officer to be empty, in so far as it actually provides as much support for the use of a 10 year rate as for a 5 year rate.

Sampling period of the risk free rate

In response to the Draft Decision, SPI PowerNet noted that the Commission has based its Draft Decision on a 40 trading day sample of the risk free rate. SPI PowerNet believed that this sample is too long having regard to both the theoretical and practical considerations. A 5 to 10 trading sample, with the timing to be notified in advance to the utility, would be more appropriate because it:

- is more tractable should the utility seek to hedge over the sample period – while not impossible, a 40 trading day sample is a lot more difficult to hedge, from an administrative viewpoint, than a shorter period such as 5 to 10 days; and

- does not unduly distort the information value of the sample, relative to the theoretical ideal of taking a one day sample.

In the current market, with both government and corporate bond yields subject to some volatility, SPI PowerNet's preference is for the sample to be set on the basis of 10 trading days.

Other parties

The EUCV in response to the Draft Decision stated that they concurred with the Commission that the risk free period should replicate the regulatory period. Further, the EUCV considered that the 5-year bond rate incorporates assessment of the expectations and risks, which are likely to occur over the regulatory period.

The EUCV stated that what is consistently overlooked is that competitive business returns are benchmarked on shorter periods than the five years (even though they have invested for much longer terms), and they have to seek funding and/or debt turnover in the same way as so regulated businesses.

2.3.4 Commission's considerations

Term of the risk free rate

The Commission notes that redemption yields on government bonds vary depending on the term of the security, meaning that it is important to specify a term when estimating the risk-free rate. There exists significant debate, however, over the term that should be used in regulatory decisions. The Commission sought advice from Dr Martin Lally on this and several other risk free rate related issues.[3] Lally's paper assesses the arguments proposed for not using the five year bond rate determining that these arguments are largely unfounded. He concludes that the five year bond rate is the appropriate bond term to consider when the regulatory period is five years.

The Commission considers that it is appropriate to maintain the use of interest rates that correspond with the length of the regulatory period. The adoption of this methodology should ensure that the expected regulatory return over the sequence of review will match the initial risk-free rate expected by the market over the life of the asset. This approach should provide SPI PowerNet with the right signals for investment at all times. However, the Commission is still open to this debate and has arranged per SPI PowerNet's request for Lally to respond to Officer's paper on the term of the bond rate.

Sampling period for the risk free rate

In relation to the measurement of the risk free rate, the Commission understands that it is theoretically correct to measure rates on the day immediately prior to the start of the regulatory period, as this rate does not include superseded news. However, in practice regulators (including the Commission) have often employed a moving average of bond yields to smooth out any possible market aberrations and to mitigate excessive borrowing costs. Furthermore, the Commission determines the risk-free rate a number of weeks prior to the start of the actual regulatory period given the constraints associated with the decision-making process. At this stage the Commission is considering the appropriateness of possibly adopting for all decisions a shorter sampling period for the moving average of yields. The Commission also proposes informing the service provider of the exact averaging period a number of months prior to the determination of regulated tariffs.

[3] Lally Martin, *Determining the risk free rate for regulated companies*, a paper for the ACCC, July 2002.

In regards to this present decision, the Commission agrees with SPI PowerNet that employing a 10-day sampling period has practical advantages. The Commission considers that since the final revenue cap decision will be released in mid December 2002, there are simply not enough trading days left in the year to apply an appropriate forward looking sample.

At the time of the Final Decision, the five year, ten day moving average for bond rates provided a rate of 5.12 per cent. It should be noted that the Commission welcomes further input regarding the most appropriate surrogate for a risk-free rate of return.

2.4 Expected inflation rate

While the expected inflation rate is not an explicit parameter in the return on equity calculation, it is an inherent aspect of the risk free rate and is also implicit in the cost of debt. There are two sources of information for determining inflationary expectations, financial markets and government estimates. The financial markets indicator of inflation is derived from the difference between the nominal and indexed bonds over a corresponding period. Alternatively, the Commonwealth Treasury releases inflationary forecasts based on internal modelling. Statement 6.11 of the draft *Regulatory Principles* states:

> The forecast inflation rate will be deduced from the difference in the nominal bond rate and inflation indexed bond rates, and will be deduced for the term corresponding to the duration of the regulatory period. Alternatively, official forecasts may be used.

The Commission adopted this approach in the *NSW and ACT and Powerlink* revenue cap decisions. However, the maturity dates on the nominal and indexed bonds rarely correspond, requiring realignment using either interpolation or extrapolation. The process of interpolation and extrapolation performs a mathematical line of best fit, estimating an indexed bond rate at a given point in time.

2.4.1 Commission considerations and conclusion

The Commission notes that the benefit of such an approach is that it delivers a forward looking estimate of inflation rather than a historic measure.

Consistent with the proposal in the draft *Regulatory Principles* and the method adopted in the *NSW and ACT and Powerlink* revenue cap decisions, and SPI PowerNet's application, the Commission will adopt the financial markets expectations of inflation. Using the extrapolated nominal and real bond rates, for this Final Decision, the Commission forecasts inflation of 2.04 per cent

2.5 Debt margin and the cost of debt

The cost of debt is the debt margin plus the risk free rate on commercial loans. The cost of debt factor varies depending on the entity's gearing, its credit rating and the term of the debt. The application of the cost of debt to the asset base using the assumed gearing will generate the interest costs for regulatory purposes.

Statement 6.10 of the draft *Regulatory Principles* states:

The Commission will estimate the cost of debt for a firm conforming to the financial structures implied by the regulatory accounts in consultation with relevant finance agencies.

2.5.1 SPI PowerNet's original proposal

Debt Margin

SPI PowerNet proposed a debt margin of 185 basis points above the nominal risk free rate of return. Officer noted that debt margins used in regulatory decisions are typically around 1 to 1.5 with an average of approximately 1.2. Officer argued that the significant difference between these decisions and the debt margin recommended for SPI PowerNet is due in large part to the implied assumptions made in the decisions about debt financing together with the state of the debt market at the time that market data was sampled. Although not always explicit, many decisions appear to have assumed that the relevant benchmark for debt financing is based on the term of the regulatory period. Officer pointed out that the long planning horizon for infrastructure necessitates using a long term financing basis (i.e. 10 year duration or greater).

Officer noted that underwriters of debt such as Westpac and UBS Warburg indicated that they believe that the ten year debt issued by the typical utility company would attract a BBB+ rating. Such debt is currently attracting a debt margin of approximately 185 basis points. Officer noted that adopting the debt margin of 185 basis points implies a beta of 0.31.

Debt Raising Costs

SPI PowerNet did not raise this issue of equity or debt raising costs in its application. As a consequence the Commission did not consider that it was an issue that was relevant to SPI PowerNet. In light of SPI PowerNet's request for capital raising costs the Commission will now consider it. In regard to equity raising costs see section 5.7.6.

2.5.2 Draft Decision

In the Draft Decision, the Commission assumed a benchmark credit rating of A for SPI PowerNet, which is the average credit rating for the electricity industry. Using relative market information from Standard and Poor's the Commission found that a firm with an A credit rating would have around a debt margin (dm) of 120 basis points[4], based upon a five year term.

The 120 point margin was added to the yield on a five year nominal risk free rate (rf) of 5.31 per cent which suggested a nominal cost of debt (rd) figure of 6.51 for use in the WACC estimate.

[4] The Draft Decision implicitly assumes the inclusion of bank costs in the debt margin for the purposes of the calculation of the debt beta.

2.5.3 Submissions on the Draft Decision

Credit rating

In response to the Draft Decision, SPI PowerNet stated that although the average across the electricity sample may be an A rating, this is not relevant in the context of trying to determine the benchmark credit rating for a privately owned stand-alone business.

SPI PowerNet considered that a stand-alone basis is important because this provides for complete capture of the relevant risks. If a business were instead owned by a conglomerate or a government then the risk faced by debt holders is generally perceived to be lower because it is assumed that the parent company, and more particularly the cash flows derived from their diversified holdings (or taxing power in the case of governments), will prevent or mitigate loan default. However, such risk does not disappear, it is simply transferred to equity holders and needs to be captured by reference to the stand-alone cost of debt finance.

SPI PowerNet concluded that if the Commission were to reconstitute its sample looking across privately owned stand alone network businesses the only businesses in the Commission's sample that are (reasonably) stand-alone in nature are ElectraNet (BBB+) and United Energy (A-). Further, SPI PowerNet stated that when combined with evidence of stand-alone network businesses in the gas industry Envestra, GasNet and AlintaGas rated BBB), there is ample support for adopting BBB+ as the benchmark credit rating for use in electricity transmission revenue caps.

Debt Margin

To aid the Commission in refreshing its data on the debt margin, SPI PowerNet stated that it would like to draw the Commission's attention to the following information on 10 year BBB+ debt margins:

- Westpac (14 October 2002) – 161 to 171 basis points;
- National Australia Bank (10 October 2002) – 184-189 basis points;
- ANZ (3 October 2002) – 190 basis points; and
- CBA Spectrum (16 October 2002) – 169 basis points.

Debt raising costs

SPI PowerNet noted that in its Draft Decision on GasNet, the Commission allowed for:

- debt raising costs of 8 basis points – this was based on estimates of bank fees of 5 basis points and swap costs of 3 basis points, which SPI PowerNet understood were both sourced from Westpac; and
- equity raising costs equivalent to 48 basis points on the value of equity, which were allowed for in the cash flows, separate to the CAPM estimate of the post-tax

nominal return on equity – this was based on a US study of capital raising costs by Lee et al, which was referred to in the GasNet's submission.

SPI PowerNet stated that given that the allowances for GasNet are benchmark costs, quite divorced from GasNet's actual financing activities, it could not see why the Commission has not been consistent and made such allowances in the ElectraNet and SPI PowerNet Draft Decisions.

SPI PowerNet noted that Westpac has updated its estimates of debt raising costs since providing this information to The Commission. Based on these updated estimates, SPI PowerNet requests the Commission to make an allowance for debt raising costs of 14 basis points in the Final Decision.

Although debt-raising costs have often been implicitly included in the cost of capital via the debt margin, SPI PowerNet noted that such costs should probably be included as a cash flow allowance. SPI PowerNet stated that this is because debt-raising costs are arguably unrelated to non-diversifiable risk.

2.5.4 Commission's considerations

Debt Margin

As noted in the draft *Regulatory Principles*, the Commission considers it appropriate to abstract from the actual cost of debt facing the service provider, as the actual cost of debt may not reflect efficient finance sourcing. Thus, the Commission is of the view that the cost of debt should be determined through reference to a benchmark debt margin, which is consistent with the other benchmarks adopted. The relationship between the cost of debt and the debt margin is illustrated in the formula:

$$rd = rf + dm$$

The calculation of the benchmark debt margin is essentially an empirical matter. Specifically, the calculation of the debt margin requires the Commission to consider two distinct empirical questions: the appropriate benchmark credit rating of the service provider; and the market observed debt margin associated with that benchmark rating.

With regard to the credit rating of a service provider, the Commission considers it appropriate to estimate a benchmark rather than use an actual credit rating given that the creditworthiness of the entity is in part under managerial control and the use of a benchmark is consistent with other assumptions. The Commission is of the view that relevant Australian electricity transmission and distribution companies should be used as the basis of a benchmark.

Table 2.1 below sets out the long-term credit rating for ten Australian electricity companies that have been assigned a credit rating from ratings agency Standard and Poor's.

Table 2.1 Credit rating associated with electricity companies

Company	Long-term rating
Country Energy	AA
ElectraNet	BBB+
ETSA Utilities	A-
Energy Australia	AA
Ergon Energy	AA+
Integral Energy	AA
SPI PowerNet	A+
United Energy	A-
Citipower Trust	A-
Powercor Australia	A-

Source: Standard and Poor's website (www.standardpoors.com.au), October 2002.

On the basis of this data, the average credit rating of these entities approximates to an average credit rating of A. The Commission has included both private and government entities in its sample in determining the average credit rating for the electricity industry. The Commission notes that Standard and Poors is less likely to upgrade the credit rating of a government entity as there is evidence in Australia of a reduction in government commitment and support for public sector enterprises.[5] Further, given that SPI PowerNet's owner Singapore Power is a government entity, the Commission considers that it is appropriate to include government entities in its sample in determining the average credit rating.

The Commission considers that using simply stand-alone and private entities provides to small a sample to obtain an average credit rating for the electricity industry. The Commission notes there could be a wide range of factors as to why the average credit rating for gas companies at BBB+ may be lower then electricity companies. In assessing the credit worthiness of Australian gas companies, Standard and Poor's consider a number of key sources. Specifically, they relate to regulatory risk, counter party risk and overall volumed of demand for gas.[6] Accordingly, the Commission considers that an A credit rating represents an appropriate proxy credit rating for the benchmark electricity company.

Having established a proxy credit rating, a benchmark debt margin can be determined. Debt is raised by asset owners either through bank markets or through the private and

[5] Standard and Poors website, (standardandpoors.com.au), November 2002.

[6] Ibid.

public capital markets. Debt requirements have primarily been met by bank market for projects involving construction in Australia.[7]

The Commission understands that the interest margin associated with bank issued debt is generally lower than capital market interest margins. However, information on the debt margin associated with bank issued debt is generally not widely available. The Commission therefore considers that it is reasonable to use capital market data as the benchmark, which is biased in favour of the service provider.

Table 2.2 below summaries the spreads above the Commonwealth government bond rate for publicly traded A corporate bonds as 12 November 2002. This spread represents the debt margin above government bonds in basis points terms. As the data illustrates, bonds with maturity in approximately five years are currently exhibiting a spread of between 81 to 118 basis points above government bonds.

Table 2.2 Australian corporate bonds issued

(A) company	Maturity	Spread above government bonds[a]
AGL	15 October 2007	89
AMP Shopping	15 September 2004	86
BAT	15 November 2006	111
BHP	15 August 2008	82
Transco	15 December 2008	118
Westfield	16 June 2007	81

Note: (a) Benchmark spread above Commonwealth Government Securities with matching maturity.

The Commission looked at additional information to approximate what the debt margin was from the Commonwealth Bank of Australia published by Standard and Poors. According, to the analysis, in the middle of December 2002 the spread over the government bond yields for A corporate bonds with a maturity of five years was 110 basis points.[8]

It is therefore reasonable to suggest that the debt margin for A bonds with maturity of five years is likely to be in the range of 81-121 basis points. In light of this evidence, the Commission considers that the proposal put forward by SPI PowerNet for a debt margin of 180 basis points based on a ten-year term, is an inappropriate estimate. The Commission therefore proposes adopting a debt margin of 120 basis points for SPI PowerNet, and will continue to monitor capital markets for further evidence that the debt margin for a benchmark A entity is increasing or decreasing. Further, the

[7] Macquarie Bank, *Issues for debt and equity providers in assessing greenfields gas pipelines,* Report for the ACCC, May 2002. p 7.

[8] CBA Specturm data cited at www.standardandpoors.com.au

Commission considers it appropriate to add a 10.5 basis points margin for prudent debt raising costs to the debt margin facing SPI PowerNet (see below). Thus, the effective debt margin used in the calculation of the WACC is 120 basis points.

Debt raising costs

To raise debt, a benchmark service provider has to pay debt financing costs over and above the debt margin. The Commission has undertaken research on the issues of debt raising transaction costs. This research has been based on the premise that, as with the calculation of the debt margin, the assessment of debt raising transaction costs is an empirical matter that should take into account current market costs. However, the Commission notes that this is a new area of analysis and will give further consideration to these issues in future regulatory decisions.

One cost that is incurred is the additional payment made to a bank or financial institution for the arrangement of debt.[9] The Commission considers that an allowance should be provided for a reasonable benchmark of debt financing arrangement and bank fees. The Commission acknowledges that these fees are likely to vary between each debt issue and also over time with market conditions. However, it is also recognised that a benchmark needs to be established in order to determine a reasonable allowance for revenue calculation.

Another cost that is often incurred is a dealer swap margin which is payable to the relevant financial institution.[10] The Commission considers that this is a valid cost given that debt providers traditionally provide their funding through a floating interest rate facility, but often require companies to enter into hedging arrangements to reduce the extent of interest rate risk.[11]

In addition to the above mentioned costs, a service provider may choose to engage in 'credit wrapping' when raising debt. Credit wrapping allows a service provider to raise debt based on a AAA credit rating for a fee payable to a credit monoline.[12] By undertaking such an arrangement, a service provider may improve on the benchmark cost of debt and keep the benefits achieved. The Commission does not consider that an allowance for credit wrapping should be provided to service providers. Regulated business are given a benchmark payment to compensate for the cost of debt, and if a company is of the view that it can outperform this benchmark, then the costs (and benefits) associated with pursing this strategy are the responsibility of the company.

The Commission contacted a number of industry analysts in order to assess the validity of debt raising costs and to acquire market estimates for these expenses. In particular, Westpac Institutional Bank provided the Commission with detailed information pertaining to the transaction costs associated with capital market raisings. According to Westpac, the cost categories such as arrangement, placement fees, dealer

9 Macquarie Bank, May 2002, p. 21.

10 ibid, p. 21.

11 ibid, pp. 16, 21.

12 ibid, p. 12.

swap margin, credit rating, agency and legal costs represent valid expenses incurred when raising debt. Westpac noted that while transaction costs are likely to vary between issues, on average a range of between 10.5 to 12.5 basis points represent current market establishment fees facing a benchmark service provider raising debt on capital markets.

Accordingly, the Commission considers 10.5 basis points may be more appropriate for a benchmark A rated electricity business given that such an entity is likely to pay at the lower end of the dealer swap margin range.

Following from above, the Commission considers that it is appropriate to provide a benchmark allowance for bank fees and dealer swap margin of a total of 10.5 basis points per year. The Commission proposes adding 10.5 basis points to the debt margin and thereby allowing the recovery of this cost through the WACC.

2.6 Betas

Systematic risk is accommodated in the CAPM framework by the equity beta (ße). This indicates the riskiness of one asset or project relative to the whole market (usually represented by the stock market). An equity beta greater than one indicates that the asset or project has returns that vary more than the market average. The risk cannot be eliminated through a well-balanced and diversified portfolio (unlike specific risk).

To compare the risk associated with a number of businesses independent of their financial structure (gearing), equity betas are 'de-levered' to produce asset betas (ßa). While there are a number of levering formulae, the Commission consistently applies the formula developed by Monkhouse:[13]

$$\beta e = \beta a + (\beta a - \beta d)\left[1 - \left(\frac{rd}{1+rd}\right)(1-g)Te\right]\frac{D}{E}$$

Just as the equity beta represents a measure of the systematic risk of a company relative to the market as a whole, the debt beta represents the extent to which the likelihood of the company defaulting on its debt obligations is correlated with movements in market returns.

A report prepared by Allen Consulting Group (ACG) for the Commission suggested an equity beta for Australian gas transmission companies of just below 0.7.[14] ACG also considered that the data for comparable businesses in the US, Canada and UK.

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[13] See ACCC, draft *Regulatory Principles*, pp. 79-81.

[14] ACG, *Empirical evidence on proxy beta values for regulated gas transmission activities*, Final report for the ACCC, July 2002, p. 46.

The result of 0.7 reflects calculations for the equity beta for Australian gas transmission businesses that result in a range of 0.66 to 0.69. The calculations assumed a debt: equity ratio of 60:40 and used data from AGL, Australian Pipeline Trust, Envestra and United Energy. Variables included excluding and including tax from the re-levering formula and a debt beta of either 0 or 0.15.

This data produced lower beta estimates and ACG concluded that this secondary information supports the view that Australian estimates are not understated. ACG stated:

> Exclusive reliance on the latest Australian market evidence would imply adopting a proxy equity beta (re-levered for the regulatory-standard gearing level) of 0.7 (rounded-up). Moreover, regard to evidence from North America or UK firms as a secondary source of information does not provide any rationale for believing that such a proxy beta would understate the beta risk of the regulated activities. Rather, the latest evidence from these markets would be more supportive of a view that the Australian estimates overstate the true betas for these activities.[15]

ACG recommended that a conservative approach to beta estimation be retained by Australian regulators with an equity beta estimate of one. ACG notes:

In the future, however, it should be possible for greater reliance to be placed upon market evidence when deriving a proxy beta for regulated Australian gas transmission activities.[16]

Further, the report by ACG indicated that the current appropriate asset beta for Australian gas transmission businesses maybe between 0.27 and 0.37.[17]

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ACG recommended that a conservative approach to beta estimation be retained by Australian regulators with an equity beta estimate of one. ACG notes:

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15 ibid., p. 42.

16 ibid, p 43.

17 ibid, p. 40.

18 ACG, *Empirical evidence on proxy beta values for regulated gas transmission activities*, Final report for the ACCC, July 2002, p. 46.

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Further, the report by ACG indicated that the current appropriate asset beta for Australian gas transmission businesses maybe between 0.27 and 0.37.[21]

2.6.1 SPI PowerNet's original proposal

SPI PowerNet proposed an asset beta of 0.585, combining the regulatory precedent of an equity beta of 1.0 with a debt beta of 0.31. Officer noted that adopting the debt margin suggested by underwriters of 185 basis points implies a debt beta of 0.31. Officer also suggested that it was difficult to find any conclusive evidence for a specific asset beta for electricity transmission companies.

2.6.2 Draft Decision

The Commission determined that the appropriate asset beta for the Draft Decision was 0.4 (with a corresponding equity beta of 1). The Commission's practice has been to benchmark the firm's equity beta relative to other companies or sectoral averages. The Commission has used in the past infrastructure and utilities group average on the Australian Stock Exchange (ASX).

In regard to the asset beta, the Commission understands that it is very difficult to find any conclusive evidence for a specific asset beta for electricity transmission networks. The Commission has taken the consistent line of using past regulatory decisions in coming up with the best asset beta estimate. From this information the Commission considers that an appropriate range for electricity distribution and transmission assets is between 0.35-0.50. Table 2.3 outlines the approach taken in recent regulatory decisions in relation to asset betas for electricity and gas.

[20] ibid, p 43.

[21] ibid, p. 40.

Table 2.3 Recent regulatory decisions on asset betas for electricity and gas

Matter	Industry	Asset beta
ESC, Price determination	Electricity Distribution	0.40
ACCC, Snowy Mountains	Electricity Transmission	0.40
ACCC, NSW & ACT	Electricity Transmission	0.35-0.50
ACCC, Queensland	Electricity Transmission	0.40
IPART, Elect, DB's	Electricity Distribution	0.35-0.50
QCA, Price Determination	Electricity Distribution	0.45

Further, the Commission used a debt beta of 0 for the Draft Decision and past electricity regulatory decisions. The Commission considered that there was no systematic default risk for a regulated entity with a guaranteed revenue stream. This conclusion was driven partly from the fact that debt raising costs had not been raised as an issue for the Commission's considerations.

2.6.3 Submissions on the Draft Decision

The EUCV noted that the Draft Decision calculates the equity beta (from an asset beta) and then compares the result for the "Infrastructure and Utilities", category of the ASX from a listing of equity betas provided by the Australian Graduate School of Management (AGSM) centre for research. Unfortunately, the EUCV noted that the ASX no longer provides this category having moved to the Standard and Poors GICS method of categorisation.

The EUCV pointed out that the GICS category for "Utilities" includes electricity generators, energy retailers, gas pipeline companies and two companies having electricity distribution assets. It also includes a number of small niche companies involved in new technology. There are few companies included in the classification, which have an effectively guaranteed cash flow, underwritten by electricity consumers.

The EUCV pointed out that for companies having stable cash flow (such as property, food, alcohol and tobacco) are more akin to the electricity transmission business. These cash flow stable companies have an equity beta at half that suggested appropriate for SPI PowerNet. The Pareto Associates analysis of UK regulatory decisions supports that an equity beta for PowerNet should be of a similar magnitude. In conclusion EUCV contended that rather than an equity beta of 1.0 being used for the SPI PowerNet WACC calculation, a figure of 0.5 is more appropriate and comparable to the business type.

2.6.4 Commission's considerations

The Commission notes that the equity beta estimate for the Draft Decision was 1. This suggests that the business experiences the same volatility as the market in general. This does not appear to be consistent with the frequently held view that gas and electricity utilities are less risky and more stable than the market average. Greater stability suggests that the equity beta should be less than one.

Further, the Commission refers to the ACG report that suggested that AGSM data implies an equity beta estimate of 0.7 for Australian gas transmission companies. However, for the reasons indicated by ACG in reference to the equity beta as noted above, the Commission considers that it may be premature to rely on market data exclusively when determining the equity beta. Accordingly, the Commission considers that an equity beta of 1, while biased in favour of the service provider is appropriate for SPI PowerNet at this time.

The Commission notes that the debt beta estimate for the Draft Decision was 0. The relationship between the debt margin ($(rd - rf)$) and the debt beta (βd) is illustrated from the formula:

$$\beta d = \frac{rd - rf}{MRP}$$

The Commission in the past considered that a regulated entity with a guaranteed revenue stream would have a low systematic default risk. However, now that debt raising costs are being considered explicitly on top of the debt margin, this implies a positive debt. With the current proposed values for the relevant parameters (the debt margin at 1.20 and the MRP at 6.0), the calculation results in a debt beta of 0.20. However, the Commission considers that it may be more appropriate to incorporate a positive debt beta in its future electricity regulatory decisions. Further, the ESC has recently undertaken work to provide further insight into the debt beta. It concluded that the debt beta is likely to be between 0 and 0.18 although a value toward the upper end of this range was more likely.[22] ACG also considered this information and suggested that an appropriate range for the debt beta would be between 0 and 0.15.[23] On balance, the Commission considers that an appropriate value for the debt beta for this Final Decision is 0. Further, the Commission notes that it has not seen any evidence to suggest that the asset beta should change from 0.4.

Accordingly, throughout the application of the Monkhouse formula noted above, the equity beta for SPI PowerNet will be 1.0 for this Final Decision. This represents the absolute upper limit of a possible range for the equity beta suggested by ACG analysis of available empirical evidence.

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[22] ESC, *Draft Decision: review of gas access arrangements*, July 2002, pp. 231-233.

[23] ACG, *Empirical evidence on proxy beta values for regulated gas transmission activities*, Final report for the ACCC, July 2002, pp. 28-29.

2.7 The market risk premium

The MRP is the premium above the risk free rate of return that investors expect to earn on a well diversified portfolio, namely:

$$MRP = R_m - R_f$$

Statement 6.8 of the draft *Regulatory Principles* states:

> The Commission will adopt what it perceives to be the accepted value of the market risk premium available at the time of the regulatory decision.

Under a classical tax system, conventional thinking suggests a value for the MRP of around 6.0 per cent. In a consultancy to the Commission, Kevin Davis derives figures based on a dividend growth model of between 4.5 per cent and 7.0 per cent with further indication that the MRP may be trending downward.

While the concept of the WACC and its application for determining regulated revenues is unambiguously forward looking, estimates of the future cost of equity are not readily available. Practical applications of the CAPM therefore rely on the analysis of historic returns to equity to estimate the MRP.

In recent revenue cap decisions such as *NSW and ACT*, *Powerlink* and *SPI PowerNet's Draft Decision* the Commission has adopted a MRP of 6.00 percent. SPI PowerNet proposed a MRP of 6.00 percent consistent with the Commission's regulatory decisions.

2.7.1 Submissions on Draft Decision

The EUCV noted that regulated businesses have consistently argued that an equity risk premium of 6.0 is on the low side of appropriate. However, many of the consultants commissioned to evaluate the MRP have been advising the regulated businesses, and there has been a lack of clear independence.

The EUCV pointed out that the ESC of Victoria commissioned an independent report on the market risk premium from Mercer Consulting. Their analysis indicates that the MRP is certainly lower than 6.0 and could well be 3.0, replicating the historical differential between the bond rate and the ASX index. Further, the EUCV pointed out that the consistency of the empirical data of ASX versus the bond rate and the observations of Mercer are replicated by observations of an MRP of 3 per cent used in overseas jurisdictions.

2.7.2 Commission's considerations and conclusion

The Commission recognises that the market risk premium has fallen over recent years, however the Commission is wary that this may reflect short term market trends. The Commission's assessment of the MRP suggested that it lies between 5.0 per cent and 7.0 per cent, and for the purposes of this Final Decision, the Commission chose the mid point of this range, i.e. a MRP of 6.0 per cent.

The Commission maintains that the current MRP of 6.0 per cent is on the high side and therefore sufficient to compensate for the difference between the five and ten year bond yields. This figure is consistent with recent Commission decisions.

The Commission notes a Jardine Fleming Capital Partners survey of professional market participants' MRP expectations, which found that on average these participants thought the historic MRP for Australia, was 5.87 per cent. The survey also found the expectation for the future MRP is approximately 1.0 per cent below this figure. However, the Commission acknowledges that these expectations reflect a significant amount of uncertainty. If in the longer term, the Commission is satisfied that the MRP is trending downwards, it will adopt a lower MRP as appropriate.

2.8 Value of franking credits (dividend imputation factor)

As stated in the code, under an imputation tax system, a proportion of the tax paid at the company level is, in effect, personal tax withheld at the company level. Australia has a full imputation tax system.

The rate of utilisation of tax credits;γ (gamma) has a significant effect on the WACC. The analysis of imputation credits and its impact on assessed costs of capital in Australia is a developing field and some issues remain contentious.

However, there is little empirical doubt that franking credits do have some value. As stated in Schedule 6.1(5.2) of the code:

> As the ultimate owners of government business enterprises, taxpayers would value their equity on exactly the same basis as they would value an investment in any other corporate tax paying entity. On this basis, it would be reasonable to assume the average franking credit value (of 50 per cent[24]) in the calculation of the network owner's pre tax WACC.

There is considerable debate as to the precise value of franking credits. As with other inputs to the WACC and CAPM equations, selection of a value for this particular parameter is ultimately a matter of judgement having regard to the available empirical evidence.

2.8.1 Draft Decision

In the Draft Decision the Commission has continued to value franking credits at 50 per cent (gamma of 0.5), consistent with its previous decisions and those of other Australian regulators. However, the Commission also contented that "gamma should be at or close to one for most companies rather than the currently employed figure of 0.5".

2.8.2 Submissions on the Draft Decision

SPI PowerNet noted that it does not believe that the reasons cited by the Commission in support of an estimate closer to one is persuasive. In particular,

[24] A study conducted by the Melbourne University Graduate School of Management, which found that franking credits are, on average, valued by equity investors at approximately 50 cents in the dollar.

- the latest studies of dividend imputation show a figure of 0.5 (refer to Officer's updated paper at Appendix C)
- official tax statistics indicate a figure of 0.5;
- in reality few businesses pay out all of their profits as dividends; and
- franking credits are a wasting asset, so it is very unlikely that gamma would ever be at or even close to one.

In the context of the GasNet draft decision, the Commission commissioned Associate Professor Martin Lally to write a paper entitled 'The cost of capital under dividend imputation". Lally concluded in this paper that if the Commission is to continue to use the domestic version of the CAPM then it should adopt a gamma of one.

SPI PowerNet asked Professor Bob Officer to critique this paper by Lally and his findings, which were provided to the Commission. Officer concluded that compromise is required and that the current approach of using the domestic version of the CAPM together with a cash flow tax allowance reduced by the average rate of utilisation of franking credits (0.5) is a pragmatic means of approximating the actual situation.

2.8.3 Commission's considerations and conclusion

The Commission's regulatory regime attempts to ensure that the return on capital allowance in the revenue cap is equivalent, and only equivalent, to the risk adjusted market rate of return required to maintain investment.

On 30 June 2000 the legislation pertaining to taxation was modified to accommodate the Ralph review recommendations on franking credits. The alteration to the tax law ensures that resident individuals receive the full benefit of franked dividends regardless of their tax position. Previously resident individuals whose taxable income was not sufficient to generate tax expenses sufficient to utilise the franking rebates lost that benefit.

A number of questions have been raised due to the recent tax reforms. First, to what extent if any should foreign investors be recognised. Second, what is an appropriate adjustment to the company tax rate to reflect the benefits of imputation? This adjustment reflects both the utilisation rates for imputation credits and the ratio of credits assigned to company tax paid.

The Commission has concluded on the following in regards to the utilisation of tax credits. First, regarding the issue of recognising foreign investors continued use of a version of the CAPM assumes the national equity markets are segmented rather than integrated. It follows that foreign investors must be completely disregarded and hence the model would recognise that investors would be able to fully utilise imputation credits.

Second, the Commission considers regarding the appropriate adjustment to the company tax rate to reflect the benefits of imputation, the utilisation rate for imputation credits should be set at one, and this follows from the first point above. In addition the ratio of imputation credits assigned to company tax paid should be set at

the relevant industry average, which appears to be at or close to one for most industries. These two recommendations imply that the product of the utilisation rate and the ratio of imputation credits assigned to company tax paid (denoted by gamma) should be at or close to 1 for most companies rather than the currently employed figure of 0.50. The effect of this change would be to reduce the allowed output prices of regulated firms.

A consensus view has yet to be reached amongst Australian academics and practitioners for making an adjustment to the rate of utilisation of tax credits. Therefore, the Commission considers that it is inappropriate for it to lead in this area. Hence, a gamma of 0.5 will be used in this decision.

2.9 Gearing

A benchmark-gearing ratio needs to be established for SPI PowerNet to identify the appropriate weighted average cost of debt and equity in the WACC.

The code (Schedule 6.1, 5.5.1) states that:

> gearing should not affect a government trading enterprise's target rate of return…. For practical ranges of capital structure (say less than 80 per cent debt), the required rate of return on total assets for a government trading enterprise should not be affected by changing debt to equity ratios.

SPI PowerNet proposed a gearing ratio of 60 per cent debt to equity for its business.

In the *NSW and ACT and Powerlink* revenue cap decisions *and SPI PowerNet's Draft Decision* revenue cap decisions the Commission adopted a gearing ratio of 60 percent based on industry wide benchmarking.

2.9.1 Commission's considerations

The capital structure can have a significant bearing on, not only the debt margin, but also the required return on equity although within "reasonable" bounds it is unlikely to affect the asset cost of capital or the WACC. The greater the level of gearing, the greater the risk of both debt and equity, however, over reasonable ranges, the risk of the total assets does not change. This is because the change in the weighting of capital from equity to debt maintains a constant risk level for the assets as a whole even though the beta measures of both debt and equity will increase.

Table 2.4 below indicates the typical capital structure assumed by regulators has been 60 per cent debt as a proportion of total assets. In theory, within the range of 40 per cent to 70 per cent the asset cost of capital should be stable. The Commission considers that in the circumstances, it would appear that a leverage of between 50 per cent and 60 per cent is a reasonable benchmark. Given that most regulators have adopted a gearing of 60 per cent, which is consistent with this benchmark, there is little compelling reason to vary from this assumption.

Table 2.4 Gearing levels adopted in regulatory decisions

Entity	Industry	Debt/Debt+Equity (per cent)
QCA(2001)	Electricity distribution	60
ESC (2000a)	Electricity distribution	60
ACCC (2000a)	Electricity transmission	60
IPART (1999c)	Electricity distribution	60
IPART (1999d)	Electricity distribution	60
OFGEM (1999)	Electricity distribution (UK)	50
ACCC/ESC (1998)	Gas transmission	60
IPART (1999b)	Gas distribution	60
ESC (1998b)	Gas distribution	60

Therefore, the Commission will adopt in the ordinary course of its regulatory decision making process a benchmark-gearing ratio of 60 per cent. However, if the service provider considers there is sound justification for departing from the benchmarked gearing approach, the Commission is receptive to considering such proposals. In this case, the Commission notes that SPI PowerNet recommended a gearing ratio of 60 per cent.

2.10 Treatment of taxation

In recent decisions, the Commission applied the existing statutory company tax rate of 30 per cent. This was within the context of difficulties in determining a satisfactorily accurate long-term effective tax rate as part of the pre-tax real framework being used at the time. The capital-intensive nature of electricity utilities has historically meant that the effective tax rate for such networks has been less than the statutory tax rate[25]. As noted above, the Commission considers that moving to the post-tax nominal framework which uses that effective tax rate has the potential to generate more appropriate and cost-reflective revenue cap outcomes.

The effective tax rate is defined as difference between pre-tax and post-tax rates of return. It is sensitive to a number of factors, which include the corporate tax rate and the range of available tax concessions that serve to lessen tax liabilities or defer them to a later period. Although the tax rate on accounting income is always at the corporate tax rate, in any year the income assessable for tax purposes can be quite different from the net revenues available to the business. The timing aspect and the fact that taxes are assessed on the basis of nominal income means that the prevailing

[25] According to IPART calculations, the average effective tax rate paid by the NSW distributors amounted to 25 per cent in 1996/97 (see IPART, The Rate of Return for Electricity Distribution Networks, Discussion Paper, November 1998, p. 9).

inflation rate also has a significant impact on the effective tax rate. The effect that deferral of tax has on the timing of cash flows does not generally cause administrative difficulties for a corporate entity that is well accustomed to uneven cash flows.

2.10.1 Commission considerations regarding the effective tax rate

For the purposes of determining the cost of capital, the code requires the Commission to maintain competitive neutrality. The Commission adopted an effective tax rate of 23.20 per cent, which was derived from the financial model.

2.11 Conclusion

The Commission has given careful consideration to the values that should be assigned to SPI PowerNet's cost of equity given the nature of its business and current financial circumstances. The Commission has decided to adopt a nominal risk free interest rate of 5.12 per cent, reflecting the ten-day moving average on the five-year government bonds. The Commission has arrived at a debt margin of 1.20 per cent above the nominal risk free interest rate, which results in a cost of debt of 6.32 per cent.

The Commission has looked at market evidence and accepted the advice of financial experts in determining a market risk premium of 6.00 per cent. The Commission has examined the risks faced by SPI PowerNet and the betas of similar businesses in arriving at an equity beta of just below 1.0. This figure is above the current average equity beta for the infrastructure and utilities industry group listed on the Australian Stock Exchange. The Commission will adopt an equity beta of 1.0, based on an asset beta of 0.4.

In estimating the return on equity, the code specifies that the Commission maintains competitive neutrality, therefore, for the tax and gamma parameters, it utilised the same approach adopted in *the NSW and ACT* and *Powerlink* revenue caps, that is a corporate tax rate of 30 per cent and a franking credits utilisation ratio of 50 per cent.

The Commission has estimated a feasible range for the cost of capital parameters, which is illustrated in Table 2.4 below. Within that range, and consistent with the discussion above, the Commission has adopted a post-tax- nominal return on equity of 11.09 per cent for the purposes of this decision, which translates to a nominal vanilla WACC of 8.23%.

Table 2.4 Comparison of cost of capital parameters proposed by the Commission

Parameter	SPI's proposal	Draft Decision	Final Decision
Nominal Risk Free Interest Rate (R_f) %	5.99%	5.31%	5.12%
Expected Inflation Rate (F) %	3.10%	2.26%	2.04%
Debt margin (over R_f) %	1.85%	1.20%	1.20%
Cost of debt $R_d = R_f$ + debt margin %	7.84%	6.51%	6.32%
Market Risk Premium (R_m-R_f) %	6.00%	6.00%	6.00%
Debt Funding (D/V) %	60%	60%	60%
Value of imputation credits γ	50%	50%	50%
Asset Beta β_a	0.585	0.40	0.40
Debt Beta	0.31	0.00	0.00
Equity Beta	1.0	1.00	1.00
Nominal Post Tax Return on Equity	11.99%	11.28%	11.09%
Nominal Vanilla WACC	9.50%	8.42%	8.23%

3 Asset Base

3.1 Introduction

The revenue cap set by the Commission for SPI PowerNet commences from 1 January 2003. As part of its decision, the Commission must reach a view on the value of the non-contestable elements of SPI PowerNet's transmission assets as at that time.

The Commission's discretion in this regard is constrained by the code. Deprival value is generally defined as being the lesser of an asset's ODRC or economic cost.

To assist the Commission in determining the appropriate opening value to apply to SPI PowerNet's assets, the Commission engaged PB Associates to undertake a review of the 1994 jurisdictional valuation and SPI PowerNet's asset roll forward proposal. The main findings of PB Associates' review are outlined in section 3.4.

The remainder of this chapter:

- sets out the code requirements associated with the valuation of SPI PowerNet's RAB (section 3.2);
- summarises the Commission's Final Decision concerning the RAB as well as other relevant information including:
  - SPI PowerNet's proposal;
  - the views of interested parties; and
  - a summary of the major findings of the PB Associates' review.

3.1 Code requirement

The code places limits on the ability of the Commission to exercise its regulatory discretion in arriving at an opening value for the existing asset base. Clause 6.2.3(d)(4) of the code states that the Commission is to regulate transmission network revenues according to the principles (amongst others) that:

> (i) assets created at any time under a take or pay contract are valued in a manner consistent with the provisions of that contract;
>
> (ii) assets created at any time under a network augmentation determination made by NEMMCO under clause 5.6.5 are valued in a manner which is consistent with that determination;
>
> (iii) subject to clauses 6.2.3(d)(4)(i) and (ii), assets (also known as "sunk assets") in existence and generally in service on 1 July 1999 are valued at the value determined by the Jurisdictional Regulator or consistent with the regulatory asset base established in the participating jurisdiction provided that the value of these existing assets must not exceed the deprival value of the assets and the ACCC may require the opening asset values to be independently verified through a process agreed to by the National Competition Commission;

(iv) subject to clauses 6.2.3(d)(4)(i) and (ii), valuation of assets brought into service after 1 July 1999 ('new assets'), any subsequent revaluation of any new assets and any subsequent revaluation of assets existing and generally in service on 1 July 1999 is to be undertaken on a basis to be determined by the ACCC and in determining the basis of asset valuation to be used, the ACCC must have regard to:

(A) the agreement of the Council of Australian Governments of 19 August 1994, that deprival value should be the preferred approach to valuing network assets;

(B) any subsequent decisions of the Council of Australian Governments; and

(C) such other matters reasonably required to ensure consistency with the objectives specified in clause 6.2.2.

3.2 SPI PowerNet's original proposal

Opening asset valuation

SPI PowerNet's application details its proposed opening asset valuation for the period commencing 1 January 2003, which is derived from:

- an independent Optimised Depreciated Replacement Cost (ODRC) valuation undertaken by SKM at 1 July 1994;
- rolling forward the adjusted jurisdictional valuation to 1 January 2001, based on actual capex, disposals, depreciation and its revaluation;
- determining a value for assets for which no provision was made in the 1994 jurisdictional valuation (prepared by SKM);
- including such assets in the roll-forward at 1 January 2001 to form a value for "sunk assets" for the purposes of clause 6.2.3(d)(4)(iii) of the code; and
- rolling the sunk assets valuation forward to 1 January 2003 to form the opening value of the RAB, which includes re-optimising the network and rolling in assets related to non-contestable excluded services.

Adjustments to the independent jurisdictional valuation

The valuation of the Victorian electricity transmission assets as at 1 July 1994 was prepared by SKM and used by the Victorian Government in formulating the Victorian Electricity Supply Industry Tariff Order (Tariff Order) as the regulatory asset based established in the participating jurisdiction.

SPI PowerNet argues that there are a number of fundamental defects in the SKM valuation. As part of their application, SPI PowerNet lists the following defects:

- the 1994 SKM valuation incorporated a harsh optimisation compared with the subsequent optimisations for other TNSPs. Approximately 12 per cent of the network was optimised down or out;

- the 1994 SKM valuation contained a large number of material errors including, phantom assets, omitted assets, incorrect in-service dates, incorrectly assigned replacements costs and incorrect modern engineering equivalents;

- there were a number of missing assets, such as system assets, easements and future terminal station sites.

SPI PowerNet contends that both GPU, the original purchaser of the PowerNet business, and SPI PowerNet has always understood that the Commission would revalue the asset base once it became the regulator for revenue setting purposes in 2003.

SPI PowerNet's proposed roll forward of the 1994 RAB valuation as at 1 January 2001

Table 3.1 outlines SPI PowerNet's actual asset acquisition, write-downs, and depreciation for the period 1 July 1994 to 1 January 2001. The written-down value of the rolled-forward asset base at 1 January 2001 is $1,406.9 million.

Table 3.1 SPI PowerNet's proposed roll forward schedule from 1 July 1994/95 to 1 July 2000/01 ($m)

Period starting	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
Opening asset base	1,390.6	1,421.1	1,436.6	1,411.6	1,395.0	1,382.1	1,360.1
New assets (capex)	12.8	17.7	18.2	10.5	15.5	6.1	18.5
Indexation	63.1	44.6	4.9	-2.4	22.3	25.1	80.0
Depreciation	45.5	46.8	48.1	24.8	50.7	53.2	51.6
Closing asset base	1,421.1	1,436.6	1,411.6	1,395.0	1,382.1	1,360.1	1,406.9

Opening asset base 1 Jan. 2001: 1,406.9

SPI PowerNet's proposed valuation of additional assets

Table 3.2 outlines the various classes of assets for which no provision was made in the jurisdictional asset base (easements, future terminal station, system spares, communications assets and 66 kV transmission assets). Taken together, SPI PowerNet's proposed valuation of these assets is $307.2 million as at 1 January 2001.

Table 3.2 SPI PowerNet's proposed valuation of additional assets

Additional assets	Value at 1 January 2001 $m
Easements	231.8
Future terminal station sites	25.2
System spares	10.1
Communication assets	28.2
66 kV transmission lines	11.2
Total	**307.2**

SPI PowerNet's proposed roll forward schedule from 20001/02 to 2003/04

The value of the regulatory asset base as at 1 January 2001 is $1,714.1 million. This valuation is made up of the 1994 RAB rolled forward value of $1,406.9 million plus the additional assets value of $307.2 million.

To determine the opening value of the RAB at 1 January 2003, the 1 January 2001 value of $1,7141 million is rolled forward for 2 years to include actual and forecast capital expenditure, retirements, inflation and depreciation over the period. In addition, adjustments have been made at 1 January 2003 to allow for re-optimisation and the roll-in of some services previously outside the revenue cap.

Table 3.3 outlines the results of the roll-forward and SPI PowerNet's adjustments for the opening value of the RAB as at 1 January 2003 ($2,067.7 million).

Table 3.3 SPI PowerNet's proposed roll forward schedule from 2001/02 to 2003/04 ($m)

Period starting	1 Jan. 2001	1 Apr. 2001	1 Apr. 2002	1 Jan. 2003
Opening asset base	1,714.1	1,733.8	1,734.5	2,067.7
New assets (capex)	14.8	16.6	55.5	
Indexation	18.4	42.2	32.4	
Depreciation	13.5	58.2	48.0	
Closing asset base	**1,733.8**	**1,734.5**	**1,774.4**	
Roll-ins for new revenue period				
VNSC			7.4	
Other excluded assets			36.1	
Re-optimisation			249.8	

3.3 Consultants' reports

3.3.1 The SKM Valuation

In 1994 SKM carried out a valuation of the electricity supply system in Victoria. The aim of the valuation was to establish the value of assets to provide opening balance sheet values for accounting and taxation for the new companies and to provide a basis for transmission and distribution pricing and tariff determination.

The SKM valuation used an ODRC methodology. Assets were valued at replacement cost on a like for like basis. Depreciation was calculated by the straight-line method. Economic lives for the various assets were similar to those used by other utilities worldwide.

Based on the above methodology, SKM concluded that:

- optimised assets should be reduced by 10 per cent of the transmission assets and 10 per cent of the subtransmission lines. This was considered to be a reasonable assessment of the installed overcapacity; and
- the total ODRC of the transmission system be valued at $1,390 million.

SKM made no provision for easements in the valuation. It concluded that historical compensation costs would be in the range 5-7 per cent because of urbanisation, but that there was insufficient information to value easements.

On this basis, SKM arrived at a valuation of $2.827 billion as at 1 July 1999. SKM 's findings are summarised in table 3.4.

Table 3.4: SKM ODRC valuation as at 1 July 1994 ($'000)

Asset Class	Replacement Cost	ODRC
Transmission switchgear	425,059,000	216,319,556
Transformer	286,828,200	134,794,204
Overhead line and cable	992,843,980	711,527,892
Others	48,310,00	32,168,083
SF6 DUCT @ Rowville	6,465,000	4,433,143
Series Compensation	25,862,000	18,749,950
66kV Capacitors 200 Mvar	3,200,000	720,000
Establishment plus building	103,708,850	52,779,149
Total	**1,829,277**	**1,171,491**

3.3.2 The URBIS valuation of easements

In December 1997, A.T Cocks (now operating as Urbis) conducted a replacement cost valuation of SPI PowerNet's transmission network over privately held land and does not include agreements covering Crown land or land owned by government or semi-government authorities. According to SPI PowerNet, in an exercise to verify the 1997 value, urbis has since indicated the value would likely approach $1 billion in 2001 as SPI PowerNet has many easements over valuable inner city and urban land.

3.3.3 PB Associates' review

The Commission engaged PB Associates to undertake a review which analyses and comments on the assumptions, methodology and findings contained in the SKM report. PB Associates also considered the additional information provided to the Commission by SPI PowerNet relating to the adjustments to the 1994 valuation. SPI PowerNet's asset roll forward schedule was analysed in its review of its capex proposals.

The following comments summarise the results of PB Associates' review of the SPI PowerNet asset base:

- SPI has adopted a reasonably rigorous and detailed process to develop their 1 January 2003 RAB valuation for the revenue cap application;
- the value of some assets classified as "omitted assets" was added to the roll forward 1994 SKM valuation to arrive at the RAB valuation as at 1 January 2001. From a regulatory policy perspective, PB Associates believes that it is for the Commission to consider whether it is appropriate to add to the RAB assets for which no provision was made in the 1994 SKM valuation;

- one previously omitted asset class was the land for future terminal stations. SPI PowerNet included $25.2 million as the value of these sites. PB Associates' opinion is that these sites should not be included. Another omitted asset class was the 66kV transmission lines. SPI PowerNet valued these assets at $11.2 million. PB Associates states that its review indicated that the ODRC valuation is approximately $7.3 million;

- for easement valuation SPI PowerNet has used a hybrid method. Actual historical costs were indexed to 2001 and added to the transaction costs estimated in 1997 and escalated to 2001. This resulted in a value of $231.8 million. PB Associates reviewed this valuation and notes that the use of the SPI PowerNet methodology produces a calculated value of $194.7 million. However, PB Associates indicated that preferred approach would be to value all landowner payments on the basis of historic cost;

- PB Associates recommended that the optimisation process be reviewed and that some studies are re-run. Further, PB Associates states that some of the financial treatments applied by SPI PowerNet should also be reviewed;

- if re-optimisation is performed, PB Associates believes that it should be a complete re-optimisation including land. The land optimisation has not been done as part of re-optimisation and PB Associates believes that it should be included in any re-optimisation; and

- PB Associates suggested that a standard life of around 60 years would better reflect the average life of the transmission lines, then the 70 years proposed by SPI PowerNet.

Analysis of adjustments to the jurisdiction regulator's valuation

As noted previously, as part of its review, PB Associates conducted an analysis of SPI's adjustments to SKM's valuation. Each of SPI PowerNet's adjustments is discussed in turn.

Future terminal station sites

PB Associates notes that no provision for land for future terminal station sites was included in the SKM valuation. According to SPI PowerNet's application, VENCorp has indicated that it requires these blocks of land to be retained for future terminal station development, even though the new terminal stations are unlikely to be constructed within the 10-year planning horizon. However, PB Associates understood that VENCorp does not undertake planning of terminal stations and is responsible for the planning and requisition of augmentation to the shared network only. Further, PB Associates understood that the planning and directing of new connection assets is entirely the responsibility of the connection customers, in these cases the distribution companies. The Victorian distribution companies have jointly published a planning report, which details the planning of connection assets for the next 10 years. According to this report only one new substation has been planned in the above sites which will be situated in Cranbourne.

PB Associates conclude that since these blocks of land were not included in the valuation of the asset base at the time of privatisation, and since the sites are not required during the 10-year planning horizon (and the construction of Cranbourne and other new terminal stations is potentially contestable), inclusion of these blocks of land in the RAB at this stage would not b necessary.

66kV Transmission Lines

According to SPI PowerNet, 66kV transmission lines were not included in the original 1994 valuation. As part of its application, SPI PowerNet has included these assets in the RAB. PB Associates understood that the 66kV assets were not included in the 1994 SKM valuation because, at that time, it was not clear whether the TNSP was going to own these lines. PB Associates believes that the ownership issue has now been established and it is appropriate to include these assets into the RAB. However, PB Associates concludes that SPI PowerNet's valuation of these lines is excessive. SPI PowerNet had valued the 66kV transmission lines as at 1 January 2001 at $11.2 million. PB Associates recommends a lower valuation of $7.3 million as at 1 January 2001.

In its review, PB Associates notes that there were two lines in question, the East Rowville terminal station to Frankston terminal station double circuit 66kV tower line and the Morwell terminal station Loy Yang double circuit lines.

According to PB Associates the first line, is mostly on towers and if it were to be built today it would be built as a pole line. Further, PB Associates considered that the modern equivalent asset for a 66kV line of the rating similar to the ratings of this line is a double circuit pole line. PB Associates notes that according to SPI PowerNet's valuation, the ODRC of this line is $5.2 million. PB Associates believed that the ODRC value of this should be $1.3 million. PB Associates stated that for their estimation of the valuation of the 66kV line they had used the replacement cost of double circuit 66kV lines obtained from the 1994 SKM report and indexed to 1 January 2001.

PB Associates understood that in regard to the second line, the two double circuit lines are intended to provide N-2 security for Loy Yang substation.

Easements

PB Associates reviewed the methodology used by SPI PowerNet to estimate the value at which its existing easements should be rolled into the asset base. SPI PowerNet's valuation included two components:

1. The compensation paid to easement owners. SPI PowerNet has records of the compensation paid to the owners of 97 per cent of its easements. These historical costs were rolled forward to the valuation date of 1 January 2001.

2. Transaction costs. These were taken from a replacement cost valuation of SPI PowerNet's easement network over privately owner land, prepared by A T Cocks Consulting (now urbis) for SPI PowerNet's former owner, GPU PowerNet. The transaction costs in the A T Cocks report have been rolled forward from the valuation date (December 1997) to 1 January 2001. According to the A T Cocks

report transactions costs includes three components, acquisition costs, solatium and landowner's cost or fixed costs.

In its application, SPI PowerNet has estimated the rolled forward value as at 1 January 2001 of the historical compensation paid to private landowners on the acquisition of easement rights was $79.7 million. According to PB Associates, in the absence of information to the contrary, it is assumed that these payments represent the total paid directly to the landowners as compensation for the acquisition of the easement.

In regard to solatium, PB Associates noted that SPI PowerNet had not provided any document to substantiate that solatium was paid separately to compensation. PB Associates concluded that the majority of SPI PowerNet's easements would not have been subjected to a solatium payment and therefore should not be included as a separate component in the easement valuation.

In regard to landowners' costs, PB Associates noted that SPI PowerNet had provided seven examples of landowners' fixed cost being paid separate to the compensation. PB Associates stated that it appeared inconsistent, given the assiduous approach taken to record keeping by the former SEC, that SPI PowerNet does not have most of these records to obtain the actual historical cost, although they have 97 per cent of records of compensation to land owners.

PB Associates concluded that using SPI PowerNet's hybrid method, the maximum valuation should be $194.7m based on the same methodology. PB Associate's preferred approach would be to value all landowner payments on the basis of historic cost. To be consistent with this, PB Associates stated that if a payment was not made to landowners, it should not be provided for in the valuation.

Re-optimisation

SPI PowerNet has proposed to value the assets entering the asset base through re-optimisation at replacement cost ($249.6 million). PB Associate argued that SPI PowerNet's financial treatment of the re-optimised assets is different to the proposed statement s4.5 of the draft *Regulatory Principles*, which states that:

> assets which are optimised out of the regulatory asset base will be carried forward at the rate of return. If they are optimised back into the regulatory asset base, their value will be lesser of the carry forward value or depreciated optimised replacement cost. Where assets are reinstated into the asset base, the Commission will take into account the past level of recovery i.e. the written down value when removed from the regulatory asset base.

SPI PowerNet has used a different approach to that stated above. PB Associates concluded that the assets entering the asset base through re-optimisation should enter at a depreciated replacement cost of $153.7 million.

Optimisation

PB Associates recommended that certain criteria such as load growth or forecast, planning horizon, network security and planning criteria used in the optimisation process, should be reviewed and that some studies should be re-run. PB Associates notes that in its re-optimisation exercise, SPI PowerNet did not optimise substation

land. PB Associates recognises that it has been normal practice to provide for a buffer zone around terminal stations both for environmental reasons and to provide room for transmission line terminations. However, PB Associates argues that some of this land is in excess to the actual requirement.

Excluded assets

PB Associates noted that SPI PowerNet has included a number of projects to be rolled into the asset base on 1 January 2003. SPI PowerNet identifies two types of projects: non-contestable (i.e. those providing services to VENCorp) and connection asset projects, which provide services mainly to distribution companies. PB Associates pointed out that with regard to the first category of projects, VENCorp states in its revenue cap application that it has performed detailed economic assessments of these projects. PB Associates recommended that if the Commission decides to allow these non-contestable projects amounting to $10.2 million to be included in the RAB, the Commission should scrutinise all the relevant details.

PB Associates noted that the other projects are mainly connection assets totalling $25.9 million. PB Associates noted that in its discussions with SPI PowerNet, it was revealed that the values included in the revenue cap application are not the actual project costs. According to PB Associates, inclusion of these assets should be on an actual cost like basis.

3.4 SPI PowerNet's response to the consultant's report

Asset lives

SPI PowerNet believes that SKM's 1994 estimate of 70 years for the average life of the transmission line is within the plausible range.

Future terminal station sites

SPI PowerNet suggests that future terminal station sites should not be included in the RAB on optimisation grounds and that land at existing terminal station sites should be optimised because, in PB Associates' view, some site are excessively large.

SPI PowerNet believes that PB Associates' has applied a somewhat short sighted approach to what is an issue of State significance and has misunderstood one of the simplest of facts in this contact – if SPI PowerNet is not paid to retain this land then it will very likely be sold off and will never again be available to the electricity industry for meeting new or growing demands for terminal station capacity. This is because no entity in the Victorian Electricity Industry has a power of compulsory acquisition and, even if someone did, it would be extremely difficult to reacquire these parcels of land once they are developed for residential or commercial purposes.

Easements

SPI PowerNet considered that its proposal is based on a synthetic historical cost approach and is solid because it overcomes the gaps and uncertainties in the historical record. Further, SPI PowerNet notes that against the background of the (essentially) replacement cost easement valuation approach used by the Commission for TransGrid

and proposed recently by ElectraNet SA in respect of its easement portfolio, it would seem anomalous to strike out SPI PowerNet's claim in respect of solatium on the basis that the historical record is unclear.

Re-optimisation

SPI PowerNet agrees in a literal sense, that the approach that it has proposed for re-optimised assets is different to the approach outlined in the draft *Regulatory Principles*. However, SPI PowerNet maintains that statement s4.5 of the draft *Regulatory Principles* seems at odds with itself. SPI PowerNet considers that the s4.5 of the draft *Regulatory Principles* proceeds on a general assumption that the replacement cost of system assets is decreasing in real terms. Given this, the result of carrying forward an optimised asset at the cost of capital could never exceed the ODRC of an asset of the same age. In SPI PowerNet's opinion there is really no expedition at all because standard optimisation techniques require that optimisation does not result in valuing an asset at more then its worth. Further, SPI PowerNet states that overwhelmingly, the use of modern engineering equivalent results in reductions in replacement cost not increases and, even if there were increases, it would be nonsensical to ask consumers to pay for high technology assets when this is not what they are being served by.

Given this, SPI PowerNet considers that it is correct to interpret statement s4.5 that the value to be included in the RAB following re-optimisation would be the lessor of the carried forward value and the difference between the cost of replacing the asset now and the present value of replacing the existing asset at the end of the expected life. This approach ensures that customers are no worse off financially from the re-optimisation of an existing asset that is part way through its life, when measured on a life cycle basis against the yardstick of a completely new asset.

The consequences of applying a "fair value" constraint to the re-optimisation are that SPI PowerNet will not receive the full amount of the carried forward value. Rather, SPI PowerNet will receive $95.9 million out of $161.9 million attributable to foregone return and depreciation. This means that SPI PowerNet suffers a permanent penalty of $66 million.

In regard to optimisation, its consultants (SKM and Rolib) advised SPI PowerNet that the issues raised by PB Associates do not have a material effect on the outcome of the optimisation.

Excluded assets

- SPI PowerNet notes that it does not understand exactly what PB Associates' was seeking to scrutinise in relation to non-contestable augmentation contracts, be they with VENCorp or distributors. In view of this, and the lack of specificity in PB Associate's report, some further discussion would appear to be necessary to clarify matters. In relation to the roll-in of excluded service contracts, PB Associates is quite correct that there are a number of projects for which estimated values were used to determine the roll-in value. Prior to the finalisation of the revenue cap, SPI PowerNet will be able to provide updated figures to the Commission, representing the final costing of the projects.

3.5 Submissions on Draft Decision

3.5.1 SPI PowerNet

SPI PowerNet noted in response to the Draft Decision, that the Commission accepted in large part the valuation of the RAB proposed. The only exceptions concern the values ascribed to easements and re-optimisation. SPI PowerNet believed that the Commission's Draft Decision in these regards is based on errors of fact, which when corrected would lead to a different conclusion.

Easement Valuation

SPI PowerNet noted that the Commission in the Draft Decision allowed for $79.7 million for the value of easements based on the historic cost records for land compensation. Further, SPI PowerNet noted that this differs from the PB Associates *Review of SPI PowerNet Asset Base,* undertaken for the Commission, which concludes that a $194.7 million easement value is justified. Specifically, the Commission has not accepted PB Associates' recommendation that $24.7 million for land owners' costs reimbursed by SPI PowerNet at time of purchase or $89.4 million for the capitalised costs of managing the easement purchases (including fees, legal costs and survey costs) be allowed into the RAB.

Land owners' costs

SPI PowerNet noted that in not allowing the land owners' cost component (related to legal and other valuation expenses) of its easement valuation the Commission stated that:

> "The Commission considers that in the absence of information to the contrary it is assumed that these payments (the $79.7 million) represent the total paid directly to the landowners ass compensation for the acquisition of the easements".[26]

SPI PowerNet stated that the available evidence presented to both PB Associates and the Commission clearly contradict this statement. Further, SPI PowerNet noted that while its records on the reimbursement of land owners' costs are limited to less than 10 per cent of easements, the existing evidence shows owners costs were settled separately from compensation without expectation. Indeed, SPI PowerNet categorically stated that land owners' costs are not included in compensation costs recorded on any of its available easement registration records.

Easement purchase management costs

SPI PowerNet noted that in not allowing the capitalised management cost component of its easement valuation the Commission stated that:

> "The transmission line replacement costs used for valuation purposes can be expected to include all planning and other costs associated with identifying and securing the line route. This would

[26] ACCC, *draft decision – Victorian Transmission Revenue Caps 2003 - 2008,* September 2004, p. 45.

include all acquisition costs such as the costs of landowner negotiations, environmental impact and cultural heritage records as required. The Commission considers that there would be no reason why transaction costs could not be charged against the replacement cost of the line".27

SPI PowerNet stated that there is no basis for this statement and it contradicts standard valuation practice. In response, SPI PowerNet provided a letter from SKM (dated 28 May 2002) stating that up until very recently, the line replacement costs used in the 1994 valuation report did not include the above costs.

SPI PowerNet believed that this evidence negates the basis of the Commission's decision to disallow these costs. Further, SPI PowerNet noted that the cost estimate provided does not include amounts for Native Title Disputes, heritage Studies and extensive Environmental Assessments.

The Commission's concerns with hybrid methodology

SPI PowerNet noted that the Commission expressed its concerns that SPI PowerNet's hybrid methodology, which combines an (inflation adjusted) historic cost of land compensation with 1997 estimates of transaction costs, conflicts with its preferred approach of pure historic costs. This concern as the Commission has explained arises from the fact that compensation costs can be expected to rise over time, at a rate considerably faster than inflation, in line with the value of the underlying property. This makes modern replacement cost for easements much higher than the inflation adjusted historic cost.

Finally, SPI PowerNet considered it has supplied ample evidence to justify the $194.7 million valuation to be attached to easements.

Re-optimisation

SPI PowerNet noted that in its Draft Decision the Commission accepted $153.7 million of its proposed re-optimisation, but rejected the remaining $95.9 million related to the capitalisation of part of the foregone returns and depreciation on the re-optimised assets.

In its application, SPI PowerNet proposed that a transmission owner should be allowed to recoup the rate of return and depreciation allowance that it had been denied in respect of the portion of the network that optimised out, provided that so doing would not:

- cause the present value of future network charges to exceed the replacement cost of the relevant assets; or
- otherwise cause customers to cease their use of the transmission system.

If these conditions are met then SPI PowerNet is confident that allowing assets to be optimised back into the RAB at their written down value when optimised out, carried forward at the cost of capital (but without depreciating the asset), represents fair value for electricity customers.

[27] ACCC, *draft decision – Victorian Transmission Revenue Caps 2003 - 2008*, September 2004, p. 46.

SPI PowerNet noted that NERA has shown that its proposal is indeed consistent with the draft *Regulatory Principles.* Whereas the Commission in its Draft Decision implicitly assumes that the term refers to straight-line depreciation, in fact the draft *Regulatory Principles* proposes and then prescribes the use of "competition depreciation". Further, NERA believed that depreciated replacement cost defined according to competition depreciation represents the value of an existing asset to consumers given the alternative of purchasing a new asset to perform the same function. Compared with the value of an asset determined with respect to straight-line depreciation, the value of an asset determined with respect to competition depreciation will generally be higher.[28] Finally, NERA concluded, "it would appear that SPI PowerNet's approach to optimisation is unreasonably harsh on investors and is likely to result in too low a value."[29]

3.5.2 Other parties

EUCV

Easements

The EUCV considered that the best value for easements is $53.2 million as at the time of the sale of the assets. The EUCV noted that whilst valuation of easements has been noted by many parties as being difficult (the easement being only a right to encompass an electricity transmission system) the ownership of actual land is quite readily assessed. SPI PowerNet valued the land associated with the future terminal station sites as worth $25.2 million, and the Commission has accepted this valuation. Using the economic depreciation rates permitted by the Commission the 1996 value for this land would be $25.48 million. Thus, the 1996 valuation for easements and other owned land, is the difference between the figure in the annual report (i.e. $78.7 million) and the value for the future terminal stations (i.e. $25.5 million), which is $53.2 million.

The EUCV considered that there are two important issues relating to this valuation of land assets. The first is that this is the basis used by the jurisdiction for the setting of the tariffs under the tariff order. The second is that this is the basis for land values agreed at the time of purchase of all transmission assets by GPU from the Victorian Government.

The EUCV noted that it has been argued by the regulated businesses that, at the time of acquisition of the assets, the value included in the RAB for easements was understated. However, the RAB had been established by the Victorian government (in its role as previous jurisdictional regulator) at a certain amount – regardless of what value may have been allocated to specific elements comprising the RAB the Commission is permitted only to vary the RAB set by the pervious jurisdiction

[28] This is assuming a positive cost of capital, relatively constant or falling real replacement costs, relatively constant or increasing useful lives for replacement assets and similar maintenance costs associated with new and existing assets.

[29] NERA Briefing Presentation, July 2002.

regulatory by adjusting for inflation, for optimisation of asset usage, and by permitting the inclusion of "new assets" acquired subsequent to 1 July 1999.[30]

The EUCV considered that there is no argument by SPI PowerNet that easements were never included in the purchase of the assets – thus there is no argument that the RAB set by the jurisdiction does not include for all easements, regardless of the value assigned them. In the view of the EUCV, the issue of the easement value is now quite clear. In its role as the previous regulator, the Victorian government implicitly valued its transmission easement at $53.2 million and included this value for setting tariffs through the Tariff Order. This valuation fulfils the requirement of the Electricity Code for subsequent asset value setting by the Commission. The Victorian government subsequently sold the easement as part of the overall sale of the assets to the new owners of SPI PowerNet, for an implied value of $53.2 million, setting a clear and agreed commercial value of these assets.

GST Spike

The EUCV noted that in its earlier submission it stated that the GST spike needed to be eliminated from the roll forward of asset value. The Commission makes passing reference to the fact that this issue was raised but makes no further comment. The EUCV pointed out that consumers are firmly of the view that the Commissions is permitting SPI PowerNet to "double dip" and that if it were private enterprise that was using the introduction of the GST, the Commission itself would be required to analyse the right of the business to do so.

TXU

TXU submitted that the Commission may have discretion on the basis on which to revalue the RAB under Section 6.2.3(d)(4)(iv) of the Code. However, if the Commission is to revalue the original RAB, it must do so on the basis that ensures that it does not contravene the objectives of the transmission regulatory regime under clause 6.2.2 of the Code.

TXU believed SPI PowerNet should not be provided with a windfall gain by allowing inclusion of the proposed adjustments to include a value for easements in the original RAB. Any windfall gain achieved by SPI PowerNet via a revaluation of the RAB constitutes a contravention of the transmission regulatory principle of achieving a "fair and reasonably return" under the Code. Further, TXU noted that SPI PowerNet acquired the Victorian electricity transmission business on the basis of the initial RAB, which the Victorian government did not attribute any value to easements. TXU submits that the Commission is not recognising "pre-existing policies of government's transmission asset values, revenue paths and tariffs", under section 6.2.2 of the Code.

[30] National Electricity Code 6.2.3(d)(4)(iv).

3.6 Commission's considerations

3.6.1 Assets for which no provision was made in jurisdictional valuation and re-optimised assets

In setting a revenue cap for the initial regulatory control period, the Commission is required under s 6.2.3(d)(4)(iii) of the code to value sunk assets at the value determined by the Jurisdictional Regulator or consistent with the regulatory asset base established in the jurisdiction, provided that this value does not exceed deprival value. Based on advice from the Victoria Government, the Commission has concluded that no value had been determined by the Jurisdictional Regulator, but that a regulatory asset base had been established in Victoria, in the form of a 1994 valuation prepared by SKM and used by the Victorian Government in preparing the Tariff Order.

In response to TXU and the EUCV the Commission points out that it has given consideration to the implications of the requirement that it value sunk assets "consistent with" this regulatory asset base and has sought independent legal advice on the issue. The Commission is of the view that the principal constraint imposed by s 6.2.3(d)(4)(iii) is that where, in establishing the regulatory asset base in the jurisdiction, a judgement has been made on the treatment of a particular asset or class of assets, the Commission cannot substitute its own judgement for that which was exercised in establishing the RAB.

However, where no judgement has been made with respect to the treatment of assets, the Commission is of the view that it is consistent with the regulatory asset base established in the jurisdiction for it to include those assets in the asset base, provided that s 6.2.3(d)(4)(iii) of the code is otherwise satisfied.

Further, where a judgement was made to exclude assets from the RAB for a particular reason, the Commission is of the view that it is consistent with the regulatory asset base for it to now include such assets in the asset base if the circumstances which lead to the particular treatment of those assets by the jurisdiction have changed in such a way as to justify a different treatment by the Commission.

For example, some assets, which were 'optimised out' of the asset base established by SKM in 1994, were in fact in existence and generally in service on 1 January 2001. The Commission is of the view that it is consistent with the regulatory asset base for it to include such assets in the asset base if, applying the jurisdiction's approach to optimisation, the assets would be part of an optimised network in existence and generally in service as at 1 January 2001. While SKM's decision to exclude these assets was based on its judgement as to the size of an optimised network in 1994, it does not represent a judgement as to the actual size of the optimised network in existence and generally in service as at 1 January 2001.

On the specific issue of easements, the Commission notes that the Final Report prepared by SKM states (at p 17) that:

> "Transmission lines are constructed on easements and the compensation costs of obtained such easements has not been included for the interim report as these are not available.

> It is understood that historical compensation costs were in the range 1-2% of line costs; however today's compensation costs would be in the range of 5-7% because of urbanisation. No provision has been made in the valuation for easements."

While SKM appears to have speculated as to a method by which easements could be valued, it also appears that its final judgement was that no provision should be made for easements. However, the reason for this judgement appears to be that SKM did not have sufficient information to undertake such a valuation. The Commission is of the view that, if it now has sufficient information it can, consistent with the regulatory asset base established in Victoria, make provision for easements in the asset base.

The Commission's considerations on this matter relate only to whether it can, under section 6.2.3(d)(4)(iii), include assets of the type discussed above in the valuation of sunk assets. It does not go to the value that the Commission would actually assign to such assets or the method that the Commission would use to undertake a valuation. In performing this task, the Commission will be guided by its draft *Regulatory Principles*.

In conclusion, the Commission does not consider that including assets where no judgement has been made contravenes the objectives of the transmission regulatory regime under section 6.2.2 of the Code.

3.6.2 Analysis of adjustments to the jurisdiction regulator's valuation

Future terminal station sites

The Commission understands that the planning and directing of new connection assets is entirely the responsibility of the connection customers, in these cases the distribution companies. Further, the Commission understands that VENCorp does not undertake planning of terminal stations and is responsible for the planning and requisition of augmentation to the shared network only.

The Commission is aware that the distribution companies have planned only one new substation in the next ten years. However, the Commission recognises that traditional practice in the electricity industry has been to acquire land well in advance (in some cases up to 30 years in advance) of the actual construction of infrastructure. This approach offers some significant advantages:

- minimising costs of acquisitions by limiting the impact of encroaching development, which pushes up land prices;
- reserves the relatively large parcels of contiguous land required for terminal stations from further development for other purposes;
- allows appropriate easements over adjacent land to be established relatively easily; and
- land that is proposed to be used for future major electrical infrastructure is clearly identified so that local councils and property developers can plan their developments around such land well ahead of time, avoiding in appropriate developments close to infrastructure.

Assuming that the acquisition of land is conducted with sufficient regard to prudent planning scenarios for network development, the Commission is of the view that the forward acquisition of land is in the interests of both electricity customers, and the public generally. Furthermore, the Commission is of the view that the disposal of land originally purchased for future transmission needs should be more tightly integrated with the future plans for the transmission system.

66kV Transmission Lines

The Commission accepts the inclusion of the 66kV lines but at a revised valuation put forth by PB Associates.

Easements

Easements are rights acquired over land for use of that land in a specific way. In the case of electricity, they are rights to build, own and operate transmission or distribution wires. The terms of the easement are restrictive and usually specify the size (capacity) of the wire that may be built.

According to the draft *Regulatory Principles* a replacement cost methodology should be used when valuing easements. To counter the affect of the potential increase in the capital value of easements over time, the draft *Regulatory Principles* nominates the use of negative depreciation. The easements valuation would require that:

- the contribution to the RAB be based on the actual cost to the TNSP of obtaining the easement rights updated periodically in line with what would be the ODRC based on valuation of easement.

- to the extent that easement valuations are judged to vary over time, the variation in value should be reflected in depreciation allowances linked with the asset in precisely the same way as other assets. If the easement appreciates over time then the allocated depreciation would be negative in nominal terms and serve to offset the higher capital returns associated with the appreciating asset value; and

- if the easement right was resold, the value in the asset base should be close to the sale price given the basis for valuation updates.

However, in recent decisions, such as the *NSW and ACT* and *Powerlink* revenue cap decisions, the Commission has adopted a historical purchase cost rolled forward methodology using the CPI as the index. The Commission recognises that this valuation methodology does not run in parallel with that prescribed by the draft *Regulatory Principles.* The Commission notes that SPI PowerNet stated in its submission:

> "Their concern, as the Commission has explained, arises from the fact that compensation costs can be expected to rise over time, at a rate considerably faster than inflation, in line with the value of the underlying property. This makes modern replacement cost for easements much higher than the inflation adjusted historic cost".

The Commission considers that SPI PowerNet has misinterpreted the Commission's concerns with an ODRC approach to valuing easements. The Commission never

stated in the SPI PowerNet Draft Decision that the modern replacement cost for easements would be much higher than the inflation adjusted historic cost. The Commission simply believes that an ODRC approach ignores the very significant economic differences between easements and other physical transmission network assets such as lines, substations and land.

Transmission lines, substation equipment and land can generally be traded on an open market. For these assets the ODRC valuation is a reasonable approximation for what a willing, but not anxious, buyer would be prepared to pay. In other words, should the network owner have no further need for an asset, it could generally liquidate it at a price approaching the ODRC valuation. The Commission considers that in the case of easements, there is no open market and generally the only likely purchaser is the service tenement.

It seems conceptually incorrect to depreciate an easement. Electricity easements are generally granted in perpetuity, reflecting the fact that they are almost never replaced since load growth does not shift dramatically and because negotiating new easements is a very slow, expensive process. In fact, a network service provider is far more likely to seek to alter the terms of an existing easement to allow a different sized wire to be put up rather than extinguish the easement and begin negotiating a new one.

Finally, the optimisation process is a difficult concept to apply to easements. In undertaking optimisations, most regulators accept the incremental basis on which a network was developed and allow existing transmission line routes to be assumed. However, if easement costs were to be taken into account in the optimisation process, it is doubtful that this would be appropriate. This is because assuming a network owner was deprived of all their assets, the configuration of an optimal replacement network would be very different if existing transmission line routes were not readily available.

As noted in section 3.4.3, SPI PowerNet in its revenue application proposed a hybrid method for valuing easements. Actual historical costs were indexed 2001 ($79.7 million) and added to the transaction costs estimated in 1997 and escalated to 2001 ($152.1 million). This resulted in a value of $231.8 million. The Commission considers that in the absence of information to the contrary it is assumed that the historic cost component of the easements at $79.7 million represents *nearly* the entire total paid directly to the landowners as compensation for the acquisition of the easements.

In regard to landowners' costs, the Commission does recognise that some of these costs were settled separately from the compensation for the acquisition of the easements. SPI PowerNet provided the Commission 208 records of landowner reimbursed costs. Using these records, the average cost per easement is $1,074 thousand (as at 1 January 2001 dollars). Imputed across the portfolio of 8618 easements, that represents a value of $9.2 million for SECV valuation costs. The Commission considers that these are legitimate historic costs which have been paid for and as a result should be included in the valuation of the easements.

In regard to the easement purchase management costs, the Commission notes that SPI PowerNet has sought and received opinion from SKM on how historically utilities treated the aforementioned costs. However, the Commission has not received from

SPI PowerNet any evidence in the form of past records to justify this rationale. Hence, the Commission maintains that these costs would be charged against the transmission line costs.

The Commission in this Final Decision has decided to include all land owner payments on the basis of historic cost ($88.9 million) rolled forward to 1 January 2003 indexed by CPI.

Re-optimisation

In regard to re-optimised assets, the Commission does not believe SPI PowerNet has followed the draft *Regulatory Principles.*

Statement section 4.5 draft *Regulatory Principles* states that:

"assets, which are optimised out of the regulatory asset base, will be carried forward at the rate of return. If they are optimised back into the regulatory asset base, their value will be lesser of the carry forward value or depreciated replacement cost. Where assets are reinstated into the asset base the Commission will take into account past level of recovery (that is, the written down value when removed from the regulatory asset base".

Although not explicitly referenced, the Commission considers that section 4.5 is based on the financial concept of straight-line depreciation in regards to those assets valued at depreciated replacement cost. In formulating its conclusions on this issue, the Commission is not making any judgements in relation to the optimisation process to which these assets where subjected. The Commission considers that these assets should not be carried forward as proposed by SPI PowerNet in its revenue cap application and subsequent submissions. Furthermore, the Commission maintains that this decision is in keeping with the draft *Regulatory Principles*, which correctly expounds the Commissions view that depreciated replacement cost is generally the lessor of the two values. Hence, the Commission will proceed on a depreciated replacement cost valuation of $153.7 million.

It should be noted that the Commission is aware of the asymmetric risk of selectively optimising back into the RAB a part of the asset. There is a risk that only parts of the asset that might show an increase in value are selected for revaluation and other areas that might show a decrease are rolled-forward. However, as noted PB Associates reviewed the overall asset base, including the additional assets, risk of re-optimisation is reduced.

Excluded assets

The Commission considers the roll-in of non-contestable services outside the Tariff Order is appropriate. The Commission sees no compelling reason not to accept the additions such as the VNSC and various connection works not to be incorporated into the RAB for the new regulatory period commencing on 1 January 2003.

3.6.3 Other matters

GST

The Commission notes statements made by the EUCV in its application regarding the GST spike. In relation to this, the Commission confirms that it has not included the GST spike when rolling forward the asset base.

Asset lives

The Commission concurs with PB Associates and believes that the most appropriate life for transmission lines is 60 years.

3.7 Conclusion

The Commission has determined that the value to be attributed to SPI PowerNet's RAB as at 1 January 2003 is $1,835.60 million. The RAB determined for SPI PowerNet in the Draft Decision as at 1 January 2003 was $1,815.56 million. The main differences between the Draft and Final Decision in regard to the RAB are the inclusion of landowner's cost and changes in the indexation of the roll-forward of the opening asset base from 2001 to 2003.

SPI PowerNet's additional assets

Table 3.5 outlines the value of additional assets ($159.7 million in total) the Commission has included in the asset base as at 1 January 2001. Further, the Commission included as at 1 April 2001 ($153.7 million in total) of re-optimised assets. Due to the inclusion of landowner's costs in the easement valuation, the values for the additional assets have changed from the Draft to the Final Decision. However, the values for the re-optimised assets have not changed from the Draft to the Final Decision.

Table 3.5 Additional assets (as at 1 January 2001) ($m)

Additional assets	SPI PowerNet Application	ACCC Draft Decision	ACCC Final Decision
Easements	231.8	79.7	88.91
Future terminal station sites	25.2	25.2	25.2
System spares	10.1	10.1	10.1
Communication assets	28.2	28.2	28.2
66 kV transmission lines	11.2	7.3	7.3
Total	**307.2**	**150.5**	**159.7**

4 Capital expenditure

4.1 Introduction

The Commission will determine SPI PowerNet's MAR taking into account the prudency of its proposed capex, future demand and service quality. The Commission undertakes this process to establish SPI PowerNet's revenue cap and to create appropriate economic drivers for investment.

Under the code, the Commission is removed from the network planning processes. As noted earlier, there is a unique arrangement in Victoria whereby SPI PowerNet owns and operates the transmission network, but VENCorp plans and directs the augmentation of the shared transmission network.

In examining SPI PowerNet's proposed capex program, the Commission is mindful that alternatives to capex proposals can include improvements in opex programs, demand side management and new generation. The Commission will also consider whether or not SPI PowerNet has struck an appropriate balance between capex, opex and overall reliability. Finally, the Commission is aware that a careful distinction needs to be made between ongoing opex programs and the asset renewals portion of SPI PowerNet's capex programs. Some judgement is needed as to whether such proposals should be expensed or capitalised.

These issues are included in the Commission's consideration of both the proposed capex and opex programs and their significance to the overall revenue cap.

The remainder of this chapter:

- sets out the code requirements relevant to the inclusion of capex in a TNSP's asset base (section 4.2);
- summarises the Commission's decision concerning the inclusion of SPI PowerNet's projected capex into the present regulatory period as well as the information considered by the Commission in arriving at that conclusion. This includes:
  - SPI PowerNet's capex proposal for the regulatory period (section 4.3);
  - a summary of the major findings of PB Associates' review (section 4.4);
  - submissions by interested parties (section 4.5);
- summarises submissions on the draft decision (section 4.6);
- sets out the Commission's considerations (section 4.7); and
- summarises the Commission's conclusions in this regard (section 4.8).

4.2 Code requirement

The Commission's task in assessing SPI PowerNet's capex is specified in the code. In particular, Part B of Chapter 6 of the code requires *inter alia* that:

- in setting the revenue cap, the Commission must have regard to the potential for efficiency gains in expected operating, maintenance and capital costs, taking into account the expected demand growth and service standards; and

- the regulatory regime seeks to achieve an environment which fosters efficient use of existing infrastructure, efficient operating and maintenance practices and an efficient level of investment.

To undertake its task, the Commission needs to make informed decisions on the adequacy, efficiency and appropriateness of the capex planned by SPI PowerNet to meet its present and future service requirements. To this end the Commission engaged PB Associates to review SPI PowerNet's proposed capex program. The results of PB Associates' review are summarised in section 4.4.

4.3 SPI PowerNet's original application

4.3.1 Forecast capex

The Victorian transmission arrangements are uniquely structured. SPI PowerNet owns and maintains the majority of Victoria's transmission network assets and provides bulk network services under an agreement with VENCorp. SPI PowerNet also negotiates connection service agreements directly with generators and distribution bodies. VENCorp provides users with shared transmission network services and plans and directs the augmentation of the shared network.

Consequently, SPI PowerNet's future capex requirements do not relate to network growth but are planned to reflect system replacements, additions and refurbishments as well as non-system asset requirements over the regulatory period.

SPI PowerNet states that it has focussed on cost reduction and the absorption of excess network capacity. However, system conditions have altered over the last eight years and the system is now more stressed. The diminishing remaining technical life of its equipment and a significant increase in peak summer load are two major reasons for the change which has lead to a recent increase in expenditure, which is expected to continue over the next 20 years.

In view of its forecast requirements, SPI PowerNet proposes capex totalling $369.7 million (nominal), or $329.5 million (average 2001/02$) over the period 1 January 2003 to 31 March 2008.

SPI PowerNet has commenced a major asset replacement program including the rebuilding of terminal stations (which commenced in 2001 and is scheduled to continue until 2017). Under its capex planning program, system asset replacement is based on a forecast of assets that will reach the end of their expected technical lives during the regulatory period. System additions and refurbishments are undertaken in

response to factors such as environmental requirements or equipment condition analysis.

Non-system assets are included in capex plans and cover assets such as information technology and business support facilities. SPI PowerNet coordinates its capex plans with its maintenance plans.

Table 4.1 SPI PowerNet's forecast capex 2003 to 2007/08 (average 2001/02$m)[1]

	2002	2003	2003[3]	2004	2005	2006	2007	2008
System asset replacement	8.0	13.1	3.3	31.4	36.5	27.9	47.1	55.7
System additions[2] and refurbishments	5.7	55.7	11.7	27.3	20.7	15.8	15.8	9.7
Information technology	1.0	4.6	1.2	5.6	1.6	4.7	3.4	2.2
Business support facilities, equipment, vehicles and special tools and equipment	2.9	1.3	0.3	1.7	1.9	1.5	1.6	1.2
Total	**17.6**	**74.6**	**16.4**	**66.1**	**60.6**	**49.9**	**67.8**	**68.7**

1. Capex associated with VNSC is included, however it does not enter that RAB for return purposes until 1 January 2003
2. Additions are not augmentations, but small upgrades necessitated by changes, such as regulatory changes
3. This is data for a three-month period, 1 January 2003 to 31 March 2003
Source: SPI PowerNet forecasts - SPI PowerNet's Revenue Cap Application

SPI PowerNet's capex plans have identified that significant expenditure will be required on primary systems, including switchbays (28% of expenditure), and secondary system assets (22%) such as plant protection, control and monitoring systems. The Victorian Network Switching Centre (VNSC) is also scheduled for a major upgrade.

4.3.2 Major drivers of increased expenditure

SPI PowerNet identifies the age of its transmission network as the major driver of capex during the regulatory period. Network assets are now past mid-life on average and some will reach the end of their expected technical lives in the next six years. This will lead to a noticeable increase in capex when compared to the previous period. For example, terminal stations installed 40 to 50 years ago will soon require replacement.

SPI PowerNet also lists environmental remediation, technological change and increasing network utilisation as other drivers of increased capex in the coming regulatory period.

4.3.3 Carry-over of efficiency gains from the Tariff Order period

SPI PowerNet proposes a carry-over of capex efficiencies achieved from 1998 to 2002 when its revenue requirement was determined using the methodology specified in the Victorian Tariff Order. The value of the efficiency is calculated by annualising the savings and then glide-pathing this value over the regulatory period, 2003 to 2008.

4.4 Consultant's review

PB Associates was engaged by the Commission to analyse and comment on the assumptions, methodology and findings on capex contained in SPI PowerNet's application.

The main conclusions and recommendations of PB Associates' review are:

- While SPI PowerNet's application generally deals with capex at a high level, requiring further information to be sought in some areas, the information presented has been thoroughly prepared and is material to the application;

- SPI PowerNet has comprehensive and effective Asset Management procedures in place. Recommendations from Indec Consultants' 2001 report, which identified certain deficiencies, are being implemented progressively;

- The economic lives of assets established in the 1994 jurisdictional valuation indicate that major parts of the network have reached or are approaching the end of their lives. SPI PowerNet's capex program realistically reflects the future needs for replacement and refurbishment;

- Capex is higher for the 2003/08 regulatory period than it has been previously, although there has been a significant increase in 2002. A major capex program could possibly have started earlier but a detailed study would be necessary to determine if this would have been justified. SPI PowerNet has identified several factors driving the recent increase in forecast capex;

- The projects planned over the regulatory period are justified and appropriate. The 2004 financial year was examined in some detail and the expenditure found to be justified and realistic; and

- SPI PowerNet's capex plans for the replacement of relatively old systems with new technology are appropriate and should improve operation and maintenance.

Asset Management System effectiveness

SPI PowerNet's Asset Management Plan is made in accordance with key documents consisting of its Asset Management Strategy, Asset Condition Reports and Indec Consulting's Integrated Asset Management Review, 2002.

The Asset Management Strategy is a comprehensive and evolving document that incorporates performance targets, responsibilities for asset management, and reasons for replacement and refurbishing decisions. These decisions are made after evaluating a number of factors including incident reports, field reports, and information from the Maximo asset management information system. Age and physical condition of the

asset are considered along with other matters such as environmental requirements. SPI PowerNet's Business Review Committee considers matters costing $50,000 or more.

Increased expenditure

PB Associates notes in its review of SPI PowerNet's application that there is a step increase in capex from 2003 onwards compared to the preceding period. Its review discusses the reasons for this increase and makes the following findings:

Adequacy of expenditure

PB Associates believes that due to the ageing of assets and increased loads, SPI PowerNet's capex plans for the replacement and refurbishment of the existing system are conservative and reasonable. Additions to the system are also required to meet environmental and service standards.

Maintainability

PB Associates states that access to spare parts and manufacturers' support is necessary to system maintenance. Older equipment may have limited support available. SPI PowerNet's proposed capex is realistic with replacements necessary to ensure adequate spares and support are available to avoid lengthy out-of-service periods.

Expenditure scheduling

PB Associates states that SPI PowerNet has already commenced a major capex program from the 2002/03 financial year and this will continue throughout the regulatory period, 2003 to 2007/08. The increased expenditure is carried out under SPI PowerNet's Asset Maintenance Strategy and takes into account circuit breaker and transformer age profiles, environmental remediation requirements, recent technological developments, and increased requirements on SPI PowerNet to coordinate terminal station and connection asset upgrades. It would take a detailed study to determine whether an earlier start to major capex projects would have been justified.

Effectiveness

PB Associates believes that SPI PowerNet's capex program is amply justified and reasonable. Savings could be possible but may be outside SPI PowerNet's control, such as exchange rate fluctuations. There is no indication that SPI PowerNet is proposing ineffective or unnecessary expenditure.

Analysis of 2003/04 projects

PB Associates also analysed specific projects for 2003/04 as part of its overall review of SPI PowerNet's proposed capex. Assets associated with approximately 50 per cent of the primary projects were assessed. The replacements were largely driven by the age of the equipment. PB Associates summarises the replacements scheduled for 2003/04 as reasonable in light of the age of the assets. The few relatively early replacements are also considered reasonable due to their particular function, such as capacitor switching.

4.5 Initial submissions by interested parties

SPI PowerNet's response to PB Associates' capex report

SPI PowerNet comments that PB Associates' comparison of historic and forecast capex from 1995 to 2008 is based on the date the assets were commissioned. SPI PowerNet emphasises that this does not reflect the progressive spending made each year. For example, for a large project that spans two years such as the replacement of ground wire with OPGW between Melbourne and Wodonga, the full value is captured in 2002/03 although more than one third of the expenditure occurred in 2001/02. Calculated on an accruals basis, capex for 2001/02 was $34.1 million, rather than the $17.6 million noted in SPI PowerNet's application (which used the date of commissioning).

SPI PowerNet also does not agree with PB Associates' statement that there is little incentive for a TNSP to advance major capex projects under the current regulatory regime, "unless the expenditure is part of earlier proposals and there could be some prospect of efficiency gains." SPI PowerNet points out that it has "contractual and regulatory obligations to provide transmission services in accordance with good electricity industry practice and a range of service benchmarks."

Submissions by other parties

The EUAA highlights the need for PB Associates to examine SPI PowerNet's capex proposal in detail. EUAA also raises questions concerning the timing of expenditure and the amount of the efficiency carry-over claimed.

VENCorp notes that PB Associates' report found that there is no indication that SPI PowerNet is proposing to spend ineffectively or unnecessarily. However, VENCorp also believes that the Commission should assure itself whether there has been a deferral of replacement expenditure over the first regulatory period. It states that the Commission should also establish more effective regulatory mechanisms in relation to SPI PowerNet's capex to ensure efficiency and that the Commission should assess the potential for efficiency gains to be made in the coming regulatory period.

The EUCV comments that SPI PowerNet's application provided insufficient information to allow proper assessment of its application and also found that the additional information provided by PB Associates' review was still insufficient for its purposes.

4.6 Submissions on the draft decision

VENCorp comments that:

- It would prefer that more detailed information regarding SPI PowerNet's asset renewals and replacement program was made publicly available
- The Commission should clearly set out the efficiency carry-over arrangements to apply to capex from the 2008 reset.

The EUCV comments that SPI PowerNet has proposed a massive capex program and there is significant doubt that all projects will comply with the regulatory test. It also comments that there is considerable doubt as to the efficacy and appropriateness of the capex requested. The EUCV states that the Commission must put in place appropriate controls such as annual reviews.

In response to the EUCV's submission, SPI PowerNet comments that there is no reason under the system of incentive regulation for the Commission to annually review its capex for the purposes of either approving capex projects or making annual adjustments to the revenue cap. It also notes that under the Commission's Information Requirements Guidelines, SPI PowerNet will report its annual capex.

The EUAA comments that the final decision must include more information and better analysis of SPI PowerNet's past capex performance as well as more rigorous examination of its future proposals. It also states that the Commission must impose detailed reporting obligations on SPI PowerNet given its large and significantly expanded capex.

4.7 Commission's considerations

Based on PB Associates review, the Commission is satisfied that SPI PowerNet has developed a forward-looking Asset Management plan that identifies future asset replacement and refurbishment requirements.

The Commission notes that PB Associates examined the reasons for the step increase in capex from 2003 and found that, due to the ageing of assets and increased network loads, SPI PowerNet's capex plans were conservative and reasonable. PB Associates also concludes that SPI PowerNet's capex program is amply justified and reasonable and that there is no indication that SPI PowerNet is proposing ineffective or unnecessary expenditure.

The Commission notes that, in respect of lines and transformers, SPI PowerNet has responded to PB Associates' finding that it does not have an integrated management plan for these assets. SPI PowerNet has provided the Commission with specific details of its asset management program for lines and transformers that form part of its overall system expenditure plans.

Furthermore, the Commission is comfortable that SPI PowerNet's capex program realistically reflects its future needs for replacement and refurbishment of its ageing asset base. Environmental requirements are also important in driving expenditure.

The Commission notes that, in line with its Information Requirements Guidelines, SPI PowerNet will be required to provide annual details of capex variances or efficiencies that occur.

Increase in scope between the code and the previous Tariff Order regime

In the transition from the present Victorian regime to regulation under the code, the scope of SPI PowerNet's activities covered by the revenue cap will increase. This is due to the code's "non-contestable" transmission services covering a wider range of activities than were previously covered under the Tariff Order's "prescribed services".

Therefore, while SPI PowerNet's total revenue from both "non-contestable" and "contestable" sources will stay the same (providing there are no other changes), its revenue cap will increase due to the broadening in the scope of its regulated activities.

This increase in scope is important to bear in mind in any comparison of revenue and expenditure between the two regimes. For example, there will be a significant amount of capex required to upgrade the VNSC, which only enters SPI PowerNet's RAB from 1 January 2003.

Carry-over of efficiency gains from the Tariff Order period

The Commission has stated in its draft *Regulatory Principles* that:

> "the regulated TNSP is invited to demonstrate at each regulatory review that any capital expenditure below forecast levels has arisen because of management induced efficiency gains. Where it is clearly demonstrated by the TNSP that capital expenditure shortfalls have resulted because of management efficiencies or innovation, the capital expenditure efficiency gains may be subject to a glide path, similar to operations and maintenance expenditure. If the regulated TNSP does not clearly demonstrate the case for retaining efficiency gains, then a full P_0 adjustment is more likely to be applied to the capital expenditure linked component of cost reductions."

SPI PowerNet's proposed capex efficiency claims have been analysed by the Commission as it must ensure, in an incentive-based regime, that it provides TNSPs with appropriate incentives to deliver cost-effective outcomes. The draft *Regulatory Principles* foreshadowed the use of a glide path for management induced capex efficiency gains as part of a benefit sharing mechanism. A glide path will enable the Commission to reduce the above normal rate of return earned by the regulated TNSP to a normal level within a specified period.

The Commission believes that a glide path for efficiency gains over a time period commensurate to that of the regulatory decision would provide an appropriate level of benefit sharing between the TNSP and its customers. However, the Commission will retain discretion over setting the number of years that the TNSP can retain these efficiencies.

In the Commission's view, this mechanism of benefit sharing will generate the appropriate incentives for TNSPs to pursue management-induced efficiencies and limit the opportunity for possible gaming of the regulator. This issue of efficiency gains and benefits sharing will be further reviewed in line with the development and finalisation of the Commission's *Regulatory Principles*.

Proposed capex efficiency carry-over for 2003 – 2008

The Commission has considered the information SPI PowerNet has provided regarding its capex cost savings from 1998 to 2002. As stated in its draft *Regulatory Principles*, a TNSP must provide clear evidence that capex savings are the result of management induced efficiencies for them to be the subject of a glide path in the following regulatory period. In that regard, the Commission is not satisfied that this is the case. The Commission considers the information supplied by SPI PowerNet is not conclusive evidence of management induced efficiencies or is more applicable to opex cost savings. Therefore, the Commission has decided to treat the capex savings as a windfall gain accruing to SPI PowerNet from 1998 to 2002 and subject to a P_0 adjustment at the beginning of the 2003 – 2008 regulatory period. That is, an efficiency carry-over amount has not been granted for the period.

Proposed capex efficiency carry-over for 2008 onwards

As per it Information Requirements Guidelines, the Commission will monitor SPI PowerNet's annual capex and will undertake a full assessment of its actual capex at the next regulatory reset. Where underspending has occurred, the Commission will consider claims of efficiency gains in determining any appropriate adjustment. In that respect, the Commission is currently considering a proposal from SPI PowerNet in relation to the efficiency carry-over mechanism for the 2008 regulatory period onwards, and intends to outline its views in the final *Regulatory Principles* to be released in 2003. The Commission notes that its treatment of capex savings achieved from 1998 –2002 does not pre-empt its considerations of the proposals for 2008 onwards, as these proposals are formulated under an entirely new framework.

Scope for future efficiency gains

The Commission notes that a range of factors may affect the actual capex costs experienced during the regulatory period, including the progressive implementation of Indec Consulting's recommendations, unforseen technological change and exchange rate fluctuations on imported equipment. It would therefore expect further efficiency gains to be made in capex over the period.

Minor augmentation (shared network) allowance

At VENCorp's request, SPI PowerNet proposes to amend its application to include an annual allowance of approximately $1 million for minor augmentations required by VENCorp over the regulatory period. The projects are small, separately contracted, non-contestable works usually of less than $100,000 in capital value. The main Network Agreement between SPI PowerNet and VENCorp would be amended to implement the scheme.

The Commission has considered the administrative savings of such a scheme and grants the capex allowance requested.

Treatment of refurbishment expenditure

In its submission on the draft revenue cap decision, SPI PowerNet states that in the absence of an indication from the Commission as to how it intends the Regulatory Asset Base (RAB) to be set from 2008, it must request that all refurbishment capex in its application be reclassified as opex. SPI PowerNet would take this measure as a means of protecting its investment.

The Commission intends to preserve its options regarding the treatment of the RAB from 2008 and is therefore not in a position to give a binding undertaking at this time. However, it does recognise the need for SPI PowerNet to manage its risks, including the risk of optimisation. Therefore, in accordance with its ElectraNet SA revenue cap decision, the Commission proposes to treat refurbishment capex as a separate line item and:

- Quarantine the amount against optimisation for 10 years
- Depreciate the amount over the same period, recognising that its value may be extinguished well before the life of the original asset.

The above treatment is subject to the condition that:

- SPI PowerNet undertakes appropriate regulatory evaluation procedures similar to those for other new investments before spending (for example, the regulatory test); and
- Maintains records in such a way that the refurbishment can be identified to the asset.

4.8 Conclusion

Based on the Commission's analysis of forecast capex and PB Associates' review of SPI PowerNet's Asset Management Plan, including its analysis of particular projects scheduled for 2003/04, the Commission concludes that SPI PowerNet's capex proposal is appropriate in the circumstances. The Commission has taken into account that SPI PowerNet's capex requirement is limited to the replacement or refurbishment of assets, and does not encompass network growth projections.

Accordingly, the Commission will allow capex, including a minor augmentation allowance, of $378.64 million (nominal) over the regulatory period as detailed below:

Table 4.2: SPI PowerNet capex: 1 Jan '03 to 31 Mar '08 (nominal $m, excl GST)

	Q1 2003	2004	2005	2006	2007	2008
Total capex	**17.61**	**72.96**	**68.34**	**57.62**	**79.72**	**82.39**

The following table compares the total capex originally claimed against the final amount allowed:

Table 4.3: Comparison of capex claimed and allowed (nominal $m, excl GST)

SPI PowerNet Application	Draft Decision	Final Decision	Reasons
$369.7	$360.22	$378.64	Allowances included for: • minor augmentations • interest during construction • inflation of claim from 2001 to 2003

5 Operating and maintenance expenditure

5.1 Introduction

The Commission, as part of its process for determining SPI PowerNet's MAR, will assess SPI PowerNet's capacity to achieve realistic efficiency gains in its proposed opex with regard to future demand and service quality. Opex is also an important source of savings and productive efficiencies over the short to medium term as it represents a large proportion of SPI PowerNet's variable costs.

The Commission will focus on SPI PowerNet's use of benchmarking, based on domestic and international best practice, as a guide to setting, testing and adjusting targets in the planning and management of opex programs. In addition, the Commission will consider whether or not SPI PowerNet has adopted an appropriate balance between opex and capital expenditure. Finally, efficient opex is a key source of the overall productivity gains that the Commission will consider in determining the incentive outcomes for SPI PowerNet's revenue cap.

The remainder of this chapter:

- sets out the requirements of the code (section 5.2);
- summarises the Commission's decision concerning the appropriate level of opex to be allowed in the present regulatory period as well as the information considered by the Commission in arriving at that conclusion. This includes:
  - SPI PowerNet's opex proposal for the regulatory period (section 5.3);
  - a summary of the major findings of PB Associates' review (section 5.4);
  - submissions by interested parties (section 5.5);
- summarises submissions on the draft decision (section 5.6);
- sets out the Commission's considerations (section 5.7); and
- a summary of the Commission's conclusions in this regard (section 5.8).

5.2 Code requirement

The Commission's task in assessing SPI PowerNet's opex is specified in the code. In particular, Part B of Chapter 6 of the code requires *inter alia* that:

- in setting the revenue cap, the Commission must have regard to the potential for efficiency gains in expected operating, maintenance and capital costs, taking into account expected demand growth and service standards; and
- the regulatory regime must seek to achieve an environment which fosters efficient use of existing infrastructure, efficient operating and maintenance practices and an efficient level of investment.

To undertake its task, the Commission needs to make informed decisions on the adequacy, efficiency and appropriateness of the opex planned by SPI PowerNet to meet its present and future service requirements. To this end the Commission engaged PB Associates to review SPI PowerNet's opex program. The results of PB Associates' review are summarised in section 5.4.

5.3 SPI PowerNet's original application

5.3.1 Forecast opex

SPI PowerNet's application outlines opex totalling $402.7 million (nominal) or $360 million (average 2001/02$) for the period 1 January 2003 to 31 March 2008. SPI PowerNet submitted a variation to its forecast opex on 31 May 2002 as a result of updated cost allocation data based on its audited (statutory) accounts for the period 1 April 2001 to 30 March 2002.

A bottom-up analysis is used to forecast opex and capex requirements. SPI PowerNet's Asset Management Strategy and associated policies provide short, medium and long-term expenditure forecasts, which are used to produce maintenance and capital plans.

SPI PowerNet notes that the increase in forecast opex under the regulatory period is largely due to the change in the scope of services going from the Victorian Tariff Order regime to the National Electricity Code regime (discussed in Chapter 3 of SPI PowerNet's application).

SPI PowerNet categorises opex into 3 types:

- system recurrent expenditure – regular activities, eg. plant maintenance;
- system non-recurrent expenditure – one-off programs, eg. corrosion abatement; and
- non-system expenditure – eg. corporate support functions.

SPI PowerNet states that each type of expenditure has individual drivers in relation to cost and efficiency. As with capex, the ageing of the transmission network is the single most important driver of increased expenditure. Increasing network utilisation is also responsible for increased opex, for example, out-of-hours work required to deal with scheduled outages. Approximately 80 per cent of SPI PowerNet's forecast opex is attributable to system expenditure.

System – recurrent expenditure

Routine system maintenance is the major cost in this category (49 per cent). Other costs include system operations, which encompasses the VNSC (8 per cent), rebates paid to VENCorp (14 per cent), taxes and leases (10 per cent) and support (11 per cent). Routine maintenance costs are expected to remain fairly static over the regulatory period.

System – non-recurrent expenditure

This category consists of one-off costs that will vary significantly from one regulatory period to another. Major activities scheduled between 2003 and 2007/08 include corrosion abatement plans, repair of equipment fleets, upkeep of terminal station buildings and grounds, and condition assessments, which are required due to the ageing asset base.

Non-system expenditure (including uninsured risks)

This category consists of corporate support functions and includes finance, HR, IT and a provision for uninsured risks. Uninsured risks are risks that SPI PowerNet cannot insure cost effectively and for which it does not otherwise receive compensation. An actuarial assessment was commissioned from Trowbridge Consulting who analysed the costs of bearing such risks. The major components of uninsured risks that were identified are liability insurance ($248,000), easement disputes with landowners ($175,000), and the costs of handling public liability claims ($100,000).

5.3.2 Cost allocation

SPI PowerNet states that assets are tagged according to whether revenue-capped or non-revenue-capped services are provided. Direct maintenance expenditure on each asset is tracked accordingly. Overheads are allocated using a hybrid activity-based marginal costing approach. SPI PowerNet considers this is an appropriate approach in the circumstances as 3 per cent of its business relates to non-revenue-capped services.

5.3.3 Opex cost benchmarks

In regards to controllable opex costs, SPI PowerNet notes that ESAA data shows that its average controllable opex cost rate is 40 per cent less than the average of the peer group. SPI PowerNet states that its position has been achieved by significant cost cutting while still maintaining the highest levels of network performance. However, SPI PowerNet notes that further substantial efficiencies are unlikely due to the increasing age and utilisation of the network necessitating increased expenditure in future.

SPI PowerNet commissioned an assessment of its opex costs - Indec Consulting's *Stand-alone Cost Model Final Report* August 2001 - as a further check of the efficiency of its opex performance. The model benchmarks controllable costs and applies industry best practice benchmarks in its analysis.

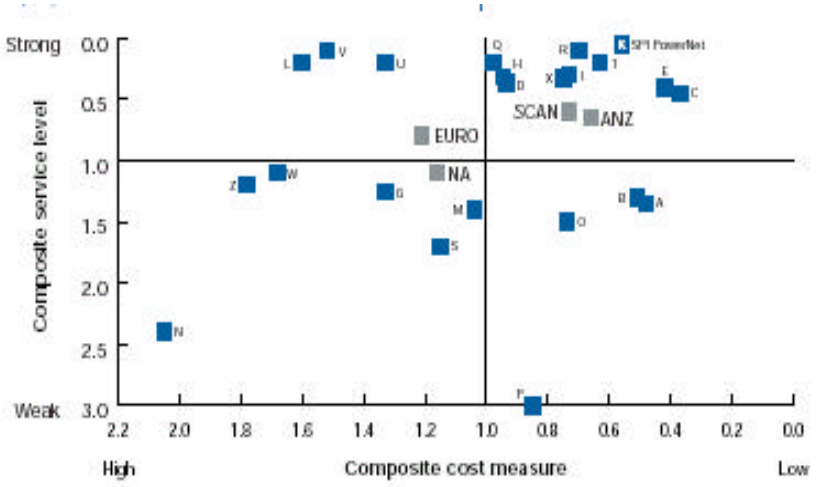
The report found that:

- SPI PowerNet has the highest level of reliability in Australia while maintaining a low level of opex costs;
- SPI PowerNet is well below the industry average level of opex;
- SPI PowerNet has the most efficient level of opex in the transmission industry relative to throughput, capacity, and level of reliability; and
- on a total cost basis, SPI PowerNet is well below the industry average.

Notwithstanding its low opex costs, SPI PowerNet notes that benchmarking studies confirm that network service performance has not been diminished. In terms of circuit availability, SPI PowerNet is the leading performer in Australia according to ICTPS and ESAA data provided in its application.

SPI PowerNet notes that the ITOMS study demonstrates that SPI PowerNet is also a leading transmission business internationally.

Figure 5.1 Transmission line maintenance composite benchmark



1 Includes overhead line patrol and inspection 100–199 kV (8.2%), overhead line maintenance 100–199 kV (23.7%) and 200+ kV (21.2%), right-of-way maintenance (38%) and pro-rated support services costs

2 SPI PowerNet is company K

Source: International Transmission Operations & Maintenance Study 2001 (rules require results to be masked)

Composite performance benchmarks indicate that SPI PowerNet is equally efficient in relation to substation operations and maintenance.

5.3.4 Carry-over of efficiency gains from the Tariff Order period

SPI PowerNet proposes a carry-over of opex efficiencies achieved from 1998 to 2002 when its revenue requirement was determined using the methodology specified in the Victorian Tariff Order. The value of the efficiency is calculated by annualising the savings and then glide-pathing this value over the regulatory period, 2003 to 2008.

5.3.5 Pass-throughs for identified events

SPI PowerNet proposes a pass-through arrangement in respect of four identified events:

- Service standards event – changes to the scope, standard or risk of the revenue capped services due, for example, to changes to the Code;

- Change in taxes event – changes in the way or rate at which a relevant tax is calculated or the imposition of a new tax;
- Terrorism event – an act of terrorism, which includes threats of terrorism; and
- Insurance event – changes in the availability and extent of cover and cost of insurance relative to that forecast as part of the revenue cap.

5.4 Consultant's report

PB Associates was engaged by the Commission to undertake a review which analyses and comments on matters in relation to the contribution of opex to SPI PowerNet's delivery of transmission services.

5.4.1 Summary of findings

The main findings of PB Associates' review are summarised below:

- the significant increases in opex from 1998 to 2003/04 are due to a range of matters including the transfer of VNSC to SPI PowerNet and adjustments to the transmission circuit availability incentive scheme with VENCorp (rebate scheme);
- SPI PowerNet is showing an increasing trend in opex (over the regulatory period) after achieving significant opex reductions in earlier years ($60m cumulative from 1995/96 to 1999/200). This is due to increasing asset age and changes in business scope for regulatory purposes.
- asset management practices are considered effective although there would appear to be some potential for further improvement which could result in further cost savings.
- cost allocations between regulated and unregulated business segments and the treatment of common costs and overheads are considered appropriate;
- the Indec Consulting review placed SPI PowerNet in the highest 10 per cent of organisations reviewed. SPI PowerNet has established a range of initiatives to address the deficiencies identified in the review;
- asset replacement is capitalised if a complete asset recorded on the asset register is replaced or if the service life or efficiency/economy of operation of the asset unit, not just the replaced component, is significantly improved;
- maintenance cost forecasts are based on detailed analysis and equipment condition information and are considered appropriate;
- forecast non-recurrent maintenance expenditure such as tower painting is considered appropriate;
- costs associated with the transfer of VNSC to SPI PowerNet, the rebate scheme with VENCorp, and taxes and leases are considered appropriate;

- SPI PowerNet's exposure to the $6 million rebate scheme with VENCorp should reduce with increased equipment availability such as additional strategic spares;
- SPI PowerNet has proposed $0.8 million pa for non-insured risk identified events such as liability claim insurance and easement disputes;
- SPI PowerNet is one of the top performers in the ITOMS study and has made significant improvements.

5.4.2 Establishing operating expenditure

PB Associates notes that SPI PowerNet develops its budgets using an expected value approach. The relative proportions of each category are: deterministic expenditure (70 per cent), probabilistic expenditure (22 per cent), risk provision (6 per cent) and contingency provision (2 per cent) SPI PowerNet has proposed that certain events will be dealt with via a pass through mechanism, such as terrorism, and has therefore not made a specific provision for such costs.

PB Associates states that the 6 per cent risk provision for identified events includes $0.8 million pa for non-insured risks. This includes amounts for liability claim insurance, easement contractual disputes and handling public liability claims. PB Associates concludes that Trowbridge Consulting's approach to quantifying the revenue provision for such risks seems reasonable. There is also an allowance claimed of $0.3 million for self-insurance of towers and wires based on an actuarial assessment by Trowbridge Consulting.

PB Associates states that the 2 per cent contingency provision for unidentified events makes allowance for events that cannot be passed through and are not covered by specific risk provisions. SPI PowerNet's application did not identify specific risks but SPI PowerNet subsequently provided examples of potential expenditure that may arise, eg. replacement of assets before their classified life. However, these costs are classified as depreciation and not as opex. PB Associates has been unable to assess whether the provision is reasonable or to confirm that the risks have not been covered in other provisions of SPI PowerNet's application. The provision for risk seems to have been comprehensively covered.

5.4.3 Asset management practice s

PB Associates states that the Asset Management Strategy provides high-level guidance for the development of opex and capex programs. It sets out broad strategies and policies and a wide range of information is input to formulate maintenance and capital forecasts. Maintenance and capital plans are then developed. PB Associates notes that detailed plans have not been established for some key assets such as transmission lines and transformers. SPI PowerNet uses the ITOMS studies to review and update its opex practices.

PB Associates states that the recent Indec Consulting review may lead to efficiencies not presently allowed for in SPI PowerNet's expenditure forecasts. SPI PowerNet is currently implementing Indec Consulting's recommendations, including post project reviews for all projects over $0.5 million and the extension of the Maximo

maintenance management system. PB Associates considers that the proposed improvements are likely to lead to further cost savings.

5.4.4 Accounting practices

Capitalisation policy

PB Associates notes that SPI PowerNet has continued with the same capitalisation policy since the transmission business was privatised in 1997. In general, expenditure is capitalised if it:

- replaces the existing asset/component with an asset/component that increases the functionality or capacity of the system;
- replaces the existing asset/component with a new asset/component that extends the service life of the system beyond its expected service life; or
- significantly reduces ongoing maintenance expenditure.

Cost allocation

PB Associates notes that SPI PowerNet uses the Oros system to allocate costs between the regulated and unregulated lines of its business. The Maximo costing system identifies direct and indirect costs. Centralised costs such as HR and IT are allocated using drivers that represent usage. Overheads that cannot be fully allocated to a particular part of the business are allocated to the regulated business on the basis that only 3 per cent of SPI PowerNet's business is from non revenue-capped services.

PB Associates considers that a suitable cost driver, such as the proportion of the asset base in each part of the business, should be used to make such allocations. SPI PowerNet advises that this would increase the revenue capped allocation by $110k.

5.4.5 Performance comparisons

PB Associates notes that the change in relative position is as important as the absolute comparison. There have been $60 million nominal cost savings from 1995/96 to 1999/00, much of it due to a 50 per cent reduction in staff numbers. The initiatives taken over the period achieved real savings. However, costs are now increasing primarily as a result of the ageing asset population.

5.4.6 Benchmarking studies

Approximately 20 international transmission companies participate in the ITOMS survey, which is conducted every two years. PB Associates notes that the results below indicate that SPI PowerNet has made significant improvements and is now a best performer for substations and lines, surpassing the Australian average.

Figure 5.2 ITOMS composite substation performance

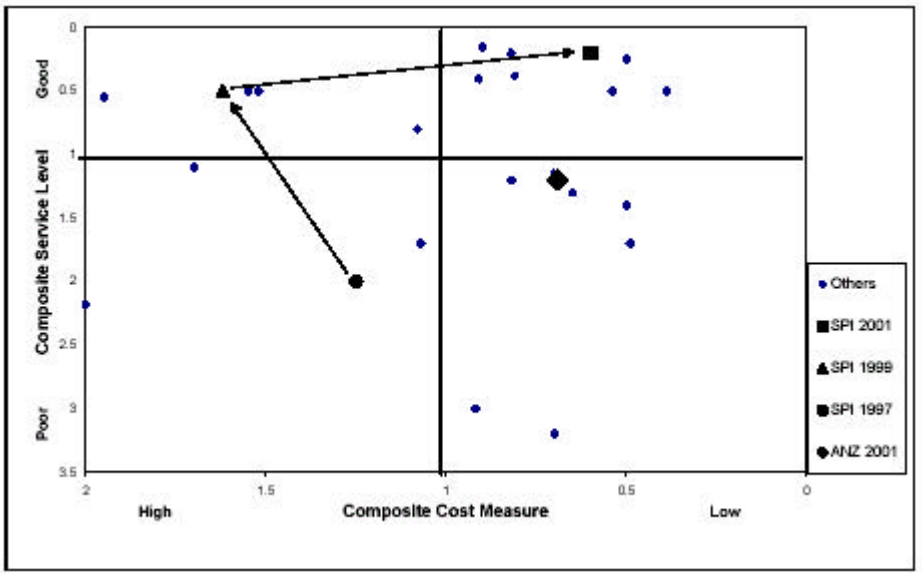
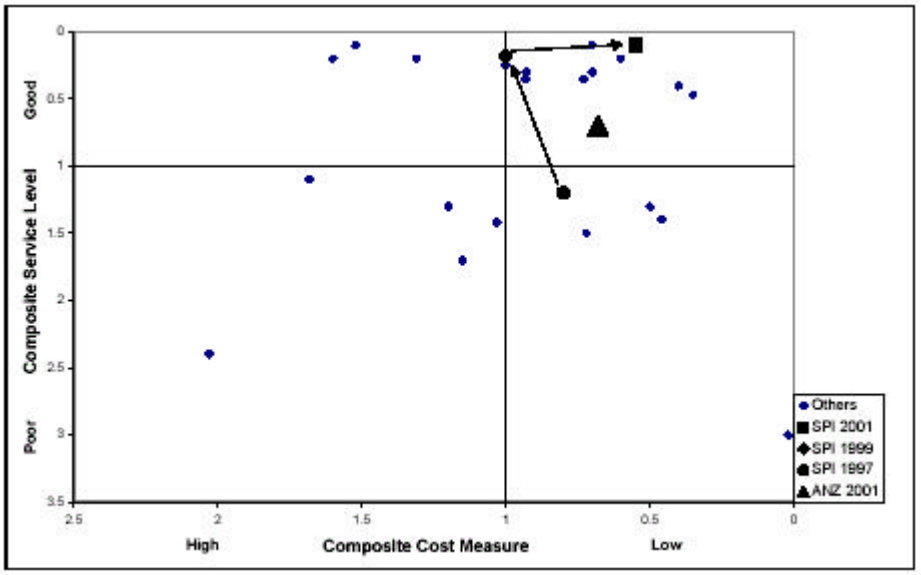


Figure 5.3 ITOMS composite line performance



5.5 Initial submissions by interested parties

5.5.1 SPI PowerNet's response to PB Associates' report

SPI PowerNet states that there is no support for PB Associates' claim that there is a lack of integrated asset management plans, particularly for lines and transformers. SPI PowerNet maintains that there is no danger that assets will not be properly maintained.

As evidence, SPI PowerNet has provided details of its integrated Asset Management approach to these assets. For example, lines are subject to routine patrols and inspections with recurrent maintenance performed on a programmed basis. Condition assessments are also performed on selected lines. All information is fed into the decision making process for non-recurrent opex and replacement expenditure. A thorough evaluation is made before committing expenditure and will often involve discussions with connected parties and VENCorp. A similar process is carried out for transformers.

SPI PowerNet also notes that Indec Consulting did not reach the same conclusions as PB Associates. SPI PowerNet anticipates preparing a comprehensive document that will make linkages between its Asset Management Strategy and various expenditure plans more apparent and verifiable.

PB Associates stated that a suitable allocator of indirect costs between the contestable and non-contestable parts of SPI PowerNet's business was asset value. SPI PowerNet points out that, consistent with clause 3.3 of the Commission's Information Requirements Guidelines, the basis of allocation is avoidable cost.

SPI PowerNet states that the effect of system related opex and capex on the quantum of rebates payable to VENCorp is likely to be immaterial for a variety of reasons, including the fact that expenditure increases are largely related to maintaining current levels of performance, rather than increasing them. SPI PowerNet emphasises that the intention of the rebate scheme is to change behaviour related to outages and not to fund opex or capex initiatives. The rebate scheme functions to provide operational incentives.

PB Associates stated that it was not able to assess whether the 2 per cent contingency provision is reasonable or to confirm that the risks have not been covered in other provisions in SPI PowerNet's application. SPI PowerNet states that risk provisions and pass-through rules have been formulated for identified events. It believes making a contingency provision for unidentified events is prudent and it would appear that PB Associates has no issue with this in principle. SPI PowerNet states that the contingency provision, by its very nature, is an estimate of the probable value of items not captured in its bottom-up forecasting. SPI PowerNet also believes that the quantum of the provision is minor in the context of the overall opex and capex programs and could have been higher without a rigorous forecasting process in place.

5.5.2 Other responses by interested parties report

The EUAA states that SPI PowerNet's proposed opex appears modest and reasonable when compared to its asset base. The EUAA believes opex should be benchmarked, as it is the only controllable network cost.

The EUCV states that the increased opex claimed does not demonstrate that SPI PowerNet's performance will also be enhanced. It therefore recommends that SPI PowerNet's opex should be maintained at current levels. EUCV notes that additional information supplied to PB Associates has not been made available to interested parties. The EUCV also notes that the review does not recommend that possible future cost savings should be built into the opex structure, or that the opex budget should be reduced accordingly. In regard to the benchmarking studies, EUCV noted that PB Associates failed to note that SPI PowerNet's past performance as measured in the ITOMS data was achieved with significantly lower capex and opex programs than with what is being proposed. Finally, EUCV notes that PB Associates' review does not compare budgeted opex with the opex actually spent.

Powerlink states that any comparison of opex with other TNSPs should be based on the combined costs of SPI PowerNet and VENCorp. Powerlink has made suggestions to modify PB Associates' report to show the combined opex of those bodies, as it believes it is more relevant for comparison purposes with other TNSPs. Although this would not alter the conclusions regarding SPI PowerNet's level of efficiency, Powerlink believes that it would increase the robustness of the report.

VENCorp agrees that SPI PowerNet should benefit from genuine efficiency gains and notes that the ESC has undertaken considerable analysis of this area, including the design of effective carry-over mechanisms. VENCorp submits that the Commission should undertake a detailed analysis of incentive arrangements as part of its revenue cap determination, as well as setting out the arrangements to be applied for the 2008 reset.

The EAG agrees with the need to provide for adequate spare parts in view of the refurbishment required for ageing assets. However, it believes the $75,000 amount claimed for SPI PowerNet's senior executive replacement program should not be allowed.

5.6 Submissions on the draft decision

SPI PowerNet in its response to the draft decision makes the following comments:

- the allowance for self-insurance should be included in the final decision because it has agreed to meet the Commission's requirements;
- the scope of self-insurance risks is predicated on the proposed RAB roll-forward arrangements and pass-through rules being accepted;
- the proposed efficiency carry-over for capex and opex savings achieved from 1998 to 2002 should be allowed;

- NERA's proposed design for an efficiency carry-over mechanism from the 2008 reset should be allowed (note: the NERA report was submitted to the Commission after the release of the draft decision);

- the allowance for equity raising costs should be included in the final decision; and

- the Commission should accept SPI PowerNet's proposed pass-through rules, subject to minor modifications, in the final decision.

VENCorp comments that the Commission's view on the proposed efficiency carry-over arrangements relating to cost savings achieved from 1998 to 2002 should be clarified in the final decision.

The EUCV comments that the Commission has failed to analyse SPI PowerNet's past opex benchmarks and has not costed the impact of reasons for requiring additional opex. It also states that the Commission has not carried out in-depth cost comparisons by benchmarking.

In response to the EUCV's submission, SPI PowerNet comments that the EUCV approach is over-simplistic in so far as it assumes that total opex should be decreasing over time regardless of other factors such as the ageing of the asset base. SPI PowerNet also questions the EUCV's reading of PB Associates' opex review. Overall, SPI PowerNet believes that EUCV's conclusions are erroneous.

Bob Lim & Co and Headberry Partners P/L, in a joint submission, comment that there was a lack of rigour in the benchmarking activities carried out. They argue that rigorous international benchmarking is required, rather than benchmarking within the same few businesses in Australia.

The EUAA comments that it is essential that the Commission:

- closely evaluates SPI PowerNet's performance in the first regulatory period;

- closely scrutinises SPI PowerNet's forecasts for the coming regulatory period, including through competent benchmarking;

- sets "challenging but achievable" performance and revenue benchmarks;

- establishes an effective arrangement to pass through to end-users efficiencies achieved so far.

The EUAA comments that the draft decision is of limited use in all of the above.

5.7 Commission's considerations

The Commission is satisfied that PB Associates thoroughly reviewed the methodology and underlying assumptions employed by SPI PowerNet in forecasting opex which was found to be reasonable and appropriate. PB Associates' examination of the classification of opex was also comprehensive and detailed.

Increase in scope between the Code and the previous Tariff Order regime

As noted in its capex considerations, the Commission is aware of the increased scope of services now covered by the revenue cap when compared to the previous Tariff Order regime. Cost comparisons between the regulatory regimes have been carried out with this increased scope in mind.

5.7.1 Forecasting opex

SPI PowerNet requested a provision for opex that increases by 2.5 per cent over the regulatory period. PB Associates found the increased opex was largely due to the age of SPI PowerNet's assets. PB Associates assessed the proposed figures and methodology used in SPI PowerNet's forecast opex.

The Commission notes that PB Associates' review found SPI PowerNet's recurrent and non-recurrent maintenance cost forecasts to be appropriate, as well as the 2 per cent salary increase claimed in its application.

The review also found a comprehensive cost allocation system in place with an appropriate treatment of common costs and overheads.

5.7.2 Benchmarking

SPI PowerNet provided information regarding its performance across a range of opex and network performance benchmarks, both nationally and internationally.

The Commission notes PB Associates' review of Indec Consulting's Stand-Alone Cost Model Report which confirmed that SPI PowerNet's total costs are below the industry average, and that SPI PowerNet has the most efficient level of opex in the transmission industry relative to throughput, capacity and reliability level.

PB Associates also reviewed ESAA information comparing SPI PowerNet's opex on a "per asset" and "per MWh" basis with other TNSPs. It found SPI PowerNet was comparable with Powerlink and more efficient than TransGrid.

The results of the ITOMS studies were also examined by PB Associates which found that SPI PowerNet has made significant improvements and is now a best performer internationally for both substations and lines. PB Associates concluded that independent benchmarks show SPI PowerNet to be a very efficient transmission operator.

The Commission is satisfied with the level of international and domestic benchmarking undertaken which establishes SPI PowerNet' opex costs as efficient across a range of criteria.

5.7.3 Scope for future efficiency gains

The Commission notes that PB Associates believes further cost savings may be possible as a result of implementing Indec Consulting's Asset Management review recommendations. However, SPI PowerNet believes that, due to its strong cost reduction program to date, only innovation will lead to significant cost savings and this is unlikely to occur during the current regulatory period.

Increased opex costs

SPI PowerNet states that a significant reason for the increase in opex is the expansion in the scope of its regulated business, such as the transfer of the Victorian Network Switching Centre to its asset base from 1 January 2003. The ageing of the asset population is also a key reason for increased opex. The Commission notes that PB Associates' review found SPI PowerNet's forecast opex to be appropriate given the age of the assets and other identified drivers of expenditure.

The Commission has considered the following expenditure items further in determining SPI PowerNet's opex requirements over the regulatory period:

Non-insured/self-insured identified risks

- SPI PowerNet has claimed an allowance for non-insured risks of $0.8m pa for identified events based on an actuarial assessment by Trowbridge Consulting. The major non-insured risks identified are liability insurance ($248,000), easement disputes with landowners ($175,000), and the costs of handling public liability claims ($100,000).

  In Trowbridge Consulting's view, these are diversifiable risks and therefore no allowance should be made for them in SPI PowerNet's asset beta. However, it would normally be expected that diversifiable risks are also insurable risks. Trowbridge Consulting states in its report that it was unable to obtain quotes for some of these risks.

- SPI PowerNet has also claimed an allowance for self-insurance of towers and wires of $355,000 pa based on an actuarial assessment by Trowbridge Consulting. SPI PowerNet previously insured these assets externally but there have been recent premium increases and changes in policy conditions.

Trowbridge Consulting states in its report that businesses commonly limit the amount of insurance purchased externally for reasons including the cost and availability of the insurance. SPI PowerNet believes that this is an efficient practice as it balances the cost of risk management against the expected value of the loss. SPI PowerNet has confirmed that it will not seek pass-through for events involving identified non-insured or self-insured risks unless the pass-through rules clearly cover the event.

As a general matter, the Commission is required to apply an incentive based form of regulation under the code. After careful examination of the merits of self-insurance on efficiency grounds, the Commission has determined that the following matters must be established prior to considering a self-insurance application:

- confirmation of the board resolution to self-insure;

- a report from an appropriately qualified insurance consultant that verifies the calculation of risks and corresponding insurance premiums;

- relevant self-insurance details that unequivocally set out the categories of risk the company has resolved to assume self-insurance for. This would need to clearly establish what the insured events and exclusions are so as to avoid any future debate as to whether or not an event was a self insured one and form the basis for actuarial assessment noted above;

- a regulated entity's resolution to self-insure would also be expected to explicitly acknowledge the assumed risks of self-insuring (i.e. in the event of future expenditure required as a result of an insurance event such costs would not be recoverable under the regulatory framework as the relevant premiums would have already been compensated for within the operating and maintenance element of the allowed MAR and funded by users, eg if a 1 in a 100 year event occurs in year 1 then the business will need to have the financial ability to restore assets out of own resources).

Board resolution and corporate governance requirements are fundamental issues. Risk management strategy of an entity and approaches to events that could affect the overall risk profile of the entity are matters for Board consideration. This is important because it may require parent entity/shareholder support to self-insure and/or affect debt covenant requirements of lenders.

The Commission has considered SPI PowerNet's claim for an allowance for self-insurance as per the above guidelines. SPI PowerNet has satisfied the guidelines and its claim is approved subject to the exclusions detailed below.

Exclusion of certain items from SPI PowerNet's self-insurance claim

The Commission has considered SPI PowerNet's self-insurance claim with respect to the departure of key persons and the resultant business interruption and costs. The Commission would expect that a prudent business would ensure that the skill base of its staff is sufficiently broad to accommodate some unexpected staff movements. It considers this is a risk faced by all businesses.

Further, as a transmission business, the Commission considers it unlikely that there would be a significant disruption to SPI PowerNet's revenue flows. Therefore, in accordance with the Commission's approach in its recent GasNet decision, the proposed allowance of $75,000 pa is not accepted.

Similarly, the Commission does not consider it appropriate to grant an allowance for Employment Practices self-insurance. All businesses must comply with the relevant legislation covering such areas as harassment, unlawful discrimination and breaches of privacy. In accordance with the Commission's approach in its recent GasNet decision, the proposed allowance of $15,000 pa is not accepted.

Regarding the allowance of $385,000 pa sought for deductibles in current insurance policies held by SPI PowerNet, the Commission has decided that it is more appropriate that actual expenditures should be included in the pass-through mechanism as an Insurance Event, rather than as an allowance in the cash flows.

2 per cent contingency for unidentified risks

This amount covers events that cannot be anticipated and which are not covered by specific risk allowances or included in the pass-through rules. SPI PowerNet, in its reply to PB Associates' comments regarding its inability to confirm the reasonableness of the provision, stated that the consultant did not appear to have an objection to the contingency allowance in principle.

The 2 per cent provision amounts to approximately $1 million pa. SPI PowerNet believes this is a reasonable figure given the ageing transmission network. Previously unanticipated events cited include additional corrosion abatement expenses that make the amount claimed appear modest in SPI PowerNet's opinion.

In view of the potential cost increases that may occur but which cannot be predicted, the Commission acknowledges that a contingency allowance per se is reasonable and considers a 2 per cent provision as proposed by SPI PowerNet to be appropriate in the circumstances. However, the Commission will review this matter at the next revenue reset to assess the continued reasonableness of the quantum of the provision.

Allocation of overheads

PB Associates stated in its report that overheads that cannot be directly allocated to either the contestable or non-contestable part of SPI PowerNet's business should preferably be allocated using a suitable driver, such as the proportion of the asset base utilised in those parts of the business. In reply, SPI PowerNet stated that it has followed clause 3.3 of the Commission's Information Requirements Guidelines and has adopted a non-causal basis for allocating indirect costs. SPI PowerNet stated further that the basis of this allocation is avoidable costs which was justified given the immaterial scale of costs involved ($110,000). The Commission accepts the further information and explanation provided by SPI PowerNet.

5.7.4 Carry-over of efficiency gains from the Tariff Order period

The Commission has explained its approach to the carry-over of efficiency gains in Chapter 4 of this decision regarding capex cost savings. The same general considerations also apply to opex efficiency gains. The draft *Regulatory Principles* foreshadowed the use of a glide path of opex efficiency gains as part of a benefit sharing mechanism between TNSPs and customers. The Commission believes this will provide the right incentive structure for TNSPs in achieving an optimal balance between opex and capex.

SPI PowerNet's proposed opex efficiency claims have been analysed by the Commission as it must ensure, in an incentive-based regime, that it provides TNSPs with appropriate incentives to deliver cost-effective outcomes.

SPI PowerNet has provided information regarding its opex savings from 1998 to 2002. It utilises a bottom-up planning process to forecast opex requirements and largely attributes the opex cost savings over this period to significant management initiatives associated with rationalising workforce numbers and work practices review.

SPI PowerNet states that technology, such as the re-engineering of its business information systems, has played an important role in creating a culture of continuous improvement which was introduced into the company. A performance based culture exists embodying such measures as continuous innovation, process improvement and benchmarking of performance.

SPI PowerNet has supplied expenditure data in its application that compares actual opex against suitably modified benchmark opex data sourced from the Victorian Government's x-factor model.

After analysis of this information and the substantial savings achieved, the Commission has decided to adopt the glide path and opex savings proposed by SPI PowerNet in its application. This amounts to a total of $12.64 million which will be glide-pathed progressively over the regulatory period from 2003 to 2008.

As per its Information Requirements Guidelines, the Commission will monitor annually SPI PowerNet's opex and will undertake a full assessment of its actual opex at the next regulatory reset in 2008. Where underspending has occurred, the Commission will consider claims of efficiency gains in determining any appropriate adjustment.

As noted in Chapter 4, the Commission is currently considering SPI PowerNet's proposals regarding capex and opex efficiency carry-overs for 2008 onwards.

5.7.5 Pass-through events

SPI PowerNet proposes that the pass-through mechanism would operate for four categories of events: a change in taxes event, a service standards event, a terrorism event and an insurance event. The Commission considers that it is not unreasonable to allow a pass-through mechanism for these events as it can provide a cost-effective approach to dealing with uncertain future costs, but that certain details of the proposed pass-through arrangements should be amended as outlined below.

The Commission has given full consideration to SPI PowerNet's proposals regarding identified pass-through events and, consistent with its recent GasNet decision, generally approves such arrangements, with certain amendments. SPI PowerNet's proposed pass-through rules are detailed in Appendix G of its revenue cap application.

While the Commission has some concerns about the muting effect that a pass-through mechanism would have on incentives, it recognises that certain events are outside the control of SPI PowerNet. The pass-through arrangements are part of SPI PowerNet's overall risk management strategy.

In relation to the Change in Taxes Event, SPI PowerNet defines such an event as:

(a) a change in the way or rate at which a Relevant Tax is calculated (including a change in the application or official interpretation of Relevant Tax); or

(b) the imposition of a new Relevant Tax,

to the extent that the change or imposition:

(c) occurs after the date of the Determination; and

(d) results in a change in the amount SPI PowerNet is required to pay or is taken to pay (whether directly, under any contract or as part of the operating expenses or other cost inputs of SPI PowerNet's revenue cap) by way of Relevant Taxes.

SPI PowerNet then defines Relevant Tax:

Relevant Tax means any tax, rate, duty, charge, levy or other like or analogous impost that is:

(a) paid, to be paid, or taken to be paid by SPI PowerNet in connection with the provision of transmission services; or

(b) included in the operating expenses or other cost inputs of SPI PowerNet's revenue cap;

(c) and includes

(d) income tax, fringe benefits tax or capital gains tax;

(e) payroll tax;

(f) fees and charges payable to the Essential Services Commission for licences issued under the Electricity Industry Act 2000;

(g) council rates; and

(h) land tax,

and any tax or levy that replaces any of those taxes or levies.

The Commission considers SPI PowerNet's definition of a Change in Taxes Event to be inappropriate as it does not include a provision for the removal of a tax (making the approach asymmetrical). Accordingly, SPI PowerNet must amend the definition of a Change in Taxes Event in clause 3.1 so that (b) reads "the removal or imposition of a Relevant Tax".

The proposed definition of a Relevant Tax is broad, leading the Commission to consider the costs and benefits of excluding certain taxes from the pass-through mechanism as follows:

- income tax (or state equivalent income tax) and capital gains tax. The Commission considers that these should be excluded from the pass-through mechanism;

- Penalties and interest for late payment relating to any tax, rate duty, charge, levy or analogous impost. These items are within the control of SPI PowerNet and should therefore not be subject to pass-through. It is not in the interest of customers to incur these additional charges which SPI PowerNet is able to avoid entirely;

- Fees and charges paid or payable in respect of a Service Standards Event. The Commission considers that the pass-through of these costs may lead to a double counting of pass-through amounts which is not appropriate; and

- Stamp duty, financial institutions duty, bank accounts debits tax or similar taxes or duties. An assessment of these costs would be a large exercise. On a cost benefit basis, it would not be in the interest of SPI PowerNet to undergo such an exercise nor in the interest of customers.

In general, the Commission does not consider it appropriate to include the above tax items in the pass-through mechanism. It appears to the Commission that the inclusion of many of the items would not be in the interest of customers.

The Commission has determined that taxes such as fringe benefits tax, payroll tax, land tax, and municipal rates and taxes are legitimate taxes that would be incurred by a prudent service provider acting efficiently. These costs should be incorporated into the revenue cap.

On balance, the Commission concludes that SPI PowerNet must amend the definition of a Relevant Tax in clause 3.1 to read as follows:

Relevant Tax means any tax, rate, duty, charge, levy or other like or analogous impost that is:

(a) paid, to be paid, or taken to be paid by SPI PowerNet in connection with the provision of transmission services; or

(b) included in the operating expenses or other cost inputs of SPI PowerNet's revenue cap;

(c) but excludes

(d) income tax (or State equivalent tax) and capital gains tax;

(e) penalties and interest for late payment relating to any tax, rate duty, charge, levy or other like or analogous impost;

(f) fees and charges paid or payable in respect of a Service Standards Event;

(g) stamp duty, financial institutions duty, bank accounts debits tax or similar taxes or duties;

(h) any tax, rate, duty, charge, levy or other like or analogous impost which replaces the taxes and charges referred to in (c) to (f).

In relation to a Service Standards Event, SPI PowerNet defines such an event to mean:

A decision made by the Commission, the Essential Services Commission or any other Authority or any introduction of or amendment to an Applicable Law after the date of the Determination that:

(a) has the effect of:

(i) imposing or varying minimum standards on SPI PowerNet relating to revenue capped transmission services that are more onerous than the minimum standards applicable to SPI PowerNet in respect of revenue capped transmission services at the date of the Determination;

(ii) altering the nature or scope of services that comprise the revenue capped transmission services;

(iii) substantially varying the manner in which SPI PowerNet is required to undertake any activity forming part of revenue capped transmission services from the date of the Determination; or

(iv) increasing SPI PowerNet's risk in providing the revenue capped transmission services, or

(b) results in SPI PowerNet incurring (or being likely to incur) materially higher costs in providing revenue capped transmission services than it would have incurred but for that event.

It is the view of the Commission that the definition of a Service Standards Event be amended to incorporate both increases and decreases in regulatory requirements. It also proposes that appropriate amendments be made to require the submission of sufficient information when a pass-through event statement is provided to the Commission. This information should include documentary evidence outlining the impact of any proposed Service Standards Event on aggregate company costs.

SPI PowerNet defines an Insurance Event in the following manner:

Insurance Event means where one or more of the following circumstances occurs:

(a) where Insurance in respect of any risk becomes unavailable to SPI PowerNet;

(b) where Insurance in respect of any risk becomes unavailable to SPI PowerNet at reasonable commercial rates;

(c) where Insurance in respect of any risk becomes unavailable to SPI PowerNet on terms which are at least as favourable to SPI PowerNet as those generally available at the date of the Determination;

(d) where the cost of Insurance (including, without limitation, premiums and deductibles) in respect of any risk becomes materially higher than the cost of Insurance at the date of the Determination.

The Commission is of the view that the definition of an Insurance Event should be amended to allow for a change in the cost of Insurance that becomes materially higher or lower than the cost of Insurance at the date of the Determination. As with the

aforementioned pass-through events, it was proposed that SPI PowerNet amends its proposed pass-through rules to provide documentary evidence of a change in aggregate insurance costs to the Commission.

The Commission considers that a pass-through mechanism that accommodates both positive and negative amounts is appropriate.

With regard to the allowance sought for the deductibles in current insurance policies held by SPI PowerNet, the Commission has determined that the allowance should not be included in the cash flows, but actual expenditures should be included in the pass-through mechanism as an Insurance Event.

Therefore, SPI PowerNet must amend its proposed pass-through rules to allow both positive and negative pass through amounts. It must also amend the pass-through mechanism to allow the Commission to initiate a pass-through review at its discretion.

SPI PowerNet must also change the following:

- the definition of a Service Standards Event in clause 3.1 to allow for regulatory requirements that may result in either higher or lower costs for SPI PowerNet; and

- the definition of an Insurance Event in clause 3.1 to allow for a changes in the cost of Insurance that that becomes materially higher or lower than the cost of Insurance at the date of the Determination; and

- the definition of an Insurance Event in Clause 3.1 to include the amounts currently identified in its self-insurance claim as deductibles in current insurance.

The Commission considers that it is in the public interest to provide a period that allows full assessment of the pass-through events proposals to be undertaken by the Commission. The Commission considers that a 40 business day assessment period is reasonable. Accordingly, SPI PowerNet must amend clause 2.2 of its pass-through rules to provide an assessment period of 40 business days. It must also allow the Commission, at its discretion, to extend the period to adequately assess pass-through proposals.

The Commission requires SPI PowerNet to provide detailed documentary evidence in support of any pass-through statement. Wherever possible, this information should also be provided in the public domain. In addition, SPI PowerNet must annually (at least 50 business days prior to the start of the financial year) provide the Commission with a copy of insurance premium invoices, irrespective of whether a pass-through event statement has been submitted in that year.

Accordingly, SPI PowerNet must:

- amend clause 2.1 of its pass-through rules to require the provision of sufficient detailed documentary evidence which substantiates that the aggregate costs facing SPI PowerNet have increased or decreased as a consequence of the claimed pass-through event.

- amend clause 2.1 to require SPI PowerNet to provide the Commission with a copy of insurance premium invoices annually at least 50 business days before the start

of the financial year, irrespective of whether a pass through event statement has been submitted in that year.

5.7.6 Equity raising costs

As noted, SPI PowerNet did not raise the issue of equity or debt raising costs in its application. As a consequence the Commission did not consider that it was an issue that was relevant to SPI PowerNet. In light of SPI PowerNet's request for capital raising costs the Commission will now consider it.

The Commission has undertaken research on equity raising costs and has collected recent Australian data relating to this issue. In particular, the information pertaining to equity raising costs for several major Australian infrastructure equity raisings has been sourced and appears in the table 5.1.

Table 5.1 Equity raising costs

	Date of offer	Details of offer	Raising costs ($m)	Total offer ($m)	Fees as % of total offer	Fees per year (%)[4]
United Energy	March 1998	IPO – stapled securities	20 [1]	968.2	2.1	0.125
Macquarie Communications Infrastructure Group	July 2002	IPO – stapled securities	13	310	4.2	0.254
Australian Pipeline Trust	May 2000	IPO – units	12	488	2.5	0.149
Envestra	July 1999	Rights offer, convertible notes and placement issue	10.1 [2]	310	3.258	0.197
GasNet	October 2001	IPO – Units	15 [3]	260.16	5.77	0.349
Average			**14.02**	**467.27**	**3.548**	**0.215**

Source: Company prospectuses; Commission calculations.

1. Includes underwriter fees, selling fees, advisory fees, legal fees, accounting fees, printing, advertising and other expenses.
2. Underwriting fees, advisory fees, legal fees, accounting fees, printing, advertising, stand duty and other expenses.
3. Includes the Joint Lead Manager's commissions and fees, accounting fees, legal fees, lodgement fees, listing fees, fees for other advisers, prospectus design, printing and other miscellaneous expenses (including taxes and other government charges).
4. Amortised in perpetuity using a real vanilla WACC of 5.95 per cent.

Recent equity raising costs for Australian infrastructure equity issues, as noted above, fall in the range of 2.10 to 5.77 per cent of total equity raised. Amortised in perpetuity, this amounts to costs of between 0.126 to 0.351 per cent.

The Commission considers that an average of these annual costs represents an appropriate Australian benchmark for the purposes of this decision. Accordingly, the equity raising costs of 0.215 per cent per year of regulated equity should be used. With a RAB $1835.6 million of the assumed benchmark gearing ratio of 60:40, this amounts to an average allowance of $8.19 million regulatory period. This equity

raising cost is in the opex allowance for the Commission's modelling purposes. As with debt raising costs, the Commission intends to undertake further research on this issue for future regulatory decisions.

5.8 Conclusion

Consequent to the review provided by PB Associates and the Commission's own analysis of matters, the Commission grants opex of $395.53 million (nominal), including amounts for efficiency carry-over and equity raising costs, as follows:

Table 5.3 SPI PowerNet opex: 1 Jan '03 to 31 Mar '08 (nominal $m, excl GST)

	Q1 2003	2004	2005	2006	2007	2008
Total opex	**20.12**	**72.08**	**73.55**	**75.05**	**76.58**	**78.15**

The following table compares the total opex originally claimed against the final amount allowed:

Table 5.4: Comparison of opex claimed and allowed (nominal $m, excl GST)

SPI PowerNet Application	Draft Decision	Final Decision	Reasons
$402.70	$373.94	$395.53	Allowances included for: • Efficiency carry-over • Equity raising costs • Self-insurance • Inflation of the claim from 2001 to 2003

6 Total revenue

The previous chapters discussed each of the major elements of the Commission's building block approach to setting SPI PowerNet's revenue cap. This chapter brings this work together, along with a discussion of depreciation and other related matters, to set out the Commission's decision on SPI PowerNet's revenue cap for the period 1 January 2003 to 31 March 2008.

6.1 Code requirement

As explained in Chapter 1, the code requires the Commission to set a revenue cap with an incentive mechanism for non-contestable transmission network services. The Commission's role as regulator of transmission revenue is limited to determining the MAR while SPI PowerNet will calculate the resulting network prices in accordance with Chapter 6, part C of the code.

The code outlines the general principles and objectives for the transmission revenue regulatory regime to be applied by the Commission. The code also grants the Commission the flexibility to use alternative, but consistent, methodologies. In fulfilling its role as regulator, the Commission's aim is to adopt a process which eliminates monopoly pricing, provides a fair return to network owners, and creates incentives for owners to pursue ongoing efficiency gains through cost reductions. The Commission will continue to develop the regulatory framework through its draft *Regulatory Principles*.

6.2 The accrual building block approach

As detailed in Chapter 1, the Commission's decision on SPI PowerNet's MAR relies on the accrual building block approach, while having regard to financial indicators. The basic building block approach calculates the MAR as the sum of the return on capital, the return of capital and opex (non-capital expenditure) and taxes:

MAR = return on capital + return of capital + opex + tax + insurance

= (WACC * WDV) + D + opex + tax + insurance

where:
- WACC = post-tax nominal weighted average cost of capital;
- WDV = written down (depreciated) value of the asset base;
- D = depreciation;
- opex = operating and maintenance expenditure;
- tax = expected business income tax payable; and
- insurance = possible pass-through of reasonable additional third party insurance cost.

The expected tax and insurance terms have been discussed in Chapters 2 and 5 respectively.

6.3 SPI PowerNet's proposal

SPI PowerNet's previous revenue cap was determined under the Tariff Order by the Victorian Government for the period 1 July 1995 to 31 December 2002.

SPI PowerNet's application has been made on the basis that, while the Commission will commence its regulation of SPI PowerNet from 1 January 2003 in accordance with the code, to align SPI PowerNet's reporting with the Singaporean financial year the information has been provided to the Commission on the basis that the RAB will be set from 1 January 2003 to 31 March 2008.

SPI PowerNet proposes a revenue cap which includes:

- for the three month period 1 January 2003 to 31 March 2003, revenue of $75.0 million;
- for the financial year ending 31 March 2004, $299.8 million; and
- for the financial years ending 31 March 2005 of $307.2 million to 31 March 2008 of $330.6 million.

6.4 Commission's assessment of building block components

The Commission's assessment of the various components of the revenue cap, in the context of the building block framework, is discussed below.

6.4.1 Asset value

To establish the appropriate return on the funds invested in SPI PowerNet, the Commission has modelled SPI PowerNet's asset base over the life of the regulatory period and estimated a weighted average cost of capital (WACC) based on the most recent financial information.

The basic methodology underlying the roll-forward of SPI PowerNet's asset base is that the closing value of the asset base from year to year is constructed by taking the opening value, converting it to a nominal figure by adding in an inflation adjustment, adding in any capital expenditure and subtracting disposals and depreciation for the year. The closing value for one year's asset base becomes the opening value for the following year's asset base. Under the post-tax nominal framework, this methodology is modified slightly to account for two regulatory issues, which will be discussed in the Depreciation section below.

Clause 6.2.3(d)(4)(iii) of the code states that the assets in existence and in service from 1 July 1999 are valued at the value determined by the jurisdictional regulator. In accordance with this provision, the Commission will roll forward the jurisdictional valuation of 1 July 1999 to include asset additions, deletions and depreciation and setting an RAB as at 1 January 2003 in accordance with SPI PowerNet's request.

The Commission engaged PB Associates to undertake a review of the SKM valuation, undertaken for the jurisdictional determination, and assess the reasonableness of SPI PowerNet's proposed asset roll forward schedule. PB Associates believed that

SPI PowerNet had adopted a reasonably rigorous and detailed process to develop their 1 January 2003 RAB. A modified version of the 1994 SKM valuation for the RAB was the basis for this. Therefore, based on the 1994 jurisdictional valuation and SPI PowerNet's proposed roll forward schedule, the Commission has set the opening value of SPI PowerNet's assets at $1,835.6 million as at 1 January 2003.

In terms of modelling the movement in SPI PowerNet's asset value over the regulatory period, the Commission has, for the purposes of this decision, indexed this opening asset value by 2.04 per cent per annum, which is consistent with the inflationary expectations used in deriving the WACC.

6.4.2 Capital expenditure

SPI PowerNet has planned the introduction of new technology and integrated systems to replace existing, relatively old, discrete systems. After a brief review of the types of major capital expenditure projects proposed during the regulatory period, PB Associates concluded that projects planned are justified and appropriate.

On the basis of PB Associates assessment, the Commission will include, in nominal terms, $378.64 million of capital expenditure in the calculation of SPI PowerNet's revenue cap, including interest during construction.

6.4.3 Depreciation

Using a post-tax nominal framework, the Commission has made allowance for "economic depreciation" which adds together the (negative) straight line depreciation with the (positive) annual inflation effect on the asset base. SPI PowerNet noted that the straight-line method of depreciation is considered to provide the best approximation of the pattern of asset exhaustion.

This economic depreciation has been used to model the movements of asset values over the life of the regulatory period (table 6.1) and for determining the return of capital (table 6.2). Calculation of the applicable straight-line depreciation component has been based on the remaining life per asset class.

On the basis of this approach the Commission has calculated a straight-line depreciation allowance that trends from $18 million for 1 January 2003 to 31 March 2003 to $74.93 million, $77.35 million, $79.56 million, $82.28 million and $84.41 million in each of the following full years.

6.4.4 Weighted average cost of capital

In determining SPI PowerNet's revenue cap, the Commission must have regard to SPI PowerNet's WACC. The WACC is a method commonly used for determining the return expected on an asset base.

While the WACC framework provides a well-recognised theoretical model for establishing the cost of capital, there is less than full agreement on the precise magnitude of the various financial parameters that need to be applied. The Commission has given careful consideration to the value that should be assigned to SPI PowerNet given the nature of its business and current financial circumstances. Accordingly, the parameter values used are those considered most appropriate.

The Commission has chosen to apply a post tax nominal return on equity of approximately 11.09 per cent, which equates to a post-tax nominal vanilla WACC of 8.23 per cent. In arriving at those figures, the Commission has adopted:

- a nominal risk free interest rate of 5.12 per cent, reflecting the short term average yield on ten year Commonwealth Government bonds;
- a real risk free rate of 3.01 per cent based on the short term average yield on five year capital indexed bonds;
- an expected inflation rate of 2.04 per cent derived from the difference between the two yields;
- a debt margin of 1.20 per cent above the nominal risk free interest rate leading to a nominal pre-tax cost of debt of 6.32 per cent.

The Commission has examined market evidence and accepted the advice of financial experts in determining a market risk premium of 6 per cent and a dividend imputation figure (gamma) of 0.5, although recent evidence suggests that a gamma closer towards 1 may be more appropriate.

The Commission has examined the risks faced by SPI PowerNet and the equity betas of similar businesses in arriving at an asset beta of between 0.30 and 0.50. This range is derived principally from the average equity beta for the infrastructure and utilities industry group listed on the Australian Stock Exchange. Using a gearing assumption of 60 per cent and a debt beta of 0.00, this converts to a possible range for the equity beta of between 0.75 and 1.25. Taking the midpoint of this range returns an equity beta for SPI PowerNet of just below 1.

The Commission's chosen post tax nominal return on equity of 11.09 per cent lies below SPI PowerNet's proposal of a nominal post tax return on equity of 11.99 per cent. This largely reflects the prevailing market conditions and SPI PowerNet's contention that it requires a higher rate of return to reflect the level of risk faced by its network from competing energy sources.

6.4.5 Asset base roll-forward

Based on the above components, the Commission has modelled SPI PowerNet's asset base over the life of the regulatory period (see Table 6.1). Note that, under the post-tax nominal framework adopted by the Commission, the return on capital building block has been calculated using the nominal vanilla WACC (8.23 per cent) consistent with the post-tax WACC determined from the cost of capital parameters.

Table 6.1 SPI PowerNet's return on capital, 1 January 2003 to 31 March 2008 ($ nominal million)

	Financial years ending 31 March					
	2003[1]	**2004**	**2005**	**2006**	**2007**	**2008**
Opening asset base	1,835.60	1,845.48	1,879.22	1,904.94	1,916.94	1,945.58
Capital expenditure	17.61	72.96	68.34	57.62	79.72	82.39
Economic depreciation	7.74	39.21	42.63	46.12	50.58	54.63
Closing asset base	1,845.48	1,879.22	1,904.94	1,916.44	1,945.58	1,973.34
Return on capital	37.74	151.79	154.57	156.68	157.63	160.03

[1] This is data for a three-month period, 1 January 2003 to 31 March 2003.

6.4.6 Operating and maintenance expenses

SPI PowerNet argues that its business operations are extremely cost-efficient. PB Associates concurs with SPI PowerNet's assertion, however, it notes that some external factors, such as the fact that SPI PowerNet's network covers a comparatively small area, has affected favourably SPI PowerNet's operating expenditure compared with other states.

The efficiency carry-over for opex of $12.64 million based on SPI PowerNet's performance between 1998 to 2002 is included in the total opex amount. The efficiency carry-over mechanism produces a glide path that is added to the revenue over the 2003 to 2007/08 period.

In regard to equity raising costs, 0.215 per cent per year of the regulated equity was employed. With a RAB of $1,835.6 million and an assumed benchmark gearing ratio of 60:40, this amounts to an average allowance of $8.19 million over the regulatory period. This equity raising cost is in the opex allowance for the Commission's modelling purposes. Finally, an amount of $320,000 of self-insurance risk was included in the opex amount. In total the Commission recognises opex of $395.53 million over the regulatory period.

6.4.7 Estimated taxes payable

Based on the assumptions underlying the above building block components and taking into account the network's tax depreciation profile, the Commission assesses SPI PowerNet as being in a positive tax paying position during the regulatory period.

The Commission's assessment of taxes payable are based on the 60 per cent gearing level assumed in the WACC parameters. Further, the tax estimates relate only to the network's regulated activities. The Commission's estimated taxes payable trend from $6.28 million for 1 January 2003 to 31 March 2003, $16.29 million for the first full year of the regulatory period to $19.81 million for 31 March 2008.

6.4.8 Total revenue and CPI-X smoothing

Based on the various elements of the building block approach, the Commission propose a smoothed revenue allowance that increased from $68.75 for 1 January 2003 to 31 March 2003 to $271.23 million, $278.85 million, $286.70 million, $294.76 million and $303.05 million in the subsequent full years of the regulatory period (Table 6.2). Those figures incorporate revenue smoothing based on an X smoothing factor 0.77 per cent. That is, the MAR will increase by CPI *plus* 0.77 per cent in each year of the regulatory period.

Table 6.2 SPI PowerNet's MAR to 2008 ($ nominal million, excluding GST)

	Financial years ending 31 March					
	2003[1]	**2004**	**2005**	**2006**	**2007**	**2008**
Return on capital	37.74	151.79	154.57	156.68	157.63	160.03
Return of capital	7.74	39.21	42.63	46.12	50.58	54.68
Operating expenses	20.12	72.08	73.55	75.05	76.58	78.15
Estimated taxes payable	6.28	16.29	17.17	18.02	18.82	19.81
Less value of franking credits	3.14	8.14	8.58	9.01	9.41	9.91
Unadjusted revenue	68.75	271.23	279.33	286.87	294.20	302.71
Smoothed MAR	**68.75**	**271.23**	**278.85**	**286.70**	**294.76**	**303.05**

[1] This is data for a three-month period, 1 January 2003 to 31 March 2003.

6.4.9 Differences between Draft Decision and Final Decision

There are five main differences between the draft and final decisions. The following items have been accounted for in this Final Decision:

- *The interest rate sampling period.* On the 13 November 2002, the Commission decided to reduce the interest rate-sampling period from 40-days to 10-days;

- *Debt and equity costs.* Following the GasNet decision, the Commission have made an allowance in SPI PowerNet's MAR to acknowledge benchmark costs relating to the raising of debt and equity finance;

- *Service standards*. On the 24 September 2002, the Commission released its Draft Decision regarding service standards. Details of those standards and how they will apply to the Victorian Electricity Transmission Network are incorporated in this decision;

- *Opex Efficiency Carry Over*. The Commission have incorporated an allowance in SPI PowerNet's MAR to recognise efficiency gains in past operating expenditure; and

- *Pass through rules*. Following the GasNet decision, the Commission have incorporated pass through rules in this decision.

In arriving at its Final Decision, the Commission notes that its proposed revenue cap is around 8.89 per cent lower than SPI PowerNet's proposed revenue cap. Table 6.3 below illustrates the comparisons between the Final Decision with the Draft Decision and SPI PowerNet's application.

Table 6.3 Comparison of Final Decision with Draft Decision and SPI PowerNet's Application

	2003	**2004**	**2005**	**2006**	**2007**	**2008**
Opex – SPI	19.5	70.1	73.2	75.1	78.2	81.2
Opex – Draft	19.41	67.78	69.31	70.87	72.47	74.1
Opex – Final	20.12	72.08	73.55	75.05	76.58	78.15
Capex – SPI	17.6	66.1	60.6	49.9	67.8	68.7
Capex – Draft	15.3	68.58	63.79	54.31	75.95	82.29
Capex – Final	17.61	72.96	68.34	57.62	79.72	82.39
Return of Capital – SPI	18.4	79.7	83.6	86.3	89.4	92.8
Return of Capital - Draft	7.83	35.71	39.08	42.62	47.13	51.34
Return of Capital - Final	7.74	39.21	42.63	46.12	50.58	54.63
Return on Capital – SPI	49.8	203.2	208.5	212.9	217.8	223.8
Return on Capital - Draft	38.2	153.42	156.19	158.27	159.25	161.68
Return on Capital - Final	37.74	151.79	154.57	156.68	157.63	160.03
Smoothed MAR – SPI	75	299.8	308.8	314.7	321.6	329.8
Smoothed MAR - Draft	68.61	264.55	272.5	280.68	289.12	297.81
Smoothed MAR - Final	68.75	271.23	278.85	286.70	294.76	303.05

6.5 Conclusion

On the basis of the Commission's forecast inflation, the Commission has determined a revenue cap for SPI PowerNet that increases from approximately $68.75 million for 1 January 2003 to 31 March 2003 to $303.05 million for 31 March 2008.

On a $/MWh basis, the revenue cap as detailed in this decision will secure significant real price reductions over the term of the regulatory period. A year-on-year real reduction of approximately 1-3 per cent will be delivered over the next regulatory period.

7 Service standards

7.1 Introduction

Transmission network service providers (TNSPs) provide a service and receive revenues not exceeding the maximum allowed revenue (MAR), which is determined by the Commission. Such service differs from state-to-state, usually explained by differing asset structures, topography, etc.

Under existing arrangements TNSPs do not have any incentive to improve service quality. Such an incentive would exist if TNSPs could earn more revenue for improving their service. Also under existing arrangements, TNSPs have incentives to minimise costs, as it would increase their profits. In doing so they may impose much larger costs on other market participants resulting from lower levels of service. Therefore TNSPs should have incentives to not allow service quality to fall.

The Commission intends implement an incentive scheme to provide appropriate incentives to maintain or improve service quality for all TNSPs. This scheme will provide a reward (or penalty) in addition to the allowed revenue (AR) that a TNSP can earn.

The remainder of this chapter sets out:

- the National Electricity Code (code) requirements for the inclusion of service standards in a revenue cap decision
- SPI PowerNet's application
- VENCorp's application
- views of interested parties
- the Commission's considerations concerning service standards.

7.2 Code Requirements

The code requires that the Commission establish a framework for the regulation of transmission revenues.

Clause 6.2.4(c)(2) of the code states that when the Commission sets a revenue cap it must have regard to:

- the service standards referred to in the code applicable to the regulated transmission network; and
- any other standards imposed on the network by agreement with the relevant network users.

Clause 5.2.3(b) and schedule 5.1 of the code specify the quality of supply to be achieved by the networks.

Clause 5.2.3(b) states that a network must comply with the service standards specified either in schedule 5.1 or in a connection agreement. However if a connection agreement adversely affects a third network user, then it would be superseded by schedule 5.1.

Schedule 5.1 outlines the planning, design and operating criteria that a network must achieve. The design of a network has a clear impact on its performance over time.

Schedule 5.1.1 of the code states that:

> "A Network Service Provider must:
>
> (1) fully describe the quantity and quality of network services which it agrees to provide to a person under a connection agreement in terms that apply to the connection point as well as to the transmission or distribution system as a whole; and
>
> (2) ensure that the quantity and quality of those network services are not less than could be provided to the relevant person if the national grid were planned, designed and operated in accordance with the criteria set out in this schedule S5.1.1 and recognising that levels of service will vary depending on location of the connection point in the network.
>
> To the extent that this schedule 5.1 does not contain criteria that are relevant to the description of a particular network service, the Network Service Provider must describe the network service in terms which are fair and reasonable."

The code defines 'satisfactory operating state' for the power system in clause 4.4.2. The system is in a satisfactory operating state when the service standard indicators in Schedule 5.1 are met or exceeded.

7.3 SPI PowerNet's application

SPI PowerNet recognised that the Commission's current review of transmission service standards was incomplete at the time of writing its application. This review was incomplete at the time that SPI PowerNet submitted its application.

7.3.1 Victoria's current arrangements

In its application SPI PowerNet included its current service standards. These arise from State regulation and a service agreement with VENCorp. The service performance arrangements have been in operation in Victoria since 1994.

SPI PowerNet's transmission license and the Victorian System Code require that it meet certain performance measures. These performance measures include:

- sustained forced outage rate for transmission lines
- mean duration of forced outages
- successful auto re-close of transient faults on transmission lines

- sustained forced outage rate for transformers
- mean duration of forced outages for transformers
- availability of equipment forming part of the transmission network
- percentage of incorrect protection system responses.

These performance measures have been aimed at measuring equipment availability. SPI PowerNet stated these measures are consistent with its primary function. These performance measures will be incorporated into the network agreement between SPI PowerNet and VENCorp.

Outside these performance benchmarks SPI PowerNet is subject to an incentive scheme depending on:

- the availability of the transmission network
- (reduction of) constraints.

SPI PowerNet and VENCorp have undertaken a review of this arrangement. Both will determine a revised scheme, which will involve estimating the cost of outages. SPI PowerNet will then pay this cost to VENCorp. This should be a saving passed on to customers.

7.3.2 Commission's review of transmission service standards

SPI PowerNet proposed a framework for performance regulation under the Commission's revenue cap. It acknowledged that monitoring service standards is an integral part of the revenue cap.

SPI PowerNet believes that the service standards under the revenue cap should be consistent with its service agreement with VENCorp. SPI PowerNet believes its current performance measures and availability incentive scheme will produce the outcomes the Commission desires.

SPI PowerNet anticipates that the Commission intends to introduce an incentive scheme for the Victorian network as a whole, rather than just SPI PowerNet.

7.4 VENCorp's application

VENCorp recognises the importance of linking the MAR with level of service. VENCorp's forecast costs assume:

- its service standards under service agreements will be maintained
- service standards of future augmentation will be consistent with existing standards.

VENCorp acknowledged the Commission's transmission service standards review. It notes that increased service standards may increase the cost of operating its business.

VENCorp believes there must be consistency between the service standards it provides under the revenue cap and the service standards that networks provide to VENCorp under service agreements.

Finally VENCorp notes it probabilistic approach to planning may impact the incentive scheme. VENCorp believes that the probabilistic approach would be the best way to ensure efficient reliability.

7.5 Views of interested parties

7.5.1 Submissions on the applications

The Commission received various written submissions regarding the Victorian transmission revenue cap applications. Only Citipower made a submission regarding service standards in the revenue cap applications.

Citipower noted that the Commission's transmission service standards review is the only proposal that could encapsulate service levels at distribution connection points. Citipower believe there is scope to consider the introduction of a financial incentive to reward good performance of distribution connections.

The Victorian Department on Natural Resources and Energy (NRE) wrote a letter to the Commission dated 14 August 2002. This letter expressed NRE's interest in the Commission's incentive scheme in relation to the Victorian transmission revenue caps. The NRE has two main concerns:

- VENCorp being a not-for-profit statutory authority should not be exposed to the financial incentives; and

- The need for reliability incentives on connection assets. NRE proposed that the Commission's incentive scheme include the connection assets.

7.5.2 Submissions on the draft decision

The Commission received three submissions from interested parties in relation to the incentive scheme that was proposed in the draft decision and the supplementary paper released on 1 November 2002. The three interested parties were SPI PowerNet VENCorp and Ergon Energy (Ergon).

SPI PowerNet requested five amendments in relation to the service standards proposed by the Commission.

1. The removal of financial incentives from the availability targets, leaving the financial incentive completely on the average outage duration measure.

2. Correction of historical data.

3. Changes to the definition of force majeure. To make it more specific.

4. Removal of the term extreme events in the definitions of the measures, instead relying on the term 'force majeure'.

5. Include more specific exclusion events from the definitions of the performance measures.

VENCorp believes that the Commission's incentive scheme unnecessarily duplicates the incentive arrangements proposed by SPI PowerNet and VENCorp. However it also believes the Commission's scheme may distort signals that would be provided by the SPI PowerNet and VENCorp availability scheme.

VENCorp states that the current Victorian arrangements provide more powerful incentives relative to the incentives provided by the Commission's scheme. This is because the Commission proposed ½% of SPI PowerNet's annual revenue be used as a financial incentive rather than the 2% applied in Victoria's current arrangements.

VENCorp concluded that the two incentive schemes should not operate in parallel and that the Commission adopt the current Victorian arrangements for the purpose of setting the revenue cap.

Ergon Energy (Ergon) supports the development of an incentive scheme that will give TNSPs the incentive to consider the market impact of their business decisions. Ergon believes the Commission's incentive scheme may provide some such benefits. However it believes the provision of financial transmission rights would be a preferable and simple alternative.

Ergon was concerned that the process the Commission used to set the performance targets and the financial incentives was not specified in its draft decision and supplementary report. It was also concerned that a situation could arise where SPI PowerNet would not be adequately penalised.

Ergon believed that where a connection asset is owned by SPI PowerNet it should be included in the performance (i.e. availability) incentive scheme. It also believed that momentary interruptions, for the average outage duration measure, should be a smaller time interval than up to 1 minute.

7.6 Commission's consideration

The Victorian regulatory framework is unique as the planning and operation functions of the transmission network are split between SPI PowerNet and VENCorp.

- SPI PowerNet owns, maintains and operates the transmission network. It is a company and its returns are paid to its shareholders.

- VENCorp is responsible for planning the network. It is a not-for-profit statutory organisation.

The service standards review is aimed at giving the incentive to TNSPs to operate the network in a fashion consistent with market outcomes. The Commission believes that it is appropriate that SPI PowerNet be given this incentive.

7.6.1 Performance targets and incentives

The performance incentive scheme decided upon by the Commission is based on the final report by SKM[31]. The SKM report was placed on the Commission website 4 December 2002. The incentive scheme is detailed and complex. However it can be explained by breaking it up into parts.

Indicators

SKM recommended to the Commission five basic indicators as described below. These indicators proxy the level of service provided. It is important that these indicators are defined so that each TNSP can report on a consistent basis over time. The definition of each indicator is attached in Attachment C. The specific performance indicators selected for SPI PowerNet are:

1. Total Circuit availability
    - Peak critical circuit availability
    - Peak non critical circuit availability
    - Intermediate critical circuit availability
    - Intermediate non critical circuit availability
2. Loss of Supply Event Frequency Index
    - Frequency of events lasting more than 0.05 system minutes
    - Frequency of events lasting more than 0.3 system minute
3. Average restoration time
    - Lines
    - Transformers
4. Minutes constrained (inter-regional)
5. Minutes constrained (intra-regional)

Connection assets

NRE, CitiPower and Ergon expressed concern about the exclusion of connection assets from the availability statistics. This issue was canvassed early on in the development of the scheme. After careful consideration connection assets were not

[31] Sinclair Knight Merz (November 2002), Transmission Network Service Provider (TNSP) Service Standards.

included in the draft discussion paper[32] issued in March 2002 for the following reasons.

- The focus of the scheme is to assess TNSPs overall performance whereas connection assets relate to specific parties.
- This service standards incentive scheme is a broad based scheme that applies to all TNSPs in the NEM. The inclusion of connection assets was raised as an issue only by Tasmania in the forum held in March 2002.
- The inclusion of information specific to connection assets in this scheme may cause distortions. It may also cause clutter due to the large number of connection assets.
- The scheme may capture some of the adverse performance effects relating to connection assets.

In the forum of 28 March 2002, there was widespread agreement that the performance of connection assets was better addressed by connection agreements between the individual parties concerned. Further the code allows the negotiation of service standards within connection agreements.

Hence SKM excluded connection assets when it collected data from TNSPs. The draft decision for SPI PowerNet did not include connection assets in its service standard scheme.

The Commission also considers that at this final stage of the scheme it is not practicable to include connection assets in the availability measure. The Commission notes that connection assets are not completely excluded from the performance incentive scheme. The outage duration measure will capture some of the effects of outages of connection assets.

The Commission notes that, given the complexities involved, the current scheme is intended to be a step in the right direction rather than a final position. During the development of the scheme it was made clear to interested parties that the Commission will learn from the experience of implementing the scheme and review it at an appropriate stage. The issue of connection assets also will be considered at that time.

Extreme Events

SPI PowerNet expressed a concern that including extreme events and excluding force majeure events from the performance measures could be a problem. The difference between these types of events is a simple concept.

Extreme events may occur regularly and would be included in the incentive scheme. For example a storm can be considered and extreme event. However this event would become a force majeure event, and hence excluded, if the storm was more severe than

[32] Sinclair Knight Merz (March 2002), Transmission Network Service Provider (TNSP) Service Standards: Stage 1 – Draft Discussion Paper.

normal. This is assuming it could not be planned for beyond good electricity industry practice.

Third party events

SPI PowerNet proposed that the Commission exclude certain third party events from three of the performance measure definitions. The proposed exclusions are shown in Attachment G.

The Commission considers that in some cases SPI PowerNet may be able to plan or influence the third party event and therefore not all third party events should be excluded. For example, where a third party requests access to SPI PowerNet's easements it should negotiate the best possible time for the third party access.

However, such events will be excluded where they fall within the definition of force majeure. That is, where the third party event is, notwithstanding the observance of good industry practice, beyond the reasonable control of SPI PowerNet.

Performance targets

The performance targets recommended by SKM and the historical performance are shown in Attachment D. The historical performance was used to assess what level of service SPI PowerNet has been providing. SKM used the historical performance as a guide in setting the performance targets ensuring that SPI PowerNet's targets are achievable.

Historical information is not available for the constraint indicators (indicators 4-5). There is information available about the loss of supply frequency index. However there is low confidence in this information and for this reason no performance target could be set for this indicator.

This means performance targets are only set for the availability measure and the outage duration measure. SPI PowerNet would prefer to have a performance target on the outage duration alone. The Commission considers one performance target to be unsatisfactory. The incentive scheme is intended to provide a broad measure of SPI PowerNet's performance for which it earns a regulated return.

However the Commission intends to collect this data annually during the regulatory period. Performance targets will be set for these measures when the Commission has the data to do so.

Financial incentives

Linking the level of service to financial incentives was done by selecting an appropriate percentage of the AR that SPI PowerNet can gain or forfeit depending on the performance it achieves. The Commission considers that a one per cent increase in the AR would provide a large enough incentive for the TNSPs to maintain or improve their current level of service. Further, a one per cent decrease in the AR would strengthen the TNSP's incentive to avoid deterioration of their current level of service.

The Commission considers that the potential loss of one per cent of its AR will not subject SPI PowerNet to extra material risk.

The Commission is not aware of an incentive scheme that provides incentives larger than three percent. For this reason the Commission believes that a one percent financial incentive is appropriate when introducing the incentive scheme.
The code requires the Commission, when deciding a revenue cap, to consider existing service standards. SPI PowerNet is subject to another performance incentive scheme with VENCorp. Basically, this scheme requires SPI PowerNet to pay VENCorp when its circuit availability falls. The Commission allowed operating expenditure for SPI PowerNet to comply with this scheme.

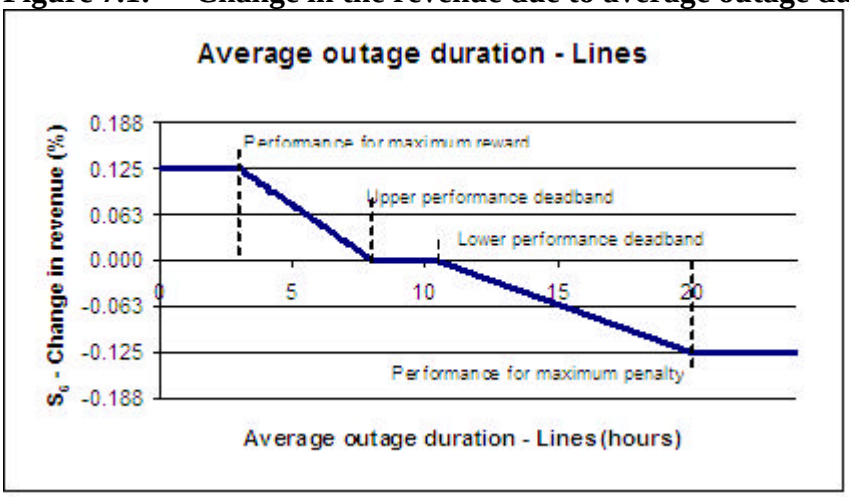
The Commission believes that one percent of a TNSP's AR is an appropriate size incentive during the early stages of the incentive scheme. However the Commission will only use half a percent of SPI PowerNet's AR as an incentive because of the similarities between the two PI schemes. Where the size of the incentive is less than half a percent the scheme would not be effective.

The Commission agrees with VENCorp that if the financial incentive was larger than half a percent it would be a more powerful scheme. However the Commission's conservative approach will ensure SPI PowerNet's financial incentives are limited to 2.5%[33] of its AR.

It is likely that the size of SPI PowerNet's incentive will be increased in the future to provide more powerful incentives. The increase will depend on the success of the incentive scheme in the regulatory reset at hand.

Performance between the "Lower performance deadband" and the "Upper performance deadband" will not change the AR. Figure 7.1 is an example of this relationship.

Figure 7.1: Change in the revenue due to average outage duration



[33] This assumes the 2% of revenue could be gained or lost via the Victorian arrangements and 0.5% could be gained or lost via the PI scheme linked to this revenue cap decision.

Performance better than the "Performance for maximum penalty" and not as good as the "Lower performance deadband" will result in a decrease in the AR.
The inverse is true for rewards. That is performance better than the "Upper performance deadband" will result in an increase in the AR. The amount of the reward and penalty can be calculated using the explanation below and the equations in Attachment E. The maximum reward can be earned if performance is equal to or better than the "Performance for maximum reward".

Incorporating the penalty or reward into the MAR

The Commission requires, as part of its regulatory regime, each TNSP to report annually on its service standards according to the performance indicators chosen. In the case of SPI PowerNet this will be actual performance measured by the indicators defined in Attachment C. These indicators should be broken down into the specific categories shown in chapter 7.7.1.

The penalty/reward from this incentive scheme will lag by a little more than one year.

The MAR is calculated as follows:

$$MAR_{financial\ year} = AR_{financial\ year} + PI$$

Where:

MAR = Maximum allowed revenue for the financial year

AR = Annual revenue for the financial year
(Attachment F shows the calculation of AR)

PI = Performance incentive

The PI is calculated based on the calendar year rather than the regulatory/financial year. This is to allow time to gather the service standards information and calculate the MAR for the next regulatory/financial year.

The performance incentive is calculated as follows:

$$PI = AR_{calender\ year} \times S_{calender\ year}$$

Where:

$AR_{calender\ year}$ = Annual revenue for the calendar year. (Calculated using a time weighted average of the AR of the two relevant regulatory years)

S = Service standards factor for the calendar year
(Attachment E shows how to calculate 'S')

The MAR uses an AR that is based on the regulatory/financial year. For the purpose of calculating the PI the AR should be based on the calendar year. In this case a time weighted average AR of the two relevant regulatory/financial years should be used.

This will result in a 1¼ year's lag between the performance measured and the PI revenue for that performance.

For example, the MAR for the first complete regulatory period (i.e. year ending 31 March 2004) will not include a PI component. The following regulatory/financial year (i.e. year ending 31 March 2005) will include the PI calculated for the first calendar year (i.e. year ending 31 December 2003).

The PI for the final calendar year within the regulatory period can be included in the first regulatory/financial year of the following regulatory period.

This calculation does not allow the effect of 'S' to be compounded into future periods. That is each annual service standards reward or penalty will only affect revenues in one year.

8 Financial indicators

8.1 Introduction

Clause 6.2.4(c) of the code provides that in setting the revenue cap, the Commission must have regard to the relevant financial indicators. Accordingly, the Commission has sought to examine the impact of its decision on SPI PowerNet's ongoing ability to manage its financial position. That is, the Commission has used this financial indicator analysis to provide a reasonableness check against the MAR determined under the building block methodology. This approach is consistent with that outlined in the Commission's draft *Regulatory Principles*, the *NSW and ACT* and *Powerlink* revenue cap decisions.

Financial indicator analysis is relevant in the context that investors, financiers and credit rating agencies examine financial performance indicators as part of their assessment of a firm's credit worthiness. Firms with lower ratings are less likely to gain access to funds in debt and equity markets. In this context, the Commission cautions on placing too much emphasis on financial indicators derived from the regulatory model. These elements are not strictly comparable with the way in which traditional financial statements are derived.

More importantly SPI PowerNet has a revenue stream that is inflation indexed and almost guaranteed for the next five and a half years. This is unlike firms in the competitive market whose revenue stream can vary. This important difference limits the usefulness of the financial indicator analysis for TNSPs.

8.2 Financial indicator analysis

To assess the implications of the total revenue assessed for SPI PowerNet, the Commission has used both qualitative and quantitative indicators. The former broadly described as the business profile and the latter as the financial profile. A firm with a strong business profile but a weak financial profile may achieve the same credit rating as a firm with a weak business profile but strong financial profile.

Business profile

A range of issues impact on the assessment of a firm's business profile, including:

- the nature of the markets in which the firm operates;
- the competitiveness of the firm;
- the cost management systems of the firm; and
- the quality of key personnel of the firm.

It is not the Commission's function to comment on these factors directly.

However, the Commission is in a position to comment on one important issue that impacts on the regulated entity's business profile, namely the nature of the regulatory framework itself. The Commission considers that under the current revenue cap regime TNSPs should be able to maintain a relatively strong business profile.

Financial profile

As noted above, the process of calculating these ratios is complicated by differences between principles underlying the Commission's regulatory financial model and those used as the basis for construction of standard financial statements. However, the Commission considers that, for the purposes of high-level assessment, a reasonable basis for estimation is possible.

The Commission has used a typical range of financial ratios. The indicators used include measures of SPI PowerNet's:

- ability to cover operating costs
- profitability
- ability to service and repay debt
- ability to finance new expenditure from operations; and
- gearing.

Credit rating

To generate an indicative overall credit rating from the business profile and financial ratios, the Commission has applied the classifications normally used by Standard and Poors. Those ratings, and the way they are normally interpreted, are as shown in table 8.1.

Table 8.1 Standard and Poor's key indicators

Utility business profile	Funds flow interest Cover (times)				Funds flow net debt payback (years)				Internal financing ratio (per cent)			
	AAA	AA	A	BBB	AAA	AA	A	BBB	AAA	AA	A	BBB
Excellent	4.0(	3.25	2.75	1.50	4.0	6.0	9.0	12.0	100	70	60	40
Above avg.	4.2!	3.50	3.00	2.00	3.5	5.0	7.0	9.0	100	80	70	50
Average	5.0(	4.00	3.25	2.50	3.0	4.0	5.5	7.0	100	100	90	55
Below avg.	X	4.25	3.50	3.00	X	4.0	5.5	7.0	X	100	100	75
Vulnerable	X	X	4.00	3.50	X	X	4.0	6.0	X	X	100+	90

AAA Extremely strong capacity to meet financial commitments.

AA Very strong capacity to meet financial commitments.

A Strong capacity to meet financial commitments but somewhat susceptible to adverse economic conditions and changes in circumstances.

BBB Adequate capacity to meet financial commitments but more susceptible to adverse economic conditions however is not considered vulnerable.

Ratings in the BB, B, CCC, CC and C categories are regarded as having significant speculative business, financial and economic conditions.

8.2.1 Submissions by interested parties

SPI PowerNet noted that although rating agencies including Standard and Poors and Moody's used both quantitative and qualitative factors to determine ratings, in the current context, the consistency issue is solely related to quantitative factors.
SPI PowerNet considered that assuming an average profile on qualitative factors, the credit rating that could be achieved by the benchmark business is determined with respect to the two most significant financial indicators used by rating agencies:

- the EBITD to interest cover ratio; and
- the gearing ratio.

SPI PowerNet noted that based on advice from Westpac's credit research group, an electricity transmission business exhibiting a 60 per cent gearing and with an EBDIT to interest cover ratio around 2.0 times would, most likely, be rated BBB+.
SPI PowerNet considers that in view of this, the revenue cap would support an investment grade credit rating and is consistent with the input assumptions in the WACC calculation (BBB+).

8.3 Commission's assessment and conclusion

The Commission has calculated a set of financial indicators for SPI PowerNet for the regulatory period. Its methodology was to take the maximum allowable revenues determined in this Final Decision and incorporating those values with their associated costs into the set of financial indicators shown in table 8.2. In interpreting the results of the calculations, the Commission considers that SPI PowerNet has a business profile lying between excellent and above average given the likely stability of its earnings and lack of competitors for the services provided.

The Commission notes SPI PowerNet's concerns regarding the financial indicators and its associated credit ratings. However the Commission's forecast shows greater optimism for SPI PowerNet's future viability under this final revenue cap decision. On balance the analysis suggests that, under the Commission's proposed MAR, SPI PowerNet is likely to have an overall credit rating that trends predominantly from **AAA to BBB** over the duration of the regulatory period.

The Commission has calculated the financial indicators, in table 8.2, using a benchmark of 60 per cent gearing as referred to in the cost of capital parameters in Chapter 2 of this decision. The actual level of gearing is a matter for network's owners and the Commission notes that SPI PowerNet 's actual gearing is more like 80 per cent.

Further, in calculating the financial indicators, the Commission normally estimates the dividend payout ratio based on historical figures. However, the Commission considers that since the change of ownership from GPU to SPI PowerNet the historical dividend payout information may no longer be relevant or applicable. The Commission notes that according to Standard and Poor's:

> Common dividend policy also has a direct bearing on liquidity and financing flexibility to the extent that sufficient cash is retained to reinvest in the business. High dividend payout ratios are viewed poorly, particular if a utility has a challenging construction program. [34]

Nevertheless, for the purpose of calculating SPI PowerNet's financial indicators and in the absence of more recent information, the Commission considers it would be appropriate to assume a positive dividend payout ratio and therefore has adopted a ratio of 50.

[34] Standard and Poor's, *Energy Australia & New Zealand*, November 2001, p. 19.

Table 8.2 SPI PowerNet financial indicators

Financial Indicators	2004-05	2005-06	2006-07	2007-08
EBIT to revenues (%)	45.04	45.80	46.06	46.13
EBITD to revenues (%)	73.03	73.42	73.79	73.88
EBIT to funds employed (%)	8.35	6.73	6.83	6.94
EBIT to regulated assets (%)	8.35	6.73	6.83	6.94
Pre-tax interest cover (times)	2.20	1.78	1.80	1.83
Funds flow net interest cover (times)	2.46	2.85	2.89	2.93
S&P rating (excellent business profile)	**BBB**	**BBB**	**BBB**	**BBB**
Funds flow net debt pay back (years)	14.47	9.85	9.64	9.44
S&P rating (above average business profile	**BB**	**BB**	**BB**	**BB**
Internal Financial Ratio (%)	111.55	179.14	225.40	172.19
S&P rating (above excellent business profile)	**AAA**	**AAA**	**AAA**	**AAA**
Gearing	60.00	60.00	60.00	60.00
Payout ratio	50.00	50.00	50.00	50.00

Note: Only the full years under regulation have been included in the financial indicator analysis.

Financial indicators formulae:

EBIT/funds employed	EBIT/(debt + equity)
Dividend payout ratio	Dividends/NPAT
Funds flow interest cover	(NPAT + depreciation + interest + tax)/interest
Funds flow net debt pay back	(Debt – (investments + cash))/(NPAT + depreciation)
Internal financing ratio	(NPAT + depreciation - dividends)/capex
Pre-tax interest cover	EBIT/interest
Gearing	Debt/(debt + equity)

The Commission is satisfied that SPI PowerNet's likely credit rating will be above investment grade and will not adversely affect its ability to access capital markets. Based on its analysis, the Commission considers that the trend, when assessed against the background of SPI PowerNet's strong business profile, indicates that the final revenue stream set out above will not adversely affect the ongoing financial viability of the network.

9 VENCorp revenue cap

9.1 Introduction

The transmission arrangements in Victoria are unique in the NEM. As discussed earlier in this decision, SPI PowerNet owns and operates the transmission network and provides bulk transmission services to VENCorp under a network agreement. VENCorp is a not-for-profit organisation that owns no transmission assets itself. It provides shared network services to users and is responsible for planning and directing the augmentation of the shared network (which excludes the connection facilities utilised by generators and distribution bodies).

VENCorp's revenue requirement is essentially comprised of:

- payments to SPI PowerNet for bulk transmission services (prescribed services);
- payments to SPI PowerNet and other network providers for services relating to augmentations; and
- opex costs.

SPI PowerNet's MAR is regulated by the Commission, while payments for augmentations are set under regulatory provisions (if non-contestable) or by competitive processes (if contestable). Only the opex costs are fully within the direct control of VENCorp. This represents about 2 per cent of VENCorp's total costs.

The remainder of this chapter:

- sets out the requirements of the code (section 9.2);
- summarises the Commission's decision concerning the appropriate level of opex to be allowed in the present regulatory period as well as the information considered by the Commission in arriving at that conclusion. This includes:
    - VENCorp's opex proposal for the regulatory period (section 9.3);
    - a summary of the major findings of PB Associates' review (section 9.4);
    - submissions by interested parties (section 9.5);
  - summarises submissions on the draft decision (section 9.6);
  - sets out the Commission's considerations (section 9.7); and
  - summarises the Commission's conclusions (section 9.8).

9.2 Code requirement

The Commission's task in assessing VENCorp's opex is specified in the code. In particular, Part B of Chapter 6 of the code requires *inter alia* that:

- in setting the revenue cap, the Commission must have regard to the potential for efficiency gains in expected operating, maintenance and capital costs, taking into account expected demand growth and service standards; and

- the regulatory regime must seek to achieve an environment which fosters efficient use of existing infrastructure, efficient operating and maintenance practices and an efficient level of investment.

However, it should be noted that clause 9.8.4(a)(2) of the code states that, in the case of any inconsistency between the Victorian electricity transmission regulatory arrangements and the code, the Victorian arrangements will prevail. Those arrangements incorporate the provisions of the Tariff Order. VENCorp has proposed in its application that the key elements of the Tariff Order regime be preserved in the Commission's revenue cap determination. In VENCorp' view, this will provide consistency with the provisions of clause 9.8.4(a)(2). The key elements of the Tariff Order regime are discussed further in section 9.3.

To undertake its task, the Commission needs to make informed decisions on the adequacy, efficiency and appropriateness of the opex planned by VENCorp to meet its present and future service requirements. To this end the Commission engaged PB Associates to review VENCorp's opex program. The results of PB Associates' review are summarised in section 9.4.

9.3 VENCorp's original application

9.3.1 Forecast revenue requirement

VENCorp broadly categorises its revenue requirement into 3 types:

- net opex, eg. staff, administration, consultants;

- committed and planned augmentation charges; and

- SPI PowerNet charges for prescribed services.

VENCorp considers that the transmission arrangements that apply to its ownership, governance and organisation are unique. It is the only TNSP in Australia constituted as a not-for-profit organisation. It owns no transmission assets and has no commercial interest in doing so. Further, VENCorp's corporate objectives require it to be commercially neutral and cost effective in delivering its services. VENCorp's Board is responsible for ensuring that budgeted and actual cost performance are consistent with best practice. These arrangements, in VENCorp's opinion, lead to efficient costs and efficient investment decisions.

Table 9.1 Revenue requirement 2003 to 2007/08 (excl.GST)

Overall Revenue Requirement	**Forecast Financials (in 2002 $M) for year ending 30 June**					
	2003 (6 months)	2004	2005	2006	2007	2008
Net Operational Expenditure	2.7	5.4	5.5	5.9	5.9	6.1
Committed Annual Augmentation	5.9	10.9	10.6	10.2	9.7	9.5
Planned Annual Augmentation charges	0.2	3.6	7.5	12.2	15.6	17.2
Total VENCorp forecast expenditure	**8.8**	**19.9**	**23.6**	**28.3**	**31.2**	**32.8**
SPI PowerNet Prescribed Service charges	122.1	238.4	237.5	234.8	232.9	231.7
Total costs to be recovered through TUoS by VENCorp	**130.9**	**258.3**	**261.1**	**263.1**	**264.1**	**264.4**
Energy (GWh)	24,395	50,062	50,995	52,003	52,835	53,628
Victorian TUoS charges ($/MWh)	5.4	5.2	5.1	5.1	5.0	4.9

Proposed revenue cap arrangements

VENCorp's MAR is currently determined by the Commission under the Victorian Tariff Order. As noted previously, clause 9.8.4(a)(2) of the code provides that where there is an inconsistency between the Tariff Order (part of the Victorian regulatory arrangements) and the code, the Tariff Order will prevail.

In VENCorp's opinion, preserving the key features of the Victorian regulatory regime would be consistent with clause 9.8.4(a)(2) of the code, and would clarify the regulatory arrangements that will apply from 1 January 2003. Essentially, those key features currently provide that VENCorp's revenue is to be determined on a full cost recovery but no operating surplus basis, and is to be adjusted annually to account for differences between actual and forecast costs.

VENCorp has therefore proposed that its revenue cap contains mechanisms to ensure:

- VENCorp is able to adjust, subject to approval by the Commission, its TUOS charges once each year to adjust for any over-recovery or under-recovery of revenues from previous years, which may arise for any reason including variations between actual operating forecasts and forecasts of operating costs used by the Commission to set VENCorp's revenue cap; and

- VENCorp is able to adjust its TUOS charges once each year to reflect and recover the costs of new network augmentations in the year in which these assets enter service, regardless of whether or not the actual costs of these augmentations have been included in the forecast of costs used by the Commission to set VENCorp's revenue cap, subject to the requirement that any new augmentation is demonstrated to be economically justified through the application of the regulatory test.

VENCorp believes that applying Part B, Chapter 6 of the code to its revenue determination, in particular the building block approach to setting maximum revenue and the CPI-X form of regulation, is inappropriate to VENCorp's circumstances as its capital structure and cost forecasts make no provisions for unforseen changes. Hence, the need for the proposed pass-through mechanism.

Net opex

Table 9.2 Forecast net opex 2003 to 2007/08 (excl. GST)

Planned Cost	Forecast Financials (in 2002 $'000) for Year ending 30 June					
	2003	**2004**	**2005**	**2006**	**2007**	**2008**
Labour	2,235	2,357	2,436	2,636	2,722	2,814
Contracted Services	219	204	205	209	211	212
Computing and Communications	506	467	469	479	480	486
Consultancies and Contractors	573	534	546	559	570	582
Occupancy	168	168	168	168	168	168
Vehicles and travel	161	164	166	174	176	179
Administrative	44	44	44	44	44	44
Service allocations	1,265	1,318	1,320	1,397	1,385	1,442
Depreciation	258	277	315	378	329	2825
Operational Expenditure	**5,429**	**5,533**	**5,668**	**6,045**	**6,087**	**6,209**
Consulting and other income	(120)	(120)	(120)	(120)	(120)	(120)
Interest income	-	(100)	(100)	(100)	(100)	(100)
Bank fees and financial expenses	73	72	70	68	67	65
Non TUoS Revenues	**(47)**	**(148)**	**(150)**	**(152)**	**(153)**	**(154)**
Net Operational Expenditure	**5,382**	**5,385**	**5,518**	**5,893**	**5,934**	**6,055**

VENCorp proposes that its net opex be subject to an aggregate cap of $31.5 million over the regulatory period. VENCorp proposes to apply to the Commission for a pass through of additional costs if opex is forecast to exceed the aggregate cap.

VENCorp expects to undertake additional work during the regulatory period which will lead to a modest increase in opex, including:

- increasing its in-house technical and analytical capability to plan and facilitate an expected increase in the number of augmentations;

- technical analysis of generator connection applications is expected to increase;
- technical and commercial analysis of entrepreneurial interconnectors;
- continuing impact of code changes on VENCorp's resources;
- VENCorp's statutory electricity functions will commence bearing some of the communication department's costs due to new responsibilities. Risk management and compliance costs will also be partly allocated to statutory electricity bodies; and
- the requirement for VENCorp to obtain local government planning and building permits for significant augmentations.

Network augmentation expenditure

VENCorp utilises probabilistic planning and investment criteria consistent with the Commission's regulatory test, with most projects justified on the basis of expected economic net benefits. This is achieved by considering the major costs and benefits of augmenting the network over a range of scenarios tested against a range of alternatives. VENCorp's planning is aimed at ensuring the maintenance of power system security following the loss of the most critical transmission element at times of peak demand.

VENCorp undertook a major review of its planning and investment criteria in 2001 as these are a key determinant of service standards. The review concluded that a probabilistic approach should continue to be used.

Load forecasts

The National Institute of Economic and Industry Research has produced load forecasts for a variety of scenarios to 2015/16 which include annual energy consumption and half hour Maximum Demand for summer and winter. The forecasts enable VENCorp to assess the adequacy of future electricity transmission.

Committed projects

There are two categories of projects:

- long-term contracts under which payments are made to SPI PowerNet (non-prescribed services) and other TNSPs for transmission services; and
- contracts that will be rolled into SPI PowerNet's RAB from 1 January 2003 – payments will be included in SPI PowerNet's prescribed services charges to VENCorp.

Planned augmentations

Load growth, new loads or generators, and service standard requirements are among the factors driving the need for new augmentations. VENCorp has provided four different scenarios and applicable annual charges in its application. As scenarios 2 and 4 have a higher level of uncertainty, VENCorp has not included those scenarios in its estimated augmentation costs over the regulatory period.

Service standards

VENCorp's contracts with TNSPs for the provision of network services define service standards and usually include performance incentives. VENCorp recognises the need to link regulated revenues to defined service standards. However, it states that any changes to existing service standards by the Commission may cause a change in the cost to VENCorp of procuring network services.

Service standards are more fully discussed in Chapter 7 of this decision.

9.4 Consultant's report

PB Associates was engaged by the Commission to undertake a review which analyses and comments on matters in relation to the contribution of opex to VENCorp's delivery of transmission services. The review also examined VENCorp's committed and planned augmentation charges.

The main findings of PB Associates' review are:

- VENCorp's costs, except for its relatively small opex cost, are either contestable or subject to regulation. Cost overruns cannot be absorbed internally and it is not clear what purpose is served by using an incentive based regulatory model;
- the planning and forecasting methodologies used should ensure that only necessary expenditure is committed. The approach proposed by VENCorp should deliver acceptable regulatory outcomes;
- the $0.7 million increase in opex over the regulatory period is considered appropriate;
- the mechanism for allocating costs is considered appropriate;
- PB Associates is satisfied that the VENCorp planning process undertaken is a reasonable and robust process and ensures that only necessary and efficient expenditure is included in the forecast;
- PB Associates considers that the process employed in the development and application of load growth forecasts is reasonable and in accordance with industry best practice. The use of short-term ratings, dynamic ratings, network operation and control have been considered where appropriate;

Net opex

In view of VENCorp's additional responsibilities over the regulatory period due to augmentations, new generator connection applications, code changes and other factors the $0.7 million increase in opex over the period is considered appropriate. Net opex has been significantly influenced by a decrease in interest income arising from inter-regional settlement residues.

PB Associates considers the cost movements from the historical levels to those proposed in the regulatory period to be appropriate.

Network augmentation planning and expenditure

VENCorp is proposing a small number of planned projects above those projects already committed. Consequently, expenditure requirements will be sensitive to individual project outcomes. Under the regulatory test, the timing and costs of these projects is beyond the control of VENCorp.

PB Associates agrees that VENCorp's augmentation process and criteria are consistent with the regulatory test. VENCorp's planned projects as listed in scenario 1, section 7 of its application, were examined as part of PB Associates' review. VENCorp has based its application on scenario 1 and PB Associates considers that scenario to be appropriate.

The projects include:

4th 500 kV line project and associated 1000MVA transformer at Cranbourne or Rowville

This project has undergone the regulatory test and public consultation, receiving general support. There are 2 options, both of which satisfy the regulatory test. The Cranbourne option has been assumed in VENCorp's application. The project is an example of how the probabilistic planning approach can produce options with large variances in capital cost but small variances in NPV.

4th Dederang 330/220 kV transformer and Mt Beauty 220 kV switchgear replacement

This project will be required if SNI becomes operational. There has been some deferment of the project from a strict N-1 deterministic approach. The installation of the new transformer and associated substation works option would appear reasonable.

Upgrade Rowville – Springvale – Heatherton 220 kV lines

This project may be deferred if the Cranbourne terminal station is constructed and loading is transferred to this new station from Springvale and Heatherton.

Upgrade Ringwood 220 kV supply

Some deferment may be possible. It is not clear what deferment may be economic and what costs, if any, may be incurred in mitigating the risk of potential overloads.

Metropolitan 1000 MVA 500/220 kV transformer

Some deferment of this project is possible. The South Morang option is favoured which should maximise the NPV. The installation of the new transformer and associated substation works option would appear reasonable.

Summary

PB Associates concluded that it was difficult to see any systematic attempt to inflate costs associated with the projects. The budgetary estimates appear reasonable for the scope of the works, noting the large variance expected in the estimates.

The main issues relating to the need and timing of the planned projects are:

- 4^{th} 500 kV line and associated substation works – VENCorp has assumed the Cranbourne option ($36 million) in its application, although the Rowville option ($24 million) resulted in higher benefits for most credible scenarios. The net benefits for both options are reasonably close. However, when a provision for switching is included in the Rowville option, the Cranbourne option may be more economic.

- Rowville – Springvale – Heatherton 220 kV line upgrade - may be deferred if the Cranbourne terminal station is constructed and loading is transferred to this new station from Springvale and Heatherton.

- Ringwood 220 kV supply – some deferment may be possible from the estimated timing in VENCorp's application.

Network optimisation

PB Associates states that it is not clear to what extent VENCorp would face optimisation risk for non-contestable augmentations provided by SPI PowerNet. VENCorp would take the planning risk but it is not clear who would take the technology risk that may lead to a lowering of capital value in the future.

Regarding contestable augmentations, VENCorp would face the risk that the asset may no longer be required in the future even though it is committed to ongoing payments for the service. PB Associates concludes that VENCorp could presumably apply accelerated depreciation and pay off contracts earlier in accordance with the draft Regulatory Principles.

VENCorp state that no optimisation should be applied as:

- it is a not-for-profit network planner;

- it has no commercial interest in developing or owning transmission assets; and

- its governance and transparent planning process ensure that only cost effective investments are made.

However, this approach does not necessarily protect VENCorp from the introduction of new technology during the term of its contracts with network service providers. VENCorp has assumed in its application that no optimisation would be applied to committed augmentation projects.

VENCorp follows a comprehensive process to mitigate optimisation risks:

- an Annual Planning Statement is produced;
- each project is assessed under the regulatory test, technical reports are produced, public consultation conducted and Board approval obtained;
- approval is obtained from the ESC for non-contestable work;
- an invitation to tender for contestable work is issued to network service providers; and
- the Board approves tenders for contestable projects.

Efficiency opportunities

VENCorp has not identified opex cost reduction opportunities. However, its industry related Board should provide an incentive for cost minimisation. There should also be incentives for efficiency and effectiveness when considering network augmentations as projects must pass the regulatory test.

9.5 Initial submissions by interested parties

Forecast revenue requirement

While noting PB Associates' conclusion that VENCorp's opex is lower than that of Powerlink and Transgrid's, the EUAA wants VENCorp's costs benchmarked more thoroughly. EUAA recommends that the Commission seek additional transparency in relation to its incentive structure.

Proposed revenue cap arrangements

Powerlink and TransGrid argue that accepting some of VENCorp's proposed arrangements may lead to significant inconsistencies between it and the other TNSPs, unless efforts are made to treat all TNSPs equally.

Powerlink states that VENCorp's proposed annual pass-through of augmentation costs allows it to pass on a higher than estimated cost of capital to customers, something not available to other TNSPs. Powerlink argues that all TNSPs should be treated the same, that is, fix the cost of capital upfront for all TNSPs, or allow pass throughs for changes in the cost of capital via an indexation formula.

Powerlink also states that, for long-term contracts covering a number of regulatory periods, the owner's cost of capital is guaranteed for the entire contract period whereas other TNSPs have their cost of capital reset every five years. Powerlink argues that equity requires either allowing all TNSPs to index their revenues to cover interest rate movements over the life of the assets, or requiring VENCorp to index revenues to reflect interest rate movements and resetting the WACC every five years in line with other TNSPs.

TransGrid supports the annual reset of opex and augmentation expenditure as proposed by VENCorp, subject to Commission approval of the reset. Further:

- TransGrid acknowledges that VENCorp is not affected by commercial incentives due to its not-for-profit nature. It agrees that the CPI-X regime cannot be applied to VENCorp's operations. TransGrid also believes that it is not possible to link commercial incentives with service standards in VENCorp's case;

- TransGrid considers that much of the augmentation work is non-contestable and that SPI PowerNet has a competitive advantage in respect of the existing system. TransGrid also believes that competition in relation to greenfield transmission projects may be less than robust as there are only a small number of bidders in some instances; and

- TransGrid believes that VENCorp's customers may be subject to higher rates of depreciation than allowed for in the Commission's draft *Regulatory Principles*, due to the term of the contract. TransGrid states that the Commission should closely control the term of these contracts.

Network optimisation

Powerlink and TransGrid argue that optimisation risk should apply equally to all TNSPs, including VENCorp. They believe that there are no material differences between VENCorp and the other TNSPS in terms of Board review and application of the regulatory test. Therefore, Powerlink argues that optimisation should apply equally to all TNSPS with no opportunity of a pass-through to customers, or eliminate the risk for all TNSPs.

Service standards

TransGrid states that it is not clear, under the proposed Performance Incentive Scheme (part of the Commission's Service Standards Review), how such performance drivers can apply to a not-for-profit body like VENCorp. It may not be clear if poor performance is due to poor planning and augmentation timing or poor maintenance practices. Under the Victorian arrangements, VENCorp is not responsible for maintaining the network.

9.6 Submissions on the draft decision

The EUCV states that VENCorp must be required to demonstrate that:

- It has identified the lowest possible cost option for achieving the results of the augmentation by way of a transparent process
- Augmentation by the incumbent NSP will result in a higher cost than by the tender process
- Core details of contracts awarded are disclosed, including the number of competent tenders received for any work
- Asset depreciation is included for the asset life and not the contract life
- Tenders from incumbent service providers include only for marginally costing opex, rate of return and interface costs
- The returns granted the contractor do not exceed the WACC granted to the adjacent regulated entity
- VENCorp has staff responsible for awarding and running contracts who are competent to do so and have significant experience as a contractor to ensure variations are properly controlled.

The Queensland Treasury states:

- VENCorp is not materially different to other TNSPs in its augmentation and investment processes. Therefore, it does not have a special argument regarding the application of optimisation risk
- Optimisation risk primarily relates to the way in which the augmentation is specified. A competitive tender process does not guarantee that the service has been appropriately specified. As with other TNSPs the specification function rests with VENCorp
- It remains to be convinced that a not-for-profit structure such as VENCorp's requiring a pass-through of costs associated with optimisation and cost of capital risk provides sufficient incentives for efficient transmission investment
- It is also concerned that this approach may encourage under-capitalisation of transmission entities in an effort to allow the pass-through of regulatory risks
- It is totally unjustified for the Commission to be championing a truly national market on one hand but implementing inconsistent regulatory arrangements across NEM jurisdictions on the other.

AGL comments that allowing a cost pass-through for VENCorp has the potential to pass higher costs onto customers than would otherwise be the case. It states that network regulation should be comparable in all regions. AGL considers that the Commission should a single AARR for the Victorian transmission network on a CPI-X basis without annual adjustments. The single AARR would then be allocated between VENCorp and the network owners.

The EUAA comments that:

- There is a need for more transparency in VENCorp's planning process
- There is a need for more clarity about just what actual rates of return are achieved on network augmentations undertaken by VENCorp
- There is a concern that there may be insufficient effective competition for some augmentation works in the Australian transmission market.

9.7 Commission's considerations

Forecast revenue requirement

Most of VENCorp's costs are regulated or set by competitive processes, with opex being its only directly controllable cost. The Commission notes PB Associates' finding that the $0.7m increase in opex over the regulatory period is considered appropriate. The Commission also notes that PB Associates is satisfied that VENCorp's planning processes are reasonable and robust and ensure that only necessary and efficient expenditure is included in forecasts.

The Commission concludes from these findings and its own analysis that the proposed opex and augmentation expenditure is appropriate.

Proposed revenue cap arrangements

VENCorp's original revenue cap application

In its application, VENCorp proposed arrangements that differed from other TNSPs currently regulated by the Commission. In essence, it submitted arrangements that preserved the key elements of the Victorian Tariff Order regime under which it is presently regulated. VENCorp pointed to clause 9.8.4 of the code as authorising these arrangements which recognised the not-for-profit nature of the organisation and allowed for annual adjustments of its TUoS charges for under and over-recoveries of charges from the previous year, and for new augmentations when commissioned.

VENCorp proposed to maintain these features under the revenue cap decision.

Powerlink has commented that it wants equitable treatment for all TNSPs. It should be noted, however, that the code contains derogations in relation to the economic regulation of VENCorp. Clause 9.8.4 of the code operates to apply the Victorian transmission regulatory arrangements to the regulation of VENCorp's transmission revenues. These arrangements, as defined in clause 9.8.3(b), include the provisions of the Tariff Order.

Further, in the event of an inconsistency between Parts B and C of chapter 6 of the code and the Victorian transmission regulatory arrangements, the latter arrangements will prevail. The Commission notes that the Tariff Order currently provides for the annual adjustment of TUoS charges as submitted by VENCorp in its revenue cap application.

As a result of the interaction of clauses 9.8.3 and 9.8.4 and Part B of the code, VENCorp submitted particular revenue cap arrangements in its application which it believes will be more appropriate to its situation. The Commission noted PB Associates' conclusion that it is not clear what purpose is served by using the CPI-X model for a not-for-profit organisation such as VENCorp. TransGrid concurs with that finding.

Applications for amendments to chapter 9 derogations to the Victorian transmission regulatory arrangements received on 15 October 2002

Since the revenue cap application, The Victorian Department of Natural Resources and Environment has worked with VENCorp to develop code change proposals to clarify the regulatory arrangements applying to VENCorp from 1 January 2003.

Subsequently, on 15 October 2002, the National Electricity Code Administrator (NECA) lodged applications for authorisation of proposed amendments to Victorian derogations contained in chapter 9 of the Code. The applications relate to the Victorian regulatory framework for transmission regulation from 1 January 2003. Victoria is seeking these derogations to ensure that the Code provides adequate recognition of the not-for-profit status of VENCorp.

The proposed chapter 9 changes are:

- Amendments to clarify the operation of the Code in its application to the Victorian transmission sector in relation to the respective roles of VENCorp, SPI PowerNet and any other owner of transmission network assets in Victoria;

- Amendments to enable the ACCC to set VENCorp's final revenue cap under the Tariff Order for the full financial year ending 30 June 2003, following which VENCorp's maximum allowable revenue will be set under the Code. The amendments effectively extend the operation of provisions in clause 4 of the Victorian Tariff Order that apply to the economic regulation of transmission pricing in Victoria for a further six months;

- Amendments to preserve the principles set out in the Tariff Order that govern the economic regulation of VENCorp so that the ACCC will set VENCorp's maximum allowable revenue under new clauses that recognise VENCorp's requirement to recover its actual costs;

- Amendments to ensure that VENCorp is required to adhere to certain principles when preparing its applications for the setting of its maximum allowable revenue by the ACCC, in particular that VENCorp is required to operate on a full cost recovery but no operating surplus basis (i.e. maintaining VENCorp's not-for-profit status); and

- "Housekeeping" amendments to existing derogations as well as amendments to delete a large number of spent provisions.

The Commission is currently considering these applications and generally notes that the proposed arrangements are similar to the current arrangements specified for VENCorp under the code.

Net opex

VENCorp's net opex is small, capped, and increases modestly over the regulatory period. A significant factor in the quantum of its net opex is the reduction of interest income from previous years. VENCorp has provided the Commission with historical costs and forecasts for the regulatory period, and explanations for any increases.

Network augmentation expenditure

The Commission notes that PB Associates found VENCorp's planning processes and expenditure to be appropriate, with planned augmentations satisfying the regulatory test (unless such projects are not yet at the detailed planning stage, in which case there is further detailed analysis still to be performed). PB Associates also found the load growth forecasting process to be reasonable and in accordance with industry best practice. Additionally, VENCorp's budgetary capital cost estimates used for planning projects appeared reasonable for the scope of works. In its review, PB Associates examined the implementation of certain planning decisions and found the process followed was appropriate in the projects reviewed. The Commission is therefore, satisfied that VENCorp's forecast augmentation expenditure is appropriate and reasonable.

Network optimisation

VENCorp believes that it has a comprehensive risk mitigation process in place in respect of potential optimisation, bearing in mind that it does not own transmission assets itself. VENCorp further believes that optimisation should not apply as it is a not-for-profit body and projects must pass the regulatory test and review by its Board. PB Associates agrees the risk of asset stranding is low, especially in the short term.

The Commission acknowledges Powerlink's concerns that optimisation risk should apply equally to all TNSPs. However, it is recognised that VENCorp is not the owner of the assets at risk. Rather, the risk it bears is in relation to any commitment to make payments under contractual agreements to asset owners where the asset has been optimised by the Commission out of that asset owner's regulatory asset base.

The Commission is presently considering how optimisation risk should apply to VENCorp, and intends to address this matter as part of its overall guidelines on the application of optimisation to TNSPs to be included in its finalised *Regulatory Principles*.

9.8 Total revenue

As the result of the analysis provided by PB Associates and the Commission's considerations, the Commission accepts the augmentation capex and opex claim made by VENCorp, but amends the forecast SPI PowerNet Prescribed Services charges as follows:

- SPI PowerNet's nominal dollar amounts, as calculated by the Commission, have been multiplied by 83% (VENCorp had proposed a figure of 86% as an estimate of how much of SPI PowerNet's total charges relate to the shared network. However, recent figures have averaged about 82.8% and little change in this allocation of charges is anticipated);

- This figure was then converted to 2002 real dollars, as quoted in VENCorp's application, employing the same inflation rate applied to SPI PowerNet; and

- An annual availability rebate of $6m payable by SPI PowerNet in defined circumstances was then deducted to arrive at the final charges (it was also necessary to adjust for the difference in financial years between the two organisations).

The Prescribed Services charges to be included in VENCorp's costs are as follows

Table 9.1 SPI PowerNet charges 2003 to 2007/08 (in 2002 $m, excluding GST)

	2003 (6 mths)	2003/04	2004/05	2005/06	2006/07	2007/08
Total revenue	**110.0**	**212.4**	**214.2**	**216.1**	**218.1**	**220.2**

These amended SPI PowerNet Prescribed Services charges have been added to VENCorp's opex and augmentation capex requirement. The Commission accordingly grants a total revenue requirement over the regulatory period as follows:

Table 9.2 VENCorp revenue from 2003 to 2007/08 (in 2002 $m, excluding GST)

	2003 (6 mths)	2003/04	2004/05	2005/06	2006/07	2007/08
Total revenue	**118.8**	**232.3**	**237.8**	**244.4**	**249.3**	**253.0**

In summary, the revenue path detailed above encompasses a transition from the Tariff Order regime to regulation under the code which incorporates certain Victorian derogations. The effect of the derogations is to recognise the not-for-profit status of VENCorp and to preserve key elements of the Tariff Order regime in the determination of VENCorp's revenue requirement.

Attachment A – Submissions in response to the applications

In response to the Commission's call for submissions on SPI PowerNet's and VENCorp's applications and the consultants reports, submissions were received from:

- Energy Users Association of Australia
- SPI PowerNet
- VENCorp
- Energy Users Coalition of Victoria
- Energy Action Group
- Powerlink
- TransGrid

Attachment B – Submissions in response to the draft decisions

In response to the Commission's call for submissions on the draft revenue cap decisions, submissions were received from:

- Energy Users Association of Australia
- SPI PowerNet
- VENCorp
- Energy Users Coalition of Victoria
- Energy Action Group
- Powerlink
- AusCID
- TXU
- AGL
- TransGrid
- Ergon
- Bob Lim & Co
- Headberry Partners P/L
- Queensland Treasury

Attachment C – Performance indicator definitions

Measure 1 Transmission Circuit Availability

Sub-measures	Transmission circuit availability (critical circuits) Transmission circuit availability (non-critical circuits) Transmission circuit availability (peak periods) Transmission circuit availability (intermediate periods)
Unit of Measure	Percentage of total possible hours available.
Source of Data	TNSP outage reports and system for circuit availability Agreed Schedule of Critical Circuits and plant Nominated peak / off-peak hours Currently peak – 7:00 am to 10:00 pm weekdays Or as otherwise defined by the TNSP/NEMMCO Off peak – all other times May include intermediate time periods and seasonal periods
Definition/Formula	Formula: **No hours pa defined (critical / non-critical) circuits are available x 100** **Total possible no of defined circuit hours** Definition: The actual circuit hours available for defined (critical/non-critical) transmission circuits divided by the total possible defined circuit hours available. Note that there shall be an annual review of the nominated list of critical circuits / system components
Exclusions	Exclude unregulated transmission assets. Exclude connection assets Exclude from 'circuit unavailability' any outages shown to be caused by a fault or other event on a '3rd party system' e.g. intertrip signal, generator outage, customer installation (TNSP to provide list) Force majeure events
Inclusions	'Circuits' includes overhead lines, underground cables, power transformers, phase shifting transformers, static var compensators, capacitor banks, and any other primary transmission equipment essential for the successful operation of the transmission system (TNSP to provide lists) Circuit 'unavailability' to include outages from all causes including planned, forced and emergency events, including extreme events

Measure 2 Loss of Supply Event Frequency Index

Unit of Measure	Number of significant events per annum
Source of Data	TNSP outage reports and system for circuit availability
Definition/Formula	Number of events greater than 0.05 system minutes per annum Number of events greater than 0.3 system minutes per annum Such that: - a 0.05 system minute event has a return period of one year - a 0.3 system minute event has a return period of two years
Exclusions	Exclude unregulated transmission assets (e.g. some connection assets) Exclude any outages shown to be caused by a fault or other event on a 'third party system' e.g. intertrip signal, generator outage, customer installation Planned outages Force Majeure events
Inclusions	All unplanned outages exceeding the specified impact (i.e. 0.05 minutes and 0.3 minutes) Includes outages on all parts of the regulated transmission system Includes extreme events

Measure 3 Average Outage Duration

Sub-measures	Transmission lines Transmission transformers/plant
Unit of Measure	Minutes
Source of Data	TNSP Outage Reporting System
Definition/Formula	Formula: $\frac{\text{Aggregate minutes duration of all unplanned outages}}{\text{No of events}}$ Definition: The cumulative summation of the outage duration time for the period, divided by the number of outage events during the period
Exclusions	Planned outages Excludes momentary interruptions (< 1 minute) Force majeure events
Inclusions	Includes faults on all parts of the transmission system (connection assets, interconnected system assets) Includes all forced and fault outages whether or not loss of supply occurs

Measure 4 Hours of Binding Constraints (Intra-regional)

Unit of Measure	Hours per annum
Source of Data	NEMMCO and TNSP
Definition/Formula	Formula: Aggregate number of hours per annum that binding constraints exist on any part of the interconnected transmission system within a region (excludes interconnectors)
Exclusions	Hours of binding constraints at or near (>95 percent) the capacity determined by the constraint equation describing all transmission elements in service Excludes connection assets Hours of binding constraints where non-credible generation contingencies coincide with previously notified planned outages Force majeure events
Inclusions	Includes binding constraints requiring 'out-of-merit-order' scheduling of generation or rotational load shedding Includes binding constraints from all causes including planned, forced and emergency events, including extreme events

Measure 5 Hours of Binding Constraints (Inter-regional)

Unit of Measure	Hours per annum
Source of Data	NEMMCO and TNSP
Definition/Formula	Formula: Aggregate number of hours per annum that binding constraints exist on a inter-regional interconnector. Hours of binding constraints to be accumulated against 'importing' TNSP.
Exclusions	Hours of binding constraints at or near (>95 percent) the capacity determined by the constraint equation describing all transmission elements in service Hours of binding constraints where non-credible generation contingencies coincide with previously notified planned outages Any event which was clearly as a consequence of action or inaction of another TNSP Force majeure events
Inclusions	Events where binding constraints occur due to unavailability of interconnector support assets Includes binding constraints from all causes including planned, forced and emergency events, including extreme events

Definition of Force Majeure

For the purpose of applying the service standards PI scheme to SPI PowerNet, "Force majeure events" means any event, act or circumstance or combination of events, acts and circumstances which (notwithstanding the observance of good electricity industry practice) is beyond the reasonable control of the party affected by any such event, which may include, without limitation, the following:

- Fire, lightning, explosion, flood, earthquake, storm, cyclone, action of the elements, riots, civil commotion, malicious damage, natural disaster, sabotage, act of a public enemy, act of God, war (declared or undeclared), blockage, revolution, radioactive contamination, toxic or dangerous chemical contamination or force of nature

- Action or inaction by a court, NEMMCO, Government agency (including denial, refusal or failure to grant any authorisation, despite timely best endeavour to obtain same)

- Strikes, lockouts, industrial and/or labour disputes and/or difficulties, work bans, blockades or picketing

- Acts or omissions (other than a failure to pay money) of a party other than the TNSP which party either is connected to or uses the high voltage grid or is directly connected to or uses a system for the supply of electricity which in turn is connected to the high voltage grid

- Where those acts or omissions affect the ability of the TNSP to perform its obligations under the service standard by virtue of that direct or indirect connection to or use of the high voltage grid.

To avoid doubt where such an event occurs, force majeure specifically includes the event when the outcome includes:

- The collapse of four or more consecutive intermediate transmission line towers

- The loss of or damage to two or more switch bays in a terminal station or substation

- The loss of or damage to 11 or more control or secondary cables

- The loss or damage to two or more transformers and capacitors, either single or three phase, connected to a bus.

- The loss of or damage to a transformer, capacitor bank, reactor, static var compensator, or synchronous condenser, which loss or damage is not repairable on site according to normal practices.

This is not intended to limit the definition of force majeure rather to provide guidance in its application.

Attachment D – Performance targets and incentives

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Indicator	Historical performance					Performance for maximum penalty	Lower Deadband	Performance target	Upper Deadband	Performance for maximum reward	Weighting Factor	Maximum decrease in AR (%)	Maximum increase in AR (%)
	96/97	97/98	98/99	99/00	00/01								
Total circuit availability (%)	99.41	99.46	99.19	99.54	99.49	98.65	99.20	99.20	99.20	99.50	0.20	-0.100%	0.100%
Peak critical availability	99.95	99.94	99.90	99.94	99.95	99.40	99.90	99.90	99.90	99.95	0.15	-0.075%	0.075%
Peak non-critical availability	99.93	99.90	99.75	99.97	99.96	99.53	99.85	99.85	99.85	99.95	0.05	-0.025%	0.025%
Intermediate critical availability	99.88	99.92	99.89	99.93	99.92	99.53	99.85	99.85	99.85	99.95	0.05	-0.025%	0.025%
Intermediate non-critical availability	99.74	99.81	99.89	99.77	99.83	99.50	99.75	99.75	99.75	99.85	0.05	-0.025%	0.025%
Loss of supply event frequency index													
>0.05 minutes per annum	0	3	0	2	2	N/a	N/a	N/a	N/a	N/a	0	0	0
>0.3 minutes per annum	0	0	0	1	1	N/a	N/a	N/a	N/a	N/a	0	0	0
Average outage duration (hours)													
Lines	6.32	24.14	14.46	7.52	6.41	20	10.4	10	8	3	0.25	-0.125%	0.125%
Transformers	6.93	8.52	3.13	5.92	3.97	15	10.2	10	6	3	0.25	-0.125%	0.125%
Minutes constrained (inter-regional)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	0	0	0
Minutes constrained (intra-regional)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	0	0	0

Attachment E – Equations linking performance and penalty/reward

In its annual notification to the Commission of it MAR, SPI PowerNet will include its calculation of 'S'. SPI PowerNet will use the following tables to calculate 'S' at the end of each year. The Commission will audit SPI PowerNet's calculation and approve 'S', making adjustments if necessary. The total 'S' factor is equal to the sum of the individual 'S' factors for each performance target.

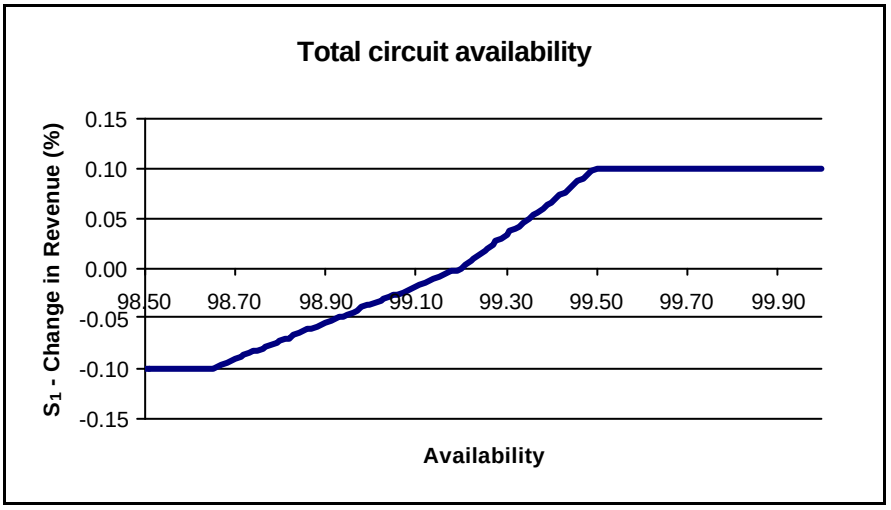
The 'S' factor for each performance indicator is calculated separately as per the equations below, so that:

$$S = S_1 + S_2 + S_3 + S_4 + S_5 + S_6 + S_7$$

Each individual S factor equation has a graph to show the relationship between the performance indicator and the change in revenue. The S factor is used to calculate the MAR as indicated in Chapter 7.7.1 of this decision.

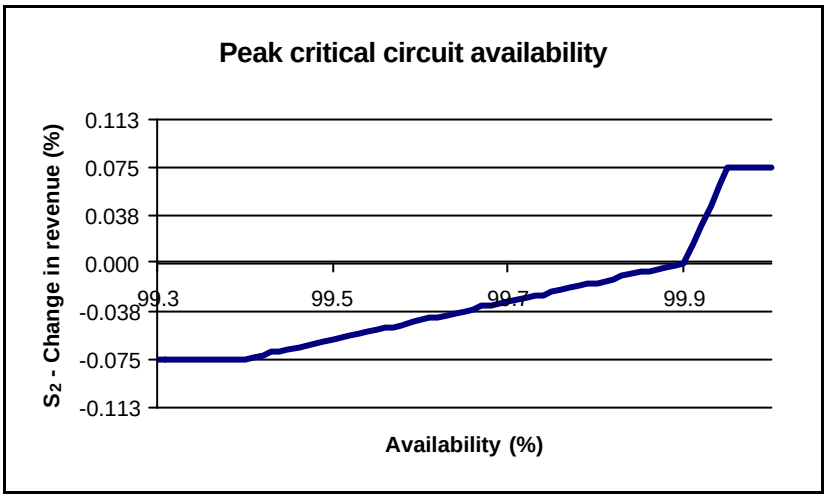
Total circuit availability (%)

							Where:				
S_1	=	-0.00100000						Actual Availability		98.65	
S_1	=	0.00181818	x	Actual Availability	-	0.18036	98.65	≤	Actual Availability	<	99.20
S_1	=	0.00000000					99.20	≤	Actual Availability	≤	99.20
S_1	=	0.00333333	x	Actual Availability	-	0.33067	99.20	<	Actual Availability	≤	99.50
S_1	=	0.00100000					99.50	<	Actual Availability		



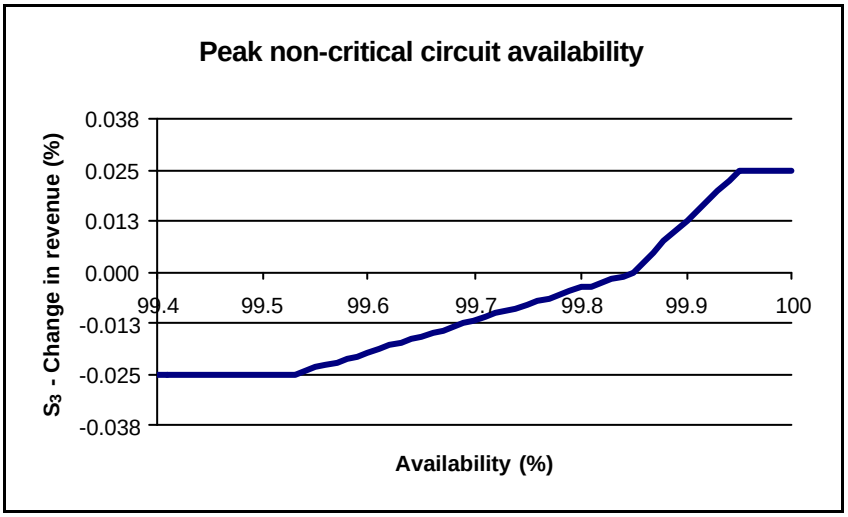
Peak circuit critical availability(%)

							Where:					
S_2	=	-0.00075000							Actual Availability	<	99.40	
S_2	=	0.00150000	x	Actual Availability	-	0.14985	99.40	≤	Actual Availability	<	99.90	
S_2	=	0.00000000							Actual Availability	=	99.90	
S_2	=	0.01500000	x	Actual Availability	-	1.49850	99.90	<	Actual Availability	≤	99.95	
S_2	=	0.00075000					99.95	<	Actual Availability			



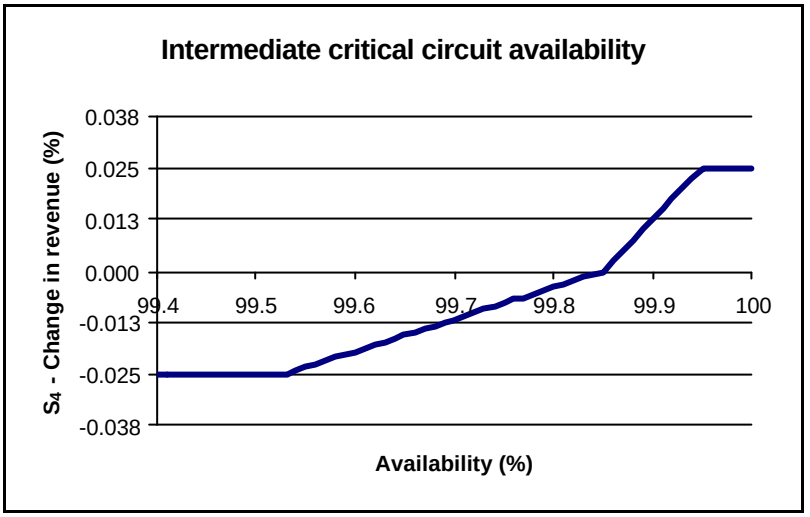
Peak non-critical availability (%)

							Where:					
S_3	=	-0.00025000							Actual Availability	<	99.53	
S_3	=	0.00078125	x	Actual Availability	-	0.07801	99.53	≤	Actual Availability	<	99.85	
S_3	=	0.00000000							Actual Availability	=	99.85	
S_3	=	0.00250000	x	Actual Availability	-	0.24962	99.85	<	Actual Availability	≤	99.95	
S_3	=	0.00025000					99.95	<	Actual Availability			



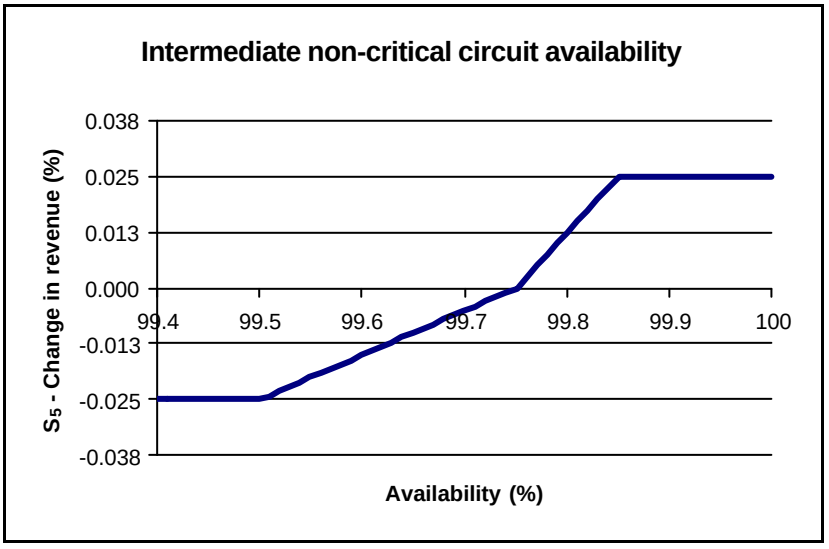
Intermediate critical availability (%)

							Where:					
S_4	=	-0.00025000								Actual Availability	<	99.53
S_4	=	0.00078125	x	Actual Availability	-	0.07801	99.53	≤	Actual Availability	<	99.85
S_4	=	0.00000000								Actual Availability	=	99.85
S_4	=	0.00250000	x	Actual Availability	-	0.24962	99.85	<	Actual Availability	≤	99.95
S_4	=	0.00025000					99.95	<	Actual Availability			



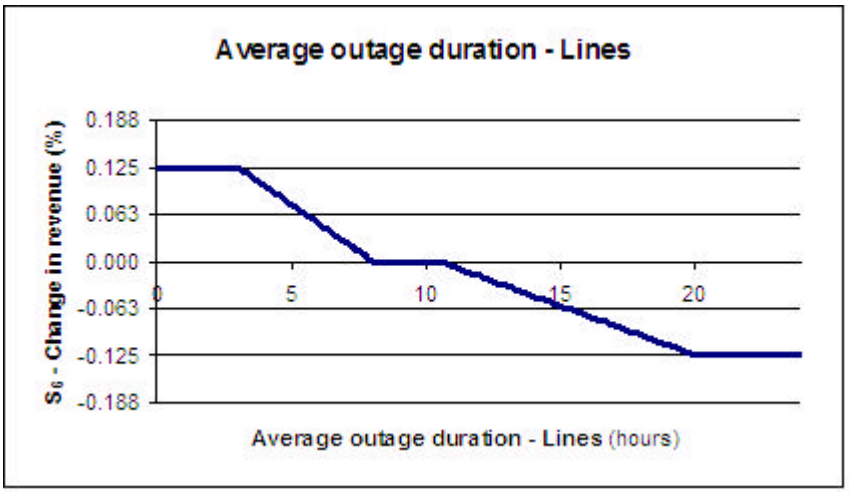
Intermediate non-critical availability (%)

							Where:					
S_5	=	-0.00025000								Actual Availability	<	99.50
S_5	=	0.00100000	x	Actual Availability	-	0.09975	99.50	≤	Actual Availability	<	99.75
S_5	=	0.00000000								Actual Availability	=	99.75
S_5	=	0.00250000	x	Actual Availability	-	0.24938	99.75	<	Actual Availability	≤	99.85
S_5	=	0.00025000								Actual Availability	>	99.85



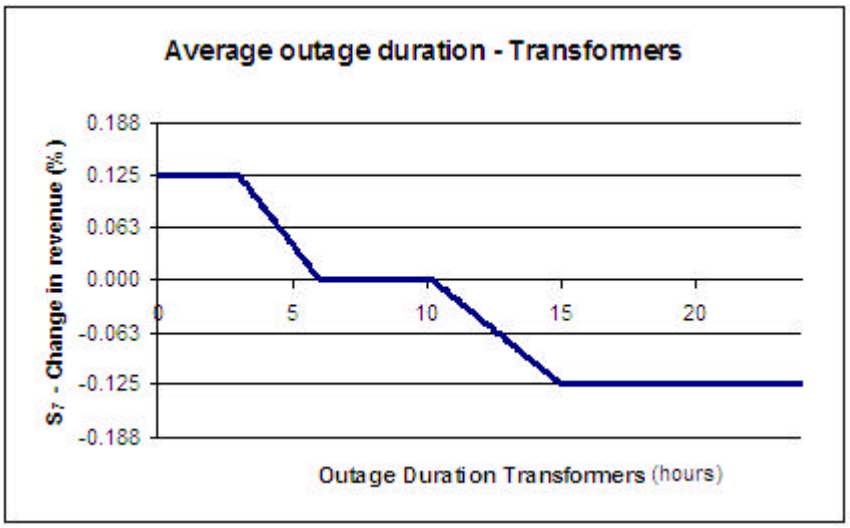
Average outage duration (hours) – Lines

					Where:				
S_6	=	-0.00125000			20.00	<	Average outage duration		
S_6	=	-0.00013021 x	Average outage duration	+ 0.0013542	10.40	<	Average outage duration	≤	20.00
S_6	=	0.00000000			8.00	≤	Average outage duration	≤	10.40
S_6	=	-0.00025000 x	Average outage duration	+ 0.0020000	3.00	≤	Average outage duration	<	8.00
S_6	=	0.00125000					Average outage duration	<	3.00



Average outage duration (hours) – Transformers

					Where:				
S_7	=	-0.00125000			15.00	<	Average outage duration		
S_7	=	-0.00026042 x	Average outage duration	+ 0.0026563	10.20	<	Average outage duration	≤	15.00
S_7	=	0.00000000			6.00	≤	Average outage duration	≤	10.20
S_7	=	-0.00041667 x	Average outage duration	+ 0.0025000	3.00	≤	Average outage duration	<	6.00
S_7	=	0.00125000					Average outage duration	<	3.00



Attachment F – Calculation of Annual Revenue

Establishment of revenue caps and CPI-X adjustment	
Step 1.	
Decision parameters at start of period: - The regulatory asset base (A) - Post-tax WACC	Collect forecast variables for each year of the regulatory periods: - O&M (OM) - Capital expenditure (K) - Change in CPI (ΔCPI) *That is estimate:* *OM(i), K(i), ΔCPI(i), A(I) for i= 1,2,..5*
Step 2.	
Compute Target Revenues (TR) on the basis of forecasts	Sum forecast elements of cost for each year (taking into account any forecast efficiency improvements) to determine total revenue for each year: 1. That is: $TR(i) = OM(I) + A(i)+K(i) - A(i+1)+ r \times A(i) + Tax$
Step 3.	
Choose the revenue cap for Year 1 Usually select AR(1)=TR(1)	The chosen revenue cap that will be used as the basis for the revenue cap in the following years via the CPI-X adjustment mechanism 2. That is: $AR(i) = AR(i-1) \times (1+\Delta CPI(I))\times(1- X)$
Step 4.	
Calculate X	Determine the revenue caps to give same net present value as the target revenues (net of O&M) – using WACC as discount rate 3. That is: *NPV(TR(1),..TR(5)) = NPV(R(1),…R(2))*
Step 5.	
Calculate Maximum Allowed Revenue (MAR)	Annual revenue is adjusted by a service standards performance incentive (PI) as outlined in **Chapter** 7 That is: *MAR (i) = AR(i) + (PI)*

Adjustments At End Year I

Establish Actual Revenue Cap for Year i+1 i.e. AR(i+1) Given: AR(1)=R(1)	Re-apply CPI-X adjustment using CPI outcome for year just past ΔACPI (i) 4. That is: $AR(i+1) = AR(I) \times (1+\Delta ACPI(I)) \times (1- X)$

Adjust Regulatory asset base for next regulatory period

Adjust Regulatory Asset Base for changes in Actual Inflation and Actual Capex	Apply depreciation allowances for period as assessed to asset base based on actual capex

Attachment G – SPI PowerNet's request to exclude 3rd party events

The following is an extract from SPI PowerNet's submission on the Commission's draft decision:

Exclusions

All exclusion clauses for the first three measures should have the following standard clauses:

"Any outage caused by a fault, outage request or other event on a '3rd party system' connected to the TNSP's Network."

"Any outage requested by a 3rd party for construction or demolition activities on land over which the TNSP has an easement."

'In relation to a loss of a double circuit tower, exclude the outage of one circuit following the restoration into service of the other circuit."

"An outage which is requested by VENCorp or a 3rd party to enable VENCorp or a 3rd party to augment the High Voltage Grid, or conduct tests on the High Voltage Grid, either itself or through a contractor."

"An outage which occurs within a period during which a Connected Person does not require the Supply of electricity directly or indirectly from the High Voltage Grid, where that Outage does not affect the Supply of electricity to any other person."

"An outage which is requested by NEMMCO except where the reason for that request is an act or omission of SPI PowerNet."

"A full or partial failure of the Brunswick Terminal Station to Richmond Terminal Station 220 kV Cable system that is caused by damage to a part of the cable which is:

(i) located on, under or overland that is not an SPI PowerNet site; and

(ii) which is inflicted by a person other than SPI PowerNet."

Requested amendment - 6

Include in the Final Decision the service measure exclusion clauses proposed by SPI PowerNet.