

**EnergyAustralia™**

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EnergyAustralia's submission to

Australian Competition &  
Consumer Commission

**Review of Draft Statement of  
Regulatory Principles**

**28 November 2003**

**Energy**



# TABLE OF CONTENTS

<b>TABLE OF CONTENTS</b> .....	<b>1</b>
1. <b>INTRODUCTION</b> .....	<b>4</b>
2. <b>FORM OF REGULATION</b> .....	<b>6</b>
3. <b>ASSET VALUATION</b> .....	<b>7</b>
4. <b>CAPEX</b> .....	<b>9</b>
5. <b>BENCHMARKING</b> .....	<b>11</b>
6. <b>PASS-THROUGH MECHANISMS AND SELF-INSURANCE</b> .....	<b>14</b>
7. <b>WACC</b> .....	<b>17</b>
8. <b>SERVICE STANDARDS</b> .....	<b>18</b>
<b>RESPONSE TO SPECIFIC QUESTIONS PUT BY ACCC</b> .....	<b>19</b>
<b>ENERGYAUSTRALIA'S ROLL-FORWARD</b> .....	<b>21</b>
<b>BENCHMARKING AND COST MODELS</b> .....	<b>28</b>

# 1. Introduction

EnergyAustralia welcomes the opportunity to participate in the ACCC's review of the *Draft Statement of Principles for the Regulation of Transmission Revenues ("DRP")* and to comment on the Discussion Paper released by the ACCC on 29 August 2003.

EnergyAustralia believes that regulatory framework documents should be viewed as living documents, and as such require ongoing maintenance and review. EnergyAustralia is pleased to see the ACCC is undertaking such a review to ensure the regulatory framework document remains relevant and responsive to the needs of customers and the industry alike.

EnergyAustralia has analysed the ACCC's preliminary views and provided what we believe to be constructive comment. In cases where the particulars of EnergyAustralia's transmission business make the ACCC's preferred approaches difficult to apply in practice, EnergyAustralia has attempted to provide alternative approaches to meet the ACCC's needs.

EnergyAustralia believes that there are revisions required to the regulatory framework for the electricity transmission service providers ("TNSP's") in order to support the investment required to meet Australia's long term energy needs. In particular, EnergyAustralia believes that more consideration needs to be given to matters impacting the transition *between* regulatory periods, and that the regulatory framework needs to be flexible enough to address changes in forecast circumstances *within* a regulatory period. In addition, there are some key areas in which the *Discussion Paper* is silent, or requires clarification. These issues are summarised below:

- the move to a price cap needs to be explored as part of any review of the *DRP*. The current form of regulation (fixed revenue cap) does not encourage the efficient use of the network; provides (at best) a neutral incentive to price efficiently and (at worst) an incentive to price inefficiently; provides no mechanism to manage forecast volume risk; and requires an adjustment mechanism to manage changes in actual and forecast revenues which can result in significant year-on-year price shocks;
- a pass-through mechanism needs to be in place that caters for significant and unanticipated events that arise during the period;
- the rules governing the inclusion of capital expenditures into the asset base at subsequent regulatory reviews need to be transparent and communicated *prior* to the commitment of capital;
- the details surrounding how the ACCC proposes to roll forward the Regulatory Asset Base ("RAB") need to be communicated as part of this consultation process. EnergyAustralia notes that the importance of this issue cannot be overstated as it could potentially affect over \$100 million of shareholder value depending on the approach adopted; and
- the rates of return allowed by Australian regulators are low by international comparisons and are insufficient to attract long term investment at required levels to the industry. We note that the Discussion Paper suggests only downward movements in the WACC over time, which would only exacerbate the industry's reluctance to invest at a level beyond that required to meet minimum reliability and duty of care requirements.

We believe that the issues noted above could be addressed without requiring wholesale changes to the underlying incentive mechanisms implicit in the current regulatory framework. Neither the Discussion Paper nor EnergyAustralia's experience offer any indications of wholesale regulatory failure, imprudent investment or declines in service standards. While review is important, EnergyAustralia cautions against the constant "fine tuning" of the regulatory environment at each review. In the absence of clear identification of regulatory failure, fine tuning, in its own right, creates regulatory risk.

EnergyAustralia has recently completed a major overhaul of its corporate governance practices to ensure they align with the disciplines and incentives embodied in the current *DRP*, developed in 1999. Through this process, EnergyAustralia has internalised the current *DRP's* incentives, and applied those disciplines in preparing our forward-looking capital and

operating plans and other financial forecasts that underpinned our September 2003 application to the 2004 – 2009 transmission revenue cap review.

### Timing and status of the DRP review

While EnergyAustralia agrees that the *DRP* should be reviewed regularly to maintain its relevance, the timing and status of the review has given some cause for concern. This is particularly the case given that the current review of the *DRP* overlaps with the process for our revenue Determination for 2004-09. While we appreciate the opportunity to respond to the document released by the ACCC in August 2003, we note that the document is only a Discussion Paper (not a draft or final Decision) and as such does not have any formal status other than to signal the commencement of a consultative process.

The Australian regulatory arena is currently undergoing a significant change. The Ministerial Council on Energy, in response to the Parer review, is currently working towards establishing a single Australian energy regulatory body. At this stage, it is not clear whether the new national regulator will adopt the positions and policies promulgated by the ACCC, including any changes brought about as a result of this review. Presumably the ACCC's role in reviewing the regulatory principles will act as valuable input to the new regulator, but there is some uncertainty as to whether the new regulator will be bound by the ACCC's work.

In any case, the ACCC and the regulated businesses have not yet completed the first regulatory period under the current draft *DRP*. The current period has not been subject to *ex-post* review, and there has been no experience with the transition from one regulatory period to the next.<sup>1</sup> There may be greater knowledge and insight to be gained from examining the framework in light of this additional *ex-post* review and transition experience.

Of primary concern, is that EnergyAustralia believes that it is not reasonable to introduce changes to the regulatory framework while an investigation is in progress. Therefore EnergyAustralia requests the ACCC to provide explicit assurance that the current Determination process for EnergyAustralia's transmission revenues as of 1 July 2004 will be based on the existing *DRP* and will not be based on the issues canvassed in the Discussion Paper. We believe that any revised *DRP* should only become applicable for price reviews that commence subsequent to any changes being finalised and published.

Moreover, EnergyAustralia is concerned that the Discussion Paper does not rule out that any suggested changes to the incentive mechanisms would be implemented from July 2004. We believe it would not be reasonable to implement any changes to incentive mechanisms on an *ex-post* basis and seek clarity on this matter. As an *ex-post* incentive provides no behavioural signals, we can only presume that this is not the Commission's intention.

### Stability of incentive mechanisms

EnergyAustralia considers that ensuring incentives are in place to support long term prudent investment is the core of the regulatory framework. Therefore, changes in incentives should not be taken lightly or introduced without extensive consultation. The incentives in the current regime and the existing regulatory principles have been taken on board and implemented as part of the processes with which we have developed our capital and operating programs.

EnergyAustralia has already formulated its capital and operating plans based on information available to it about the appropriate capex/opex tradeoff within the current framework. This is a point where the costs of undertaking further opex are outweighed by the benefits of new capex. While we have endeavoured to achieve the optimal capex/opex tradeoff in order to manage the risks on the network in a cost effective manner, any changes to the incentive mechanisms applying to capex or opex could distort the point at which the business makes the decision to trade opex for capex (or vice versa) and potentially give it the incentive to move away from an efficient point. This will particularly apply where the relative weighting on capex and opex incentives are changed. This "fine tuning" can have significant impacts on investments moving forward.

The ACCC has asked for comment on the importance of stability in the incentive mechanisms. The fact that the business has internalised the incentive mechanism has

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<sup>1</sup> Importantly, many of the key issues become relevant during the transition from one regulatory period to another.

important implications for the future stability of the “regulatory pact” if further incentive mechanisms are introduced at the “eleventh hour”. If the regulator is seen to change the incentive mechanism at every review, the regulatory framework will lose credibility. Indeed, businesses are much less likely to undertake the investment to adopt procedures to internalise the incentive mechanism if the incentives are only expected to last for one regulatory period.

## 2. Form of regulation

EnergyAustralia is regulated by two economic regulators (IPART and ACCC) for its single electricity network. This has added complexities to EnergyAustralia’s business in several areas and it will become more complex from 2004 as the two regulators will apply different forms of regulation to respective parts of the network that they regulate. Like all TNSP’s regulated under the Code, EnergyAustralia’s transmission assets are subject to revenue cap regulation. In contrast, IPART has recently adopted a weighted average price cap (WAPC) approach to the form of economic regulation for the NSW DNSP’s. EnergyAustralia was a key advocate of the move to a WAPC and applauds IPART in acknowledging the benefits of the WAPC over the pure revenue cap that IPART had previously supported.

EnergyAustralia has a strong preference for a WAPC to be applied consistently to its entire network business. This is based on the following<sup>2</sup>:

### Pure Revenue Cap

- Provides the TNSP with guaranteed income, regardless of services provided;
- The TNSP has no incentive to encourage any use of the network that would result in higher costs, irrespective of whether the benefit to the consumer is greater than the cost to society of that use. This is clearly inefficient, as the business has a financial incentive to minimise the use of the service to the extent that it lowers costs – even if the marginal benefit to customers is greater than the marginal cost to the business of providing the service;
- In the case of a revenue cap, marginal revenues are set by the regulator (in this case to zero) and are completely independent of prices. As a result, the best this form of regulation can hope for is indifference on the part of the business with regards to its prices. However, if the marginal revenue is set above (or below) marginal cost, then this creates an automatic incentive for the business to price below (above) marginal cost;
- Therefore, at best, the revenue cap provides a neutral incentive for efficient pricing and, at worst, an incentive to price inefficiently. This creates strong incentives for inefficiently high prices;
- The revenue cap provides no mechanism to manage forecast volume risk; and
- The revenue cap requires the use of an adjustment mechanism to account for any differences between actual and forecast revenues. This can not only be complex to administer but can also result in significant year-on-year price shocks as the account balance is resolved.

### Weighted Average Price Cap (WAPC)

- A key difference between a WAPC and a revenue cap is that with a WAPC the marginal revenue received for each additional unit varies according to the marginal price charged for that unit, rather than being set to zero (as set by the regulator) for the revenue cap;
- If marginal prices equal marginal costs, then the business has effectively hedged its output. That is, output prices for expected levels and changes in costs are matched by changes in revenues. Importantly, the incentive to match marginal prices to marginal costs is, by definition, an incentive to price efficiently. This incentive exists with the WAPC, but clearly does not exist with the revenue cap.
- The single most important way that a network business can manage the demand for network capacity is through efficient (ie., marginal cost) pricing. This gives customers the appropriate incentive to:

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<sup>2</sup> Adapted from previous EnergyAustralia submissions during the leadup to the IPART’s July 2002 “Notice under clause 6.10.3 of the National Electricity Code - Economic Regulatory Arrangements”. Also adapted from the September 2001 paper from NERA paper titled “*Efficiency Properties of the Form of Price Control – A report for Integral Energy, EnergyAustralia and Country Energy*” which formed part of our submissions.

- reduce total demand for network capacity
- shift demand for network capacity to off peak periods; or
- change the nature of demand for service quality and type (ie., move to interruptible tariffs)
- It gives the business an incentive to reflect all of the marginal cost drivers in marginal prices and the flexibility to adapt them over time as is appropriate;
- It enables volume risk to be managed effectively;
- It provides price stability to customers; and
- It is administratively easy to administer.

EnergyAustralia recognises that the ACCC must apply a revenue cap at the 2004 Determination unless the Code is changed or a derogation were forthcoming, neither of which we believe is possible in the time available for this review. However, we believe that consideration of forms of economic regulation other than a revenue cap should be undertaken during any review by the ACCC of its regulatory principles in order to allow public consultation on this important matter. EnergyAustralia believes that separate consultation on this issue is warranted and requests that this take place before any changes to the existing DRP are finalised.

### 3. Asset valuation

The Code allows the ACCC discretion to determine which methodology it will apply to valuation of TNSPs asset base in this second (and subsequent) round of regulation of TNSPs. The ACCC has the opportunity to provide greater certainty to businesses by signalling its approach to asset valuation in the *DRP*. EnergyAustralia would therefore like to take the opportunity to argue for its preferred approach to asset valuation.

In principle, EnergyAustralia prefers the use of a roll-forward approach to determining the regulatory asset base. This approach significantly reduces the subjectivity associated with other forms of valuation and provides more certainty that prudent and efficient investment will earn a regulatory return over the lives of the assets, provided that appropriate guidance is given by the regulator on an ex ante basis to identify what constitutes “prudent and efficient” investment.

However, before a roll-forward methodology can be supported, it is essential that the starting point be based on an appropriate value of the assets to be regulated. As outlined in its submission to its 2004 price review, EnergyAustralia recommended that a new ODRC valuation be adopted for the 2004 Determination for two reasons:

- the ODRC valuation undertaken in 1999 contained errors and inconsistencies that we considered to be material; and
- the considerable uncertainty surrounding the ACCC’s roll-forward approach due to almost a complete lack of supporting detail and analysis.

While the former is an issue for EnergyAustralia’s 2004 Determination process, the latter is a key issue for the review of the DRP. EnergyAustralia notes that there is no one universally agreed approach to calculating a roll-forward, and in fact there are many variations in the manner in which one could be conducted. Depending on how the ACCC proposed to roll forward the asset base, EnergyAustralia may potentially have \$100 million of prudent investment placed at risk - based on decisions made well after the required investments have taken place.

It is surprising that the ACCC has not provided the specifics of its roll forward approach as part of the Discussion Paper, given that the treatment of capital is of core concern for a regulated network business, and in light of the national attention placed on ensuring incentives are in place to support prudent long term investment. As a matter of principle, EnergyAustralia does not believe that its past investment decisions should be measured by criteria that were not in place when the investments were made.

Before EnergyAustralia could consider supporting a roll-forward approach, the ACCC would need to clearly articulate its position in detail on a number of issues including:

- **Asset methodology** - What is the starting asset valuation methodology and when is indexation applied? What is the index to be used, and what is its basis, timing and derivation?
- **Real versus nominal framework** - Is the framework a real or a nominal one and what impact does this choice have on the timing of indexation in the RAB?
- **Capital expenditure** - How is actual capital expenditure treated if it is above or below forecast? What tests are to be applied to actual capital expenditure to determine whether they should be added to the RAB for the subsequent period, if any, and when are the tests applied? Does the ACCC propose to include a return on and/or a return of capital associated with prudent capital expenditures in excess of allowed amounts?
- **Stranding risk** - How is the stranding of assets managed and what tools are available for the TNSP's to manage stranding risk under the roll-forward?
- **Capital contributions** - How are capital contributions and the associated income tax liabilities managed?
- **Return of capital** – Will the return of capital for the subsequent regulatory period be derived using a return of capital consistent with the determination or using “actual” (ie accounting) depreciation? What are the capital maintenance and pricing objectives supporting the preferred profile and methodology? Are remaining lives reviewed, and if so how, when, and on what basis? How are changes to remaining lives managed? How is indexation managed in the depreciation profile?
- **Capitalisation & holding costs** - When are assets recognised in the RAB? If there is a delay in capitalisation, are the associated holding costs recognised? If so, how are the holding costs calculated?
- **Easements** - How are existing easements valued? How are new easements valued? What is the appropriate index to apply to easements?

While we do not believe that the answers to the above questions should necessarily be controversial, we reserve judgement on the appropriateness of the ACCC's roll forward approach until such time as the above issues are clarified.

The ACCC has asked EnergyAustralia, as part of our Determination process, to provide details of how we propose a roll-forward should be undertaken. EnergyAustralia's recommended methodology is outlined in Attachment 1. It provides our answers to the questions listed above which were put to the ACCC in our September 2003 submission.



## 4. Capex

EnergyAustralia considers that the DRP should provide clarity in four key areas relating to capital expenditure:

- What constitutes “prudent” investment on an *ex ante* basis (i.e. prior to the commitment of capital) for inclusion in the Regulatory Asset Base (RAB), and certainty that prudent and efficient investments (both past and future) will be recognised in the RAB and will receive a regulatory return on and return of capital;
- The use of the Regulatory Test to determine the value of capital expenditure to be included in the RAB;
- The operation of the Regulatory Test to replacement capital expenditure; and
- The treatment of any capex under- or over-spends (relative to “allowed” amounts) for the purposes of establishing the opening RAB at future regulatory reviews (see Attachment 1).

### Role of the Regulatory Test in prudence review

The National Electricity Code’s (NEC) Regulatory Test is a valuable part of the overall capital planning process. This test formalises the process of examining the potential alternatives before a network augmentation is constructed. EnergyAustralia, conscious that an augmentation proposal must pass the Regulatory Test, includes the investigation of non-network alternatives in its planning process. Its final report therefore includes the analysis of alternatives to network augmentation.

EnergyAustralia considers that the Regulatory Test has an important, though not definitive, role to play in the assessment of the prudence of capital expenditure. In particular, EnergyAustralia considers that clearance of the Regulatory Test should be a key determinant in an *ex ante* assessment of the prudence of capital expenditure, and one of a possible group of tests to be conducted in an *ex post* review of prudence.

### Use of the Regulatory Test for replacement capex

The Code requires that TNSPs apply the Regulatory Test to augmentation capex where the project cost is greater than \$10million. The test for ‘small’ network augmentations (projects costing between \$1m - \$10m) is less formal and utilises the planning and reporting requirements in the NEC. The NEC currently does not require the Regulatory Test to be promulgated for replacement capex.

In its Discussion Paper, the ACCC has put forward a preference for using the Regulatory Test to determine the prudence of replacement capex. It appears as though the ACCC suggests that the only way to determine prudence of replacement capex is by applying the Regulatory Test. EnergyAustralia does not support this position.

EnergyAustralia believes that replacement capex for major projects should be based on a least cost approach, and that significant changes to the Regulatory Test would need to be made prior to it being used to determine the prudence of replacement capital expenditure.

Refurbishment capex is usually required for the following reasons:

- To maintain duty of care and safety;
- To maintain reliability of the system by mitigating against unacceptable risks of forced outages or unsustainable levels of planned outages; or
- To replace equipment which is uneconomic to maintain.

Generally, refurbishment/replacement capex is driven by a combination of the above factors. In EnergyAustralia’s case, the major drivers of replacement capex are either duty of care or reliability, which we argue should be judged on the basis of least costs rather than on the basis of a market benefit approach.

EnergyAustralia is opposed to applying the current form of the Regulatory Test to replacement capex as the Code does not require a TNSP to do this and the test itself was not designed with replacement capital in mind.

Applying the current form of the Regulatory Test has the following problems:

- It would be extremely difficult to develop alternative options to undertaking replacement capex;
- The value of the Regulatory Test is as a planning tool when there are several viable options to assess and select. In the case of refurbishment capex, there is often a single viable option; and
- It is not clear whether the same threshold will apply or whether the ACCC intends TNSPs to apply it for every refurbishment dollar spent.

ACCC have also indicated a preference for using the Regulatory Test to indicate whether investment in replacement capex has aligned with industry best practice. Further, ACCC appears to want to use the Regulatory Test to judge whether the timing of the investment was appropriate. EnergyAustralia is concerned that there is no indication as to how the ACCC might use the test to determine either of these things. EnergyAustralia therefore believes it is inappropriate to apply a test without further guidance as to how it will be used.

EnergyAustralia welcomes scrutiny of its philosophy and criteria for investment in replacement capital. EnergyAustralia supports the use of rigorous analysis to determine the most cost effective targeting of replacement capex and has set out its replacement program in its submission to the ACCC for the revenue reset which is the subject of consultation. EnergyAustralia believes that it is important that the ACCC consider this program prior to making its determination and should not retrospectively review the *philosophy* behind the program.

However, EnergyAustralia does not believe that individual replacement projects should be the subject of public scrutiny as would need to be the case if the Regulatory Test were applied. We believe that replacement programs (like operating and maintenance programs) are tools the business uses to mitigate the risks associated with operating its network. Public scrutiny of each and every replacement project may hinder the business's ability to effectively and flexibly manage this risk.

EnergyAustralia believes that it is appropriate that the ACCC scrutinise the behaviour of the business at the end of the period to determine whether it has in fact undertaken its replacement program in line with previously stated investment criteria.

### Using the ACCC Regulatory Test value as the value of capex

The Regulatory Test is an important part of the overall capital expenditure planning process. However, it is important to realise that the Regulatory Test often occurs prior to tendering and often prior to finalisation of designs. The Code requires that the Regulatory Test must be satisfied not more than 12 months before construction. This means that environmental approvals must be carried out in advance of, or in parallel with consultation as part of the Regulatory Test.

In EnergyAustralia's experience, the completion of the Environmental Impact Study and the engineering design can significantly influence the final cost outcomes of the project. Where these processes have not been completed prior to consultation for the Regulatory Test, there is the potential that the Regulatory Test and the final project costs may differ. A move to use the Regulatory Test value as the capital expenditure value for roll forward purposes could expose the business to the risk of losing a return on investment that was prudent but that was the result of changes outside of the businesses control that occurred subsequent to the Regulatory Test being undertaken.

Exposing the business to the risks of exogenous cost variability will invariably be met with action to manage that risk. This might be manifested in inflated cost estimates input into the Regulatory Test, or significant contingency allowances built into the cost estimates. While this action may give slightly greater confidence to the ACCC that the turnout cost of the preferred build option will be lower cost than the examined alternatives, the integrity of the Regulatory Test would be preserved if it is conducted on genuine cost estimates, recognising that the turnout costs may vary from those estimates.

EnergyAustralia believes that the value of capex considered in the Regulatory Test should not be used to determine what should be allowed in a roll forward of the RAB. The Regulatory Test requires sensitivity analysis to be applied to several items, including timing and construction cost. EnergyAustralia considers that the results of this sensitivity analysis can act to provide important information to the ACCC on the prudent cost of the capital expenditure.

EnergyAustralia proposes that, where the turnout cost has come within the boundaries defined by the Regulatory Test sensitivity analysis, this should be considered as an indication that the costs have been prudently incurred. However, other matters may have arisen that were not considered in the sensitivity analysis. Where the turnout cost falls above the boundary defined by the sensitivity analysis, the business should have an opportunity to submit additional cost information to give the ACCC comfort that the turnout costs were prudently incurred.

EnergyAustralia recommends using the actual installation costs of network augmentations rather than the Regulatory Test values for RAB roll forward purposes.

#### Treatment of capex under- or over- spends

EnergyAustralia believes that capital spent should be treated in the same manner regardless of whether it was forecast prior to the beginning of the period or not. There are numerous factors that can impact on a TNSPs capital program which are outside the control of the TNSP. EnergyAustralia therefore believes that the business should not be penalised for its ability to forecast events, or trends which may not have been observable at the time the review takes place.

EnergyAustralia therefore believes that the criteria for capital spend being added to the RAB must be related to prudence and efficiency and not related to whether a project was forecast or not. Appropriate holding costs must also be recognised where capex has not been forecast and therefore not included in the revenue cap.

## 5. Benchmarking

EnergyAustralia acknowledges that benchmarking can play a valuable role in assisting the regulator in setting a sustainable revenue stream for the subject business, but cautions that benchmarking should only ever be “one tool in the toolkit”. In theory, benchmarking can provide regulators with an exogenous measure by which to compare “similar” businesses in order to set expenditure levels. This would also provide businesses with the clear profit incentive to outperform the benchmarks on which their revenues were based.

The ACCC has frequently commented that greater reliance on benchmarks can be accompanied by a lower need for additional incentive mechanisms. This is because the endogenous cost build up process is fraught with information asymmetry, which develops information rents. Benchmarking and incentive mechanisms are the regulator’s tools to reduce these rents.

At best, benchmarking can identify a range, the “goalposts”, in which the business’ reasonable cost might be expected to fall. In practice, however, the benchmarking of costs does little to reveal the “point estimate” of the efficient costs of the regulated business in question. Benchmarks do not, and we believe cannot, be adjusted in any sensible manner that adequately takes account of the operating environment of the individual businesses.

Indeed, the low degree of comparability and the high degree of data adjustments required in benchmarking EnergyAustralia's transmission business would render the range of possible values so wide as to negate any information value from the benchmarking process. Therefore, EnergyAustralia submits that it is not reasonable to benchmark EnergyAustralia with other Australian or overseas electricity transmission businesses as the primary means for setting expenditure levels, for a number of reasons.

EnergyAustralia's transmission business exists by virtue of a definition in the *National Electricity Code*. It did not arise as a result of any structured approach to system planning or good industry practice. Therefore it is not surprising to find that EnergyAustralia's transmission business is unique relative to other Australian and overseas transmission businesses and therefore it is not reasonable to benchmark it against other TNSPs in the NEM to determine the reasonableness of its opex, capex, or total costs.

EnergyAustralia's operating and business conditions are quite atypical, as shown in the table below. This table has been taken from the ACCC's revenue determination for Transend. The data for EnergyAustralia and TransGrid has been calculated on the basis of information contained in the respective revenue reset submissions to ACCC.

**Table 1 - Comparison of TNSP opex ratios**

	OPEX / line length (circuit \$'000/km)		OPEX / substation (\$'000)		OPEX / asset base (%)		OPEX / MW peak (\$'000/MW)		OPEX / GWh (\$'000/GWh)	
	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank
Powerlink	5.8	1	760	3	2.2%	1	9.8	2	1.6	2
SPI Powernet	11.6	5	1,733	6	3.8%	3	9.3	1	1.5	1
Electranet	7.7	2	631	1	4.2%	5	15.1	5	3.6	6
Transend	9.1	3	709	2	4.2%	4	19.6	6	3.1	5
TransGrid	10.5	4	1,606	5	5.6%	6	11.4	3	2.0	3
EnergyAustralia	28.8	6	974	4	3.7%	2	12.3	4	2.1	4

Source: ACCC, Tasmanian Transmission Network Revenue Cap 2004-2008/09 - Draft Decision. Opex ratios are calculated as the average opex ratio for the period from 2004 through the end of the current regulatory period.

EnergyAustralia's opex costs rank near the top of the list in opex per value of asset base, but last in terms of opex per line length.

The ACCC's own data indicates that the opex drivers are different by business, and therefore this should draw into question the reasonableness of benchmarking the Australian TNSPs against each other. Given that the European and North American comparators are also very different (being driven by interregional electricity trade and facing vastly different regulatory regimes, taxation policies, purchasing power parity impacts, etc.) they will not be useful for benchmarking Australian TNSPs. This suggests that any benchmarking of the TNSP will have to be conducted against its own historical performance, if at all.

For benchmarking capex, it is not reasonable that the regulator would seek to benchmark capex against historic performance, as the investment pattern of a TNSP during one five-year period is not likely to be the same in the next. In fact, the investment cycle for a TNSP is likely to be in excess of 30 years and therefore, it is not appropriate that a shorter (5 year) timeframe be applied.

## Capex and opex benchmarking

EnergyAustralia considers that an analysis of efficient capex and opex should have regard to an appropriate balance of capex and opex based on the age of the assets and the company's risk profile.

In managing an electricity network, there is a tradeoff between opex and replacement capex. Generally, replacement capex becomes economic when it avoids a sufficient level of ongoing opex.

### Menu of tariff options

In section 7.4 of the ACCC's discussion paper, the option of a menu of tariff options is discussed. In essence, the ACCC comments that a greater reliance on exogenous information in the price setting process will allow higher powered incentives to be used.

As discussed above, EnergyAustralia is not confident at this time that the ACCC will be able to assemble a sufficiently robust package of information on which to base an exogenous assessment of EnergyAustralia's costs. EnergyAustralia would not be comfortable, accepting a high powered incentive mechanism based on such an exogenous assessment of costs.

### Cost model

In its Discussion Paper, the ACCC requested comment on the primary cost drivers of electricity transmission companies, and whether it is possible to develop a reasonably reliable cost model for Australian electricity transmission companies. EnergyAustralia maintains that the cost of developing a robust cost model must be balanced by the value delivered by its ability to be used for a large number of businesses.

Consistent with the discussion on benchmarking above, EnergyAustralia considers that this question presumes a degree of homogeneity in the Australian transmission businesses that does not necessarily exist. A review of the business structure and responsibilities of the various Australian transmission companies indicates that there are two clear criteria which provide for fundamental differences in the businesses:

- The clarity of distinction between the transmission function relative to the distribution function; and
- The extent of responsibility and risk associated with system planning and load forecasting.

EnergyAustralia is clearly unique under the first criterion. As discussed, EnergyAustralia's "transmission business" does not provide a clear transmission function relative to the distribution network. This fact has recently been recognised in a draft Decision by the ACCC, who proposed to waive the requirement for EnergyAustralia to legally separate its "transmission business" from its distribution business.

Under the second criterion, EnergyAustralia submits that the lion's share of turnout cost forecast variability is derived from the transmission planning process, rather than the installation of transmission assets.<sup>3</sup> It may be possible to examine the causes of turnout cost variability into that caused by unexpected results derived from the planning process and that caused by efficiency in the capital works process. However, it would be unreasonable to expect that an ACCC cost model could cope with cost variability caused with the uncertainties of the planning process. This would add a significant degree of complexity and risk of inaccuracy to the cost model contemplated.

In summary, the discussion paper suggests that the cost model will be based on the benchmarking results (as distinct from it being tied to the PTRM). As discussed above, the benchmarking is unlikely to provide reliable data to input into a cost model. Further, even if the benchmark data was reliable, EnergyAustralia's transmission business is sufficiently different from other transmission businesses that the model would have to be extensively customised in order to be responsive to EnergyAustralia's cost drivers. It does not seem reasonable to develop a cost model where both the inputs and the outputs are likely to be

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<sup>3</sup> Virtually all of EnergyAustralia's asset acquisition and installation costs are subject to competitive tendering processes. This allows the businesses and the regulator to rely on market forces to ensure the efficiency of these costs.

fraught with problems. Discussion on the use of the outputs of a cost model is provided in Attachment 2.

Acknowledging the costs of constructing a robust and reliable cost model, EnergyAustralia has proposed a more cost effective and reliable alternate approach, as discussed below.

## Alternate approach

EnergyAustralia recognises the importance of the regulator being satisfied that its proposed capital expenditure, operating costs and other forecasts are reasonable, but emphasises that benchmarking is not the appropriate tool in these circumstances to provide this satisfaction.

EnergyAustralia recognises that any submission for EnergyAustralia's transmission system that does not rely primarily on benchmarking needs to be accompanied by a willingness to participate in some form of cost based revenue determination process that is linked to appropriate service outcomes, for which the business must ensure robust information is available to underpin such a mechanism.

EnergyAustralia notes the ACCC's commentary that the international experience with the regulatory "game" indicates that a regulated business has an incentive to file ambit claims, expecting that the forecasts will be cut back in a seemingly arbitrary manner. EnergyAustralia believes that a decision to play this "game" risks EnergyAustralia's credibility in its relationship with the regulator. In short, EnergyAustralia's response to this "game" is to decline to play.

In contrast, EnergyAustralia's approach has been to develop a planning and forecasting process that is responsive to the incentives provided. The EnergyAustralia governance program is the Regulator's evidence that the business has internalised the current incentive mechanisms. This demonstrates that the incentives in the current rules are strong enough to induce the business to modify its behaviour.

EnergyAustralia filed an overview of the governance process as Attachment 8 to its submission to the 2004 price review. To demonstrate EnergyAustralia's commitment to the incentive mechanisms, we welcome the ACCC to review the governance program, the resulting planning procedures and the forecasts derived from those procedures in detail.

EnergyAustralia is confident that a review of this process, by the ACCC will give it comfort that the capital and operating planning and governance process is sufficiently robust and responsive to the regulatory incentives and that the ACCC can have confidence in the capital and operating expenditure forecasts emanating from the process. EnergyAustralia encourages ACCC staff to take up this invitation.

The ACCC has commented that a review of endogenous costs would be appropriately accompanied by an incentive mechanism to reduce costs. EnergyAustralia recognises that benchmarking, incentive mechanisms and service standards are intricately linked, and should be considered as a package. Therefore, our comments on each of these sections should not be considered in isolation.

## 6. Pass-through mechanisms and self-insurance

### Pass-through Mechanism

EnergyAustralia believes that a flexible mechanism is required to address circumstances that may arise within a regulatory period that are significant in nature and not anticipated at the time of the Determination. An inflexible framework places an unsustainable level of risk on regulated businesses and exposes customers to significant price shocks at each subsequent review should unanticipated events not be addressed within a regulatory period. Regulated businesses face a limited up-side within the framework (revenue or price increases are constrained while decreases are not) and a seemingly unlimited downside (the risk of cost increases is significantly higher than the risk of cost decreases). Unlike unregulated businesses that can adjust their service/price mix when faced with changing levels of cost,

regulated businesses face an obligation to supply regardless of changing costs or increased growth in customer numbers.

EnergyAustralia believes that in a world where regulated incomes are set for five years but where risk profiles can change overnight (ie. September 11, 2001) such limited review opportunities are impractical and place an unbearable amount of risk on the regulated business.

EnergyAustralia believes there is a need for a pass-through mechanism to address unanticipated cost increases that are outside of the business's ability to control. A number of one-off cost increases have directly impacted on the ability of EnergyAustralia to keep within the forecasts of its regulated operating expenditures. EnergyAustralia believes that the certainty and predicability surrounding the future operations of the regulatory regime would be increased and the inherent efficiency mechanisms within the framework will be preserved where explicit guidance is provided in advance on:

- The circumstances in which a cost pass through may be permitted during the regulatory period;
- The process which would be followed in respect of such applications; and
- The criteria by which such applications would be assessed.

The pass-through mechanism has precedents in many jurisdictions and has been utilised by the ACCC in previous determinations. It has the advantage of providing certainty, to both the business and the regulator, of the process that will be followed if there are unexpected changes in costs.

EnergyAustralia recognises the need to clearly and closely define those costs that will be allowed to be passed through so as not to undermine the general incentive properties of the CPI-X regime.

In the following section EnergyAustralia identifies several categories of events that we believe should trigger an application for a cost pass-through during the next regulatory period for our transmission business. With assistance from NERA, who provided a report as part of EnergyAustralia's submission to IPART, we set out our preferred process for making an application for a pass-through amount, and also set out a mechanism whereby approved pass through amounts would be translated into tariff charges. EnergyAustralia's proposed "Pass-Through Rules" are provided as Attachment 13 to its submission on the 2004 price review.

### Events that trigger a pass through

EnergyAustralia believes there are three main categories of events that have the potential to cause material changes to costs and that should be granted pass-through status. These are:

- Cost changes which are the result of changes in statutory requirements;  
Examples include the costs associated with recent WorkCover regulations requiring EnergyAustralia to have rescue teams on site while working within confined spaces, revocation of our exemption from WorkCover's regulations relating to 'live wire' work, and changes to the EPA regulations on the timetable for replacing oil-filled cable casings.
- Cost changes due to unexpected or very rare and easily identifiable events;  
An example might be damage to the network caused by bushfire, or a terrorist attack on electricity infrastructure that caused a shut down of supply to the CBD.
- Cost changes due to significant changes in (non-statutory) cost drivers.  
A recent example is the impact that the events of September 11, 2001 that have increased insurance premiums and in several cases doubled premiums.

### Precedents for pass through

We note that the ACCC has previously approved pass through mechanisms for TNSPs in other jurisdictions, and that several other jurisdictional regulators including the ESC in Victoria and the ESC of South Australia have adopted cost pass through provisions that allow for the

pass-through of similar types of unexpected costs. Allowing the business to pass-through these costs into prices if and when the change occurs is preferable to attempting to include an amount in the expenditures to cover potential costs changes, or to allow the business a higher WACC to compensate it for the additional risk it faces. Both of the latter options result in prices being higher during the regulatory period, whether or not the change actually occurs. In contrast, dealing with these cost changes through a pass-through mechanism will mean that prices are only affected if and when, the change eventuates.

As noted above, EnergyAustralia recommends that a pass-through mechanism be incorporated during the next regulatory period. Our proposed rules for making and considering a pass through application is included in Attachment 13 to EnergyAustralia's submission to the 2004 price review.

## Self-insurance

EnergyAustralia also believes that it is crucial that the true costs for regulated businesses are recognised by the regulator and that the regulator allows the business flexibility in determining the most appropriate way to mitigate these risks. Like a pass-through mechanism, self insurance is a way EnergyAustralia is able to mitigate the risks it faces.

EnergyAustralia engaged Trowbridge Deloitte to conduct an Analysis of non-insured events, which is filed with our price review submission as Attachment 12. Trowbridge comments that:

It is common business practice for companies to limit the level of insurance they purchase from private insurers or reinsurers. Valid reasons for doing so include:

- the company believes the quoted insurance premium is in excess of the true insurance cost;
- the required insurance is not readily available;<sup>4</sup>
- the company has sufficient resources to withstand the risks in question (for example, the risks within the insurance "deductible" limit);
- the company has accepted an attractive premium on a "standard" insurance policy which includes a range of exclusions, and the cost of "writing back" the exclusions exceeds the company's perceived value of the excluded risks; and
- the insurer requires the company to bear a reasonable share of each claim to provide incentive for it to manage its risks more effectively.

If no allowance is made for a company's self-insured costs in setting its tariff revenue, then, other things being equal, a business could be encouraged to "over-insure" its risks (possibly on uneconomic terms) and would be allowed to recover those costs through higher tariffs. We consider this to be a perverse incentive.

In our view, each business should not be penalised for selecting the most appropriate/efficient insurance program for its diversifiable risks. This would be achieved if for each business, the "self-insured" costs were estimated and were treated by the regulator as a cash flow expense in setting regulated revenue. This approach requires that these uninsured risks be valued using appropriate quantification methodologies and is also consistent with accounting and taxation standards that put insurance and self-insurance on a similar footing.

As noted above, EnergyAustralia faces significant risks in the conduct of its business that are not covered in its operating costs or compensated through the WACC. In many cases, these risks cannot be insured cost-effectively, if at all. EnergyAustralia bears and manages these risks internally and should be compensated for these costs.

The Trowbridge Deloitte review identified the most significant non-insured risks faced by EnergyAustralia and calculated an amount deemed by Trowbridge Deloitte as being actuarially fair compensation for bearing these risks. These risks fall into the following categories:

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<sup>4</sup> For example, EnergyAustralia has found that some of its risks cannot be underwritten industry because of EnergyAustralia's size relative to the Australian insurance industry. We have also found that the insurance industry in general is not sufficiently knowledgeable of the risks facing an electricity transmission and distribution business to evaluate the risks and mitigation measures, and tend underwrite at an inflated price.



- Property related risks
- Currently insured risks
- Credit risks, and
- Other risks

The full report received from Trowbridge Deloitte is included in Attachment 12 to our 2004 price review submission.

EnergyAustralia notes that in 2002, the ACCC allowed SPI Powernet to claim a self-insurance premium provided that it met certain conditions (including that the premium had been calculated on an actuarial basis). EnergyAustralia submits that the acceptance of an actuarially-determined amount for self insurance as an acceptable business expense should be recognised in the review of the draft DRP.

## 7. WACC

EnergyAustralia, in conjunction with the other Australian electricity TNSPs, engaged Network Economics Consulting Group (NECG) to review and respond to the ACCC's Discussion Paper on the Draft Principles for the Regulation of Transmission Revenues. The NECG report which has been separately submitted to ACCC during this consultation process, focuses on section 8 of the Discussion Paper - the Weighted Average Cost of Capital (WACC).

WACC remains a contentious area of regulatory decision-making. In the past the ACCC has made a number of statements that regulated rates of return in Australia compare favourably to those provided by overseas regulators. The NECG analysis clearly demonstrates that in the case of electricity transmission, this is not the case if factors such as market risk and different values of the risk free rate are taken into account.

The decision of many overseas investors to exit the Australian infrastructure sector has highlighted the importance of regulatory cost of capital determinations to the continuing challenge of attracting investment to this sector in highly competitive global investment markets. If WACC allowances are provided to regulated businesses in Australia that are lower than returns that can be earned elsewhere for an equivalent risk, a disincentive to invest in critical infrastructure is created.

There are a number of proposed positions in the Discussion Paper that will understate the required returns to investors, and therefore will not provide appropriate incentives for efficient investment. These issues are detailed in the NECG report, and are summarised below:

EnergyAustralia does not support the ACCC's stance on basing the maturity of the risk free rate in the cost of debt and equity in the WACC on the length of the regulatory period. We believe that the appropriate approach for establishing the allowed return on capital (debt and equity) is to base the bond maturity on the life of the asset, with the longest-dated bond, namely the 10-year Commonwealth bond providing the best available proxy.

EnergyAustralia recognises the ACCC's attempts to address the imprecision of beta estimation by estimating beta as an upper confidence interval (without stating the level of confidence it would require) from a sample of listed comparators. However, we are concerned that this approach is flawed and will create significant regulatory uncertainty for a number of reasons. First, the beta estimates that the ACCC relies upon have poor statistical properties. Second, even if this problem could be overcome, the approach of pooling estimates is open to gaming and abuse by both regulated entities and the regulator alike. Finally, even if a mechanistic formula can be determined, the choice of the appropriate level of confidence to apply is inevitably ad hoc.

Given the inherent need for judgement in determining a beta, relying on such a mechanistic approach alone is not appropriate and will introduce a false sense of confidence. Therefore,

we recommend that the ACCC consider a number of alternative sources for beta, including international beta values and first principles.

We note that the ACCC has repeatedly justified its position on asset beta by reference to the fact that such a value generates an equity beta of 1 reflecting the average risk of the market as a whole. However, this statement is misleading as it does not take into account the average gearing of the market, which is significantly lower than the ACCC's assumed benchmark gearing for TNSPs. Indeed, our estimates suggest that an average asset beta of listed firms on the Australian Stock Exchange is around 0.64 – significantly higher than the benchmark allowances for TNSPs.

As detailed in the NECG report, EnergyAustralia believes that many of the proposed positions raised in the Discussion Paper expose the businesses to significant, and in some cases increasing, regulatory risk, which can only increase the challenge in attracting investment in required electricity infrastructure.

Finally, it is apparent that the WACC calculation as generally adopted by Australian regulators does not contain an explicit premium for regulatory risk, and in particular the risk of optimisation of the asset base. Therefore we note that, should the ACCC consider changing its view on this matter, it would be inappropriate to make a corresponding reduction to the WACC for a premium that was not included in the first place.

## **8. Service standards**

The ACCC has commented that some incentive mechanisms encourage a business to deliver reduced service in response to the incentives to reduce costs. The incentive mechanism will therefore need to be integrated with the service standards proposals in order to give the regulator confidence that EnergyAustralia is not reducing standards in order to reduce costs in response to the incentive mechanism.

EnergyAustralia directs the ACCC to the discussion above regarding internalising the incentive mechanisms inherent in the current DRP.

In Attachment 10 to its submission to the ACCC, EnergyAustralia discussed the proposed service standards. In particular, it is noteworthy that service standards for a large transmission system are average numbers based on the diversity of a large(r) number of feeders. EnergyAustralia has a small number of feeders included in the calculations which increases the relative impact that failure of any one feeder has on the system-wide service standard measure. As a result, EnergyAustralia recommended that the impact of certain failures be capped so as not to cause undue distortion to the service standard measure.

Of the service standard measures proposed by the ACCC, only two (circuit availability and outage duration) are relevant to EnergyAustralia, given the underlying composition of our transmission network. Furthermore, the outage duration measure is subject to a high degree of volatility that is inappropriate to be used for target setting at present.

## Response to specific questions put by ACCC in its discussion paper on the Draft Statement of Regulatory Principles

### ODRC

EnergyAustralia believes that the accepted methodology of undertaking an ODRC, as was used by SKM when they undertook an ODRC for EnergyAustralia's transmission assets is adequate.

#### **Q: What customer base (throughput) is relevant to optimisation of the network? Is it the current situation or a projection of demand in 5 to 25 years time?**

From a business's perspective, the longer the time frame for optimisation, the more likely it is that all existing elements of the network will be included in the optimal network.

However, practically speaking, EnergyAustralia does not believe that it is appropriate to use a very long term estimate of the customer base (ie 25 years) to optimise the network. It is not possible to accurately predict demand for a 5 year period and therefore impractical to forecast twenty years beyond this period.

Clearly there needs to be some forward looking view of the optimal network. EnergyAustralia believes that this should align with the forward looking capital planning horizons which are set at 10 years. It is noteworthy that clause 3.13.3(o) of the National Electricity Code requires NEMMCO's Statement of Opportunities to include information on projections of aggregate MW demand and energy requirements for each region, generating capabilities, and network capabilities and constraints for the subsequent ten year period.

#### **Q: What is the assets Replacement Cost (RC)?**

EnergyAustralia believes that the replacement cost of an asset must be the modern equivalent of the asset in question. EnergyAustralia also believes that the cost of the modern equivalent should be based on a "brownfields" investment rather than "greenfields", as EnergyAustralia is rarely faced with opportunity for greenfield investment in its network area which is characterised by dense urbanisation. EnergyAustralia is already experiencing constraints in its augmentation options due to its inability to access further easements, thus making the use of existing easements and land a more cost effective option.

### Self insurance & pass through

#### **Q: ACCC proposes that businesses provide copies of insurance invoices to the regulator at least 50 days prior to beginning of financial year (regardless of whether a pass-through even has been claimed).**

It is not clear to EnergyAustralia what the objective of this requirement is. If the ACCC is seeking to determine if there have been any savings in insurance costs as a result of allowing self insurance to be included in the regulated business' cost structure, such a reduction would only appear if the industry was substituting self insurance for external insurance. However, in most cases, this self insurance cost recognises the cost to the business of bearing these uninsured risks. If the business has been carrying these risks unfunded in prior years, a reduction in external costs will not be evident.

In EnergyAustralia's view, it would be reasonable for the ACCC to request details of insurance coverage as part of an application for pass through, to satisfy itself that the item being passed through is not covered by an insurance policy. It is not clear that there is a regulatory requirement for insurance policy information outside of this scenario.

Further, the insurance policies are to be filed at a time at which no other information is to be filed. EnergyAustralia submits that, in the interests of reducing the regulatory administrative burden and in the absence of a pass-through application, such information requests should

be made to coincide with other compliance reporting such as the Regulatory Accounts which are filed in October each year. One option would be to include a line item for insurance in the opex section of the regulatory accounts.

# ENERGYAUSTRALIA'S ROLL-FORWARD

## The Roll-forward Methodology

EnergyAustralia has advocated the application of the ODRC methodology for establishing the opening regulatory asset base (RAB) for the 2004 regulatory period. However, EnergyAustralia wishes to provide comments on its views as to how a roll-forward methodology should be implemented by the ACCC. The following discussion examines the issues associated with undertaking a roll-forward approach.

Based on EnergyAustralia's understanding of the regulatory regime applied by the ACCC it is clear that it will be required to undertake an ex ante view of how to roll-forward EnergyAustralia's RAB during the 2004 regulatory period regardless of the asset valuation methodology used for arriving at the opening RAB. Therefore the information below addresses specific issues associated with this task as well as the issues associated with developing the ex post roll-forward for the opening 2004 RAB.

## EnergyAustralia's Concerns

In EnergyAustralia's September submission we raised several concerns regarding the existing uncertainty surrounding how the ACCC would apply a roll-forward asset valuation methodology. Therefore, in presenting EnergyAustralia's views on the application of a roll-forward methodology we have addressed all of the issues that are listed below.

- **Asset methodology** - What is the starting asset valuation methodology and when is indexation applied? What is the index to be used, and what is its basis, timing and derivation?
- **Real versus nominal framework** - Is the framework a real or a nominal one and what impact does this choice have on the timing of indexation in the RAB?
- **Capital expenditure** - How is actual capital expenditure treated if it is above or below forecast? What tests are to be applied to actual capital expenditure to determine whether they should be added to the RAB for the subsequent period, if any, and when are the tests applied? Does the ACCC propose to include a return on and/or a return of capital associated with prudent capital expenditures in excess of allowed amounts?
- **Stranding risk** - How is the stranding of assets managed and what tools are available for the TNSP's to manage stranding risk under the roll-forward?
- **Capital contributions** - How are capital contributions and the associated income tax liabilities managed?
- **Return of capital** - Will the return of capital for the subsequent regulatory period be derived using a return of capital consistent with the determination or using "actual" (ie accounting) depreciation? What are the capital maintenance and pricing objectives supporting the preferred profile and methodology? Are remaining lives reviewed, and if so how, when, and on what basis? How are changes to remaining lives managed? How is indexation managed in the depreciation profile?
- **Capitalisation & holding costs** - When are assets recognised in the RAB? If there is a delay in capitalisation, are the associated holding costs recognised? If so, how are the holding costs calculated?
- **Easements** - How are existing easements valued? How are new easements valued? What is the appropriate index to apply to easements?<sup>5</sup>

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<sup>5</sup> EnergyAustralia's Submission to the Australian Competition and Consumer Commission, Transmission revenue Determination 2004-2009, September 2003, pages 38-39.

## Real versus nominal framework

This is a critical issue in order to ensure that the timing of the indexation of the RAB in the calculations is applied at the appropriate time in the roll-forward calculations.

EnergyAustralia has assumed that the ACCC will continue to apply a nominal framework as foreshadowed by the 1999 Draft Statement of Regulatory Principles (DRP), and subsequently applied to all transmission determinations. Therefore the relative timing of indexation should occur at the end of each year to inflate the asset base into nominal terms for that year.

## Opening asset valuation methodology and indexation

Clearly, the opening asset base used in the calculation of the roll-forward is critical in ensuring that the value invested in network infrastructure is maintained at an appropriate level. Therefore, it is critical that attention is paid to the date at which the opening RAB value is assumed to relate. In other words, does the previous year's closing RAB need to be indexed prior to commencing the roll forward process?

It is EnergyAustralia's understanding that the opening RAB applied in the 1999 transmission determination was in real 1998/1999 dollar terms and therefore does not require any additional indexation prior to commencing the roll-forward process.<sup>6</sup>

However, in information provided by EnergyAustralia regarding the intra-period roll-forward of its distribution and transmission networks<sup>7</sup>, it must be noted that the closing balance is still in real 2002/03 dollar terms. Therefore to arrive at an opening real RAB for 2004/05 the closing value that is developed from undertaking an *ex post* roll forward of the 1999 regulatory period will need to be indexed.

Consistency in the application of indexation over time is clearly critical for ensuring that TNSPs are neither advantaged nor disadvantaged from the application of CPI. Any change to either the approach or the time period used for the annual calculations would introduce significant regulatory risk into the regime. To date EnergyAustralia has applied indexation within the current regulatory period on a year-on-year basis for the march quarter, and EnergyAustralia would expect that this approach will continue to be used consistently throughout the regulatory regime where CPI is required to be applied.

## Stranding Risk

### Ex Ante

Asset stranding risk has been managed in two ways to date in the transmission regulatory regime, and EnergyAustralia believes that both of these approaches would appear to be appropriate, as both of these approaches relate to stranding risk that arises from different causes.

Firstly, asset stranding risk can arise due to the risk that the utilisation of a network element may no longer be required, such as with a mine. However, when the infrastructure was originally commissioned it is fair to believe that it was constructed with the knowledge that its technical life was likely to exceed its economic life. This being the case, a prudent investor will ensure that it has recouped its investment within the economic life of the project as opposed to any theoretical concerns regarding the technical life of the asset. It is for this reason, amongst others, that economic limitations on the effective useful life of assets is used to help define the economic life over which the investment in infrastructure should be recouped. This approach was supported by the ACCC at the time of the 1999 transmission determination.

Further, EnergyAustralia would recommend that this approach be continued, and that at each review the TNSPs are provided the opportunity to provide new remaining life information, that would then be used to determine the profile of the return of capital on those assets.

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<sup>6</sup> In RAB roll forward data provided to the ACCC and IPART. It must be noted that the same is not true for the IPART determination which requires the opening 1999 RAB to be indexed to bring it into nominal 1999/2000 dollar terms as the distribution regime is a real framework.

<sup>7</sup> This information was developed for EnergyAustralia's distribution review. It has subsequently been provided to the ACCC so that it may consider the issues arising from assets changing the jurisdiction under which they are regulated.

The second, way in which stranding risk arises and is managed is through by-pass. EnergyAustralia notes that the ACCC has an established process for managing issues associated with by-pass through its discounts policies, and therefore will not expand on them here as they do not directly relate to asset base roll-forward.

### **Ex Post**

EnergyAustralia believes that the ACCC's views expressed in the 1999 DRP that TNSPs should suffer a full loss of value should assets be stranded is not inappropriate.

On principle, the burden of managing risks should reside on the party in possession of the best information to manage those risks. However, if risks are to be borne by TNSPs, it is incumbent on the regulator to ensure that the TNSPs have sufficient tools within the regulatory regime to manage those risks, and that full support is provided to the businesses to ensure that those tools are effective and not constrained by other processes or requirements.

Furthermore, it is clear from experience over the current regulatory period that unanticipated risks will arise from time to time, and therefore it is critical that the regime also allows for new risk management tools to be used, and that existing tools are flexible enough to be adapted to new situations where appropriate. Please see section G of EnergyAustralia's submission for a description of EnergyAustralia's proposed pass through mechanism and discussion of asymmetric risks.

### **Capital expenditure**

EnergyAustralia believes that capital expenditure should be recognised in the RAB on an "as spent" basis. This approach will simplify the regulatory regime, will provide greater transparency, and will reduce regulatory compliance costs.

Further, EnergyAustralia believes that asset recognition based on the commissioning date (the ACCC's approach) provides negative overall public benefits. There are three main reasons for this opinion:

- Additional compliance costs are incurred in managing the commissioning date approach as the TNSPs will be required to maintain separate reporting of their capital expenditure on a spend per year on a project by project basis. This is particularly difficult for projects that cover multiple regulatory periods, where the holding costs associated with past spending etc all need to be maintained. It should be noted that the current form of regulatory information pro formas do not require such reporting;
- The commissioning date approach does not change the capital costs recovered by TNSPs on prudent and efficient investment over their life times, it merely adjusts the timing of the recovery of these costs. In other words the application of this policy as articulated by the ACCC was directed at temporal equity concerns, and is not designed to reflect, or provide incentives relating to, prudence and efficiency in capital investment. Therefore, on average, customers are no better off under the commissioning date approach.
- Commissioning dates as applied by the ACCC have been applied on the basis of commissioning of the project as a whole. However, the commissioning of large projects is usually undertaken in stages, and therefore to be totally accurate with the ACCC's approach TNSPs would need to provide capital expenditure information in yet another format in order to determine which costs should be applied to which commissioning date within a single project. There are even further technical complications, such as the allocation of costs that are common to several elements of a project, but those elements may have different commissioning dates. If required, this information would force EnergyAustralia to change its project costing approach to ensure that it records an additional level of detail that is inconsistent with its current financial and project management approaches.

### **Ex Ante**

Capital expenditure considered in the ex ante roll-forward should be that which is deemed to be prudent and efficient and on a basis that is consistent with the assumed investment profile.

## **Ex Post**

Ex post the capital that should be included in the roll-forward is the actual capital expenditure that is deemed to be prudent and efficient that was invested over the course of the regulatory period, with an appropriate allowance for any holding costs incurred as discussed below.

EnergyAustralia notes that the ACCC may use the application of the Regulatory Test for augmentation capex as one of the criteria to help it to establish that the investment was indeed prudent. However, EnergyAustralia must caution the ACCC not to apply the costs used in undertaking the Regulatory Test as the values to be included in the roll-forward. To do so would ensure that prudent and efficient costs incurred above the stated value would not be recovered and therefore provide disincentives to invest due to value destruction. It could also lead to an incentive to inflate costs during the Regulatory Test process, and potentially resulting in an inefficient option being adopted.

Ultimately cost forecasts at a point in time are just that – forecasts. Circumstances can be expected to change over the course of a project that could run several years, and to apply an artificial cap on the allowed costs regardless of what may be prudent and efficient in the actual circumstances creates a significant regulatory risk, that will reduce the incentives to invest in appropriate infrastructure. This outcome is clearly inconsistent with the National Electricity Code objectives.

## **Capital Contributions**

### **Ex Ante**

Capital contributions were recognised as a potential issue that needed to be addressed by the ACCC in 1999, and even went so far as to require a divergence from the accounting standards in order to cope with the misalignment of accounting protocols and regulatory objectives.

Assuming that capital contributions are supported by the ACCC as a positive economic tool that can be exercised by the TNSPs, EnergyAustralia believes that there is a critical issue that as yet has not been addressed by the ACCC – that of the income tax implications.

As the ACCC recognises that assets should not be included in the RAB to the extent to which they have contributed to by customers, EnergyAustralia contends that the NPV loss suffered from the requirement to pay full income tax on the receipt of capital contributed assets is a de-facto contribution on the part of EnergyAustralia to bringing the asset into service.

EnergyAustralia has submitted the arguments to support the inclusion of a new asset in the RAB that will be equivalent to the NPV loss arising from income tax on capital contributions, and believes that this new asset class should be included in the RAB in the year that the liability is incurred.

From here the NPV loss should be treated the same as any other asset within the RAB, and EnergyAustralia believes that the appropriate economic life over which to calculate the return of capital should be the tax life applied to the underlying asset. This would therefore perfectly align the timing of cash flows and taxation implications, leaving the TNSP in a neutral NPV position, regardless of whether it invested in the assets themselves or required some capital contribution.

### **Ex Post**

Ex post the NPV value of the loss arising from tax paid on the receipt of capital contributions that should be included in the roll-forward is the NPV loss arising from actual capital contributions received over the course of the regulatory period, with an appropriate allowance for any holding costs incurred as discussed below.

## **Capitalisation of holding costs**

Holding costs as presented by EnergyAustralia are financing costs incurred by the TNSPs that result from a timing difference between capital invested in the network and receiving revenues to support that investment. This can relate to both capital expenditure and disposals, as all that is required is a difference between actual investment (RAB), and that used to develop the return on and of capital components of the revenue cap.



It is clear that the ACCC has adopted this concept, at least on an ex ante basis, as it was included in EnergyAustralia's 1999 transmission determination. In particular, there was a timing difference between when capital was invested for projects and the commissioning date which was used to determine when revenues should commence for that investment. This gave rise to a NPV loss on investment as the TNSP was subject to funding costs to its debt and equity holders, but was unable to generate the revenues to fund those costs.

Therefore, the ACCC provided for an explicit allowance that ensured that the NPV of the investment was maintained. However, EnergyAustralia believes that ACCC should also examine the application of this policy on an ex post basis to ensure that prudent and efficient investments have their value maintained, and that the incentives to invest when required are protected.

### **Ex Ante**

In this context holding costs have been commonly termed by the ACCC as interest during construction, as per the 1999 transmission determination. This is a slight misnomer with the allowance applied to date has been determined using both the cost of equity as well as the cost of debt.

Where there is any systematic difference between the investment of capital and its inclusion in the RAB for the calculation of future revenues there must be an appropriate allowance for the holding costs borne by the TNSP.

This cost should be calculated on an ex ante basis in the same manner as if the capital expenditure were recognised as spent and received a return on capital on the invested value – the WACC. The expenditure and accumulated holding costs should then be carried forward each year, accumulating the value of each year's holding costs, until such time as the investment enters the RAB. The value that is added to the RAB when the investment is recognised should be the PV of the capital expenditure at that point in time using the WACC as the discount factor.

Anything less than this will result in all investments systematically destroying the value of the investments.

### **Ex Post**

Ex post, holding costs should be calculated in the same manner as for ex ante calculations but applies only to the extent that forecast and actual investment information differs. In particular, the differences between forecast capital expenditure, disposals and capital contributions, and those that actually occur. This calculation will result in a series of values that should be used to adjust the closing RAB to be used for future revenue calculations.<sup>8</sup>

Clearly the application of holding costs should only apply to prudent and efficient expenditures that would result in the underlying asset being recognised in the RAB by the ACCC, and should not simply apply to all expenditure made by the TNSP.

### **Easements**

Easements were singled out as a special asset category in the 1999 transmission determinations. As a result they have not been valued on the same basis as the remainder of the RAB. Whilst the remainder of EnergyAustralia's assets were valued at ODRC in 1999, the easements were valued at their indexed historic cost. In effect, this approach is a simplified roll-forward methodology where the return of capital is not considered.

Given the cost of acquiring easements and their importance for ensuring that EnergyAustralia has access to maintain and repair the transmission network, EnergyAustralia is seeking conformation that this methodology will be maintained for new easements.

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<sup>8</sup> Where a commissioning date approach is being adopted for capital expenditure it is likely that a portion of these costs will relate to projects that will not be commissioned until the following regulatory period. Where that is the case the holding costs related to those projects should be segregated from the remainder of the costs and carried forward with the remainder of the capital expenditure on that project and be capitalised when commissioned using the ex ante approach discussed earlier. As EnergyAustralia has stated earlier the commissioning date approach is not supported.

EnergyAustralia believes that the current approach is a practical approach to managing the pricing of these assets given their intangible nature, and potential pricing implications of other methodologies.

## Return of capital

The ultimate goal of the return of capital (depreciation) allowance in the building block regulatory approach is to ensure that investors in prudent and efficient infrastructure investments receive their investment returned to them over the economic life of the investment. This view was clearly articulated in the 1999 DRP released by the ACCC, and EnergyAustralia believes it is critical for both providing incentives to invest, and to ensure that financial capital maintenance is achieved on prudent and efficient investments.

### Ex Ante

The first question that must be answered in determining the appropriate return of capital profile is that of the period over which the principle investment will be returned to the investor. The profile can be determined using a range of profiles, however for simplicity's sake and transparency EnergyAustralia strongly advocates the use of a straight line methodology over the remaining life. Further, EnergyAustralia advocates the use of the economic life as the basis for the period over which the straight line profile should be calculated as opposed to the technical or standard engineering life of the asset in question.

As with any decision, the ex ante return of capital should be calculated on the basis of the best information available at the time. This includes ensuring that the expected remaining economic life of assets is reflective of current expectations, and is likely to result in the modification of some expectations that were used at the time of a previous review. This philosophy is critical for ensuring that future revenues and prices best reflect the value of investment in the network.

EnergyAustralia has taken the approach of identifying expected remaining lives for its assets on a class by class basis, which in truth is an amalgam of its understanding of the remaining life expectations of each of the individual assets within that class of assets. Whilst it may be preferable from a theoretical standpoint to undertake the analysis for each individual asset, it is clearly impractical given the sheer number of assets in the network.

Consideration of the remaining life on a more simplified basis - say to the network as a whole – is also inappropriate, as the lack of transparency in the information and the lack of detail is not sufficient to provide a robust trajectory for the return of capital over the economic lives of the underlying assets and could result in intergenerational equity concerns.

### EX Post

It is critical to remember that the value of the investment and the time over which it is to be returned merely sets the profile that future revenues are modelled upon. These variables are used purely in a protective context – the setting of the revenue cap – unlike the accounting reporting concept which attempts to report what occurred and then allocate costs ex post. The two concepts must be clearly separated in the regulatory regime to ensure that it maintains its structural integrity and preserves the economic signals for future behaviour.

Therefore, ex post the return of capital that should be included in the roll-forward is that which was used to determine the allowed revenues. There should be no ex post adjustments for any differences that would arise if the return of capital were to be calculated on the actual capital expenditure, and disposals.

This is imperative if the objective of ensuring that the investor has its initial investment returned to it over the life of the investment. In a financial capital maintenance view, any difference between the return of capital received and allowed will result in either a gain or destruction of the value of the investment.

## Disposals

In the context of the RAB calculations, when assets are removed from service and disposed of their residual roll-forward value should be deducted from the RAB. This is necessary to maintain the nexus between financial investment and the underlying asset that supports the RAB.

**Ex Ante**

Ex ante disposals should be included in the roll forward calculations on the basis of expectations of disposals that will occur. This is most likely to be related to replacement capital expenditure, where some residual value of the assets replaced may exist, and the components replaced are not retained for spare parts.

EnergyAustralia does not support an approach to forecasting disposals on an ex ante basis that relies purely on a fixed percentage of the asset value, without appropriate consideration of anticipated events.

**EX Post**

Ex post the disposals that should be removed from the roll-forward RAB are the actual disposals that occur over the course of the regulatory period, with an appropriate allowance for any holding costs incurred as discussed above.

# BENCHMARKING AND COST MODELS

Darryl Biggar, in his report to the ACCC, *Benchmarking, Yardstick Regulation and Factor Productivity Analysis*, quotes a set of criteria developed by Kaufmann et al for effective benchmarking:<sup>9</sup>

An important advantage of the econometric approach to benchmarking is that results can assess the precision of such point predictions. Precision is greater as the variance of the prediction error declines. The formula for our estimate prediction error shows that, generally speaking, the precision of the cost model will increase as:

- The size of the sample increases;
- The number of business condition variables [called here cost influencing factors] required in the model declines;
- The business conditions of sample companies become more heterogeneous;
- The business conditions of the company in question become closer to those of the typical firm in the sample; and
- The model is more successful in predicting the costs of the sampled companies.

## Sample size

EnergyAustralia is the only distribution business in the National Electricity Market which owns assets currently characterised as transmission under the Code. It is not possible to create a sample of comparable Australian firms as a comparator for EnergyAustralia, let alone find a sample size that is sufficiently large to be considered statistically significant (and therefore to have the needed confidence in the results). Moreover, because of the unique circumstances under which EnergyAustralia's transmission business was "created" (in particular that the system is defined by virtue of its operating in parallel or providing support to another transmission system), we contend that it will not be possible to assemble a sufficiently large sample of comparable international firms.

## Small number of business condition variables

With a sample of reasonably comparable firms, it would be reasonable to expect that there would be some commonality in cost influencing factors. Indeed, it would be reasonable to expect that commonality in the cost drivers influencing pure transmission businesses. However, as discussed below, when EnergyAustralia's cost influencing factors were added to the sample, the differences in drivers would stand out in stark contrast. This would add to the number of business condition variables, reducing the applicability of any benchmarking data.

## Heterogeneous sample business conditions

It would be reasonable to expect that, given a sufficiently large sample size, the benchmarker would observe sufficient variability of business conditions to allow for effective benchmarking. However, the low probability of building a sufficiently large sample of firms with comparable operations and business conditions to EnergyAustralia means that it will not be possible to build a sample of firms with comparable operations and cost influences in order to observe the necessary heterogeneity of business conditions.

## Typical business conditions of target company

If a benchmarking study were to be undertaken to compare EnergyAustralia's transmission business with other Australian transmission businesses, it would be abundantly clear that EnergyAustralia's business conditions are quite different from those of the other Australian transmission businesses.

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<sup>9</sup> Kaufmann, L., M. Lowry and D. Hovde (2000), "CitiPower Performance: Results from International Benchmarking", mimeo, 2000. Quoted in ACCC Discussion Paper, 2003 Review of the Draft Statement of Principles for the Regulation of Transmission Revenues p63.

In terms of capital costs, EnergyAustralia's transmission assets are constructed in heavily populated areas, including Sydney CBD, whereas most "pure" transmission assets are constructed across long distances over open land. This means that EnergyAustralia has a much higher proportion of underground lines in congested areas, exhibiting profoundly higher capital and maintenance costs.<sup>10</sup>

For both capital and operating costs, it is important to note that EnergyAustralia's transmission lines operate at 132 kV, rather than the 330 kV or 500 kV typical of most "pure" transmission businesses. This has significant implications for benchmarking on the basis of throughput, and also on economies of scale of capital cost per GWh transmitted.

Similarly, EnergyAustralia questions the value in developing a cost model for its transmission business as 1) it would only be suitable for application to one (small) business and 2) the benchmarking process is likely to generate spurious data to input into the model.

EnergyAustralia's uniqueness is not caused by the presence of overhead lines and urban underground transmission cables *per se*, but rather the mix of overhead lines and urban underground cables. In order for benchmarking to be effective, it would be necessary to further dissect the business into transmission services provided through overhead lines and transmission services provided through underground cables. After correcting for size, EnergyAustralia questions whether sufficient valid information could be derived from the process.

### How should the output of cost models be used?

In its discussion paper, the ACCC commented that

...[where the model does not fully account for all inter-firm differences in cost] the regulator cannot set the regulated revenue directly on the basis of the observed exogenous cost. Doing so runs the risk that the regulated firm will be systematically under-compensated. ... Therefore, the regulator must set the regulated revenue in such a way that there is at least a very high probability that the regulated firm will be properly compensated even if the cost model has systematically underestimated its true costs. Where a cost model is used, the regulator can use statistical analysis of the data to establish confidence intervals with respect to the estimated revenue requirement. ... Thus the appropriate level of the regulated revenue will depend on the statistical error of the cost model (i.e., the residual or unexplained component of observed costs). The higher this statistical error, the higher the regulated revenue will need to be to ensure that the revenue exceeds the true cost with a high probability. (pp 63 - 64)

EnergyAustralia agrees with the ACCC's view that the regulator must "set the regulated revenue in such a way that there is at least a very high probability that the regulated firm will be properly compensated even if the cost model has systematically underestimated its true costs".

As discussed above, EnergyAustralia believes that, due to the uniqueness of its transmission business and the small sample size of comparable firms, the statistical error of the cost model will be so great as to undermine the model's usefulness. This would be the case even in the unlikely event that the cost model has accurately assessed the true cost of operating the business.

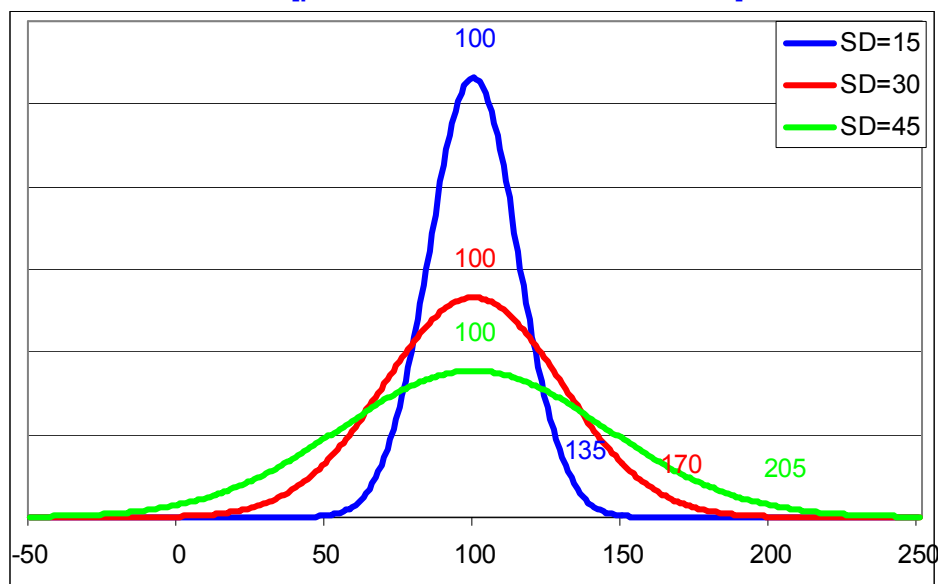
Consider the following example: Assume the cost model has correctly estimated the true costs of operating the transmission business as \$100. If the statistical error of the model is

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<sup>10</sup> An example of the higher capital and maintenance costs includes the additional costs of conducting works on an underground cable in an urban area. Foremost are the costs associated with fault location, pavement cutting and excavation in CBD and urban areas. This work is often conducted at night, as the area is generally too congested for excavation during daylight hours. This adds costs for workspace lighting. The density of population also means that additional worker safety and traffic management costs are introduced. Generally, however, underground cables incur lower operating costs over time, except in fault situations.

such that the standard deviation of the mean cost estimate is \$15,<sup>11</sup> then, in order to be 99% sure it has not under compensated the business, the regulator would have to set the revenue cap at \$135. If the standard deviation of the required revenue estimate was \$40, then the regulator would have to set the allowed revenue at \$170 in order to be 99% sure the business was not under compensated. If the standard deviation of the required revenue estimate was \$45, then the regulator would have to set the allowed revenue at \$205 in order to be 99% sure the business was not under compensated.

**Figure 1 Relative revenue [point estimates at 99% confidence]**



It is impossible to know exactly what the standard error of the cost model will be before it is constructed and tested. However, EnergyAustralia is of the view that, based on the uniqueness of the business and the small size of comparable firms, the standard error of the mean cost estimate is likely to be higher rather than lower.

Whilst the unique cost drivers and small sample size of comparable firms would reduce the validity of inputs to the cost model, the wide standard error would present the problem that the cost model would require the allowed revenue to be set at such a high level to ensure the business is not systematically under-compensate and that it may be impractical to adopt.

<sup>11</sup> Page 66 of the ACCC discussion paper mentions that "it appears that even in the case of distribution companies (for which data for a large number of comparable firms overseas is available), obtaining a forecast with a precision (i.e., the ratio of the standard error to the cost estimate itself) less than 15% is unlikely". It then goes on to identify that there are very few transmission benchmarking studies. While this example acknowledges the difference in calculation between standard deviation and standard error, that difference is not significant to the example.