



Preliminary positions

**Matters relevant to distribution determinations
for ACT and NSW DNSPs for 2009-2014**

Post tax revenue model

Roll forward model

Efficiency benefit sharing scheme

Service target performance incentive scheme

Guideline on control mechanisms for direct control services

November 2007

© Commonwealth of Australia 2007

This work is copyright. Apart from any use permitted by the *Copyright Act 1968*, no part may be reproduced without permission of the Australian Competition and Consumer Commission. Requests and inquiries concerning reproduction and rights should be addressed to the Director Publishing, Australian Competition and Consumer Commission, GPO Box 3131, Canberra ACT 2601.

Contents

Shortened forms	1
Summary	2
1 Regulatory framework for ACT and NSW 2009-2014 distribution determination	5
1.1 Amendments to the National Electricity Rules	5
1.2 Transitional Rules for ACT and NSW DNSPs	5
1.3 Consultation for ACT and NSW resets	6
1.4 Consultation under general Chapter 6 of the NER	8
2 Post tax revenue model	10
2.1 Requirements of the NER	10
2.2 AER considerations	12
2.3 Preliminary position	15
2.4 Request for submissions	15
3 Roll forward model	16
3.1 Requirements of the NER	16
3.2 Considerations	17
3.3 Preliminary position	19
3.4 Request for submissions	20
4 Efficiency benefit sharing scheme	21
4.1 Requirements of the NER	21
4.2 Current position in ACT and NSW	22
4.3 Considerations	22
4.4 Preliminary position	26
4.5 Request for submissions	26
5 Service target performance incentive scheme	27
5.1 NER requirements	27
5.2 Purpose of a service target performance incentive scheme	28
5.3 Current position in ACT and NSW	28
5.4 Current position in NSW	30
5.5 Options for developing a scheme for the 2009–2014 determination	31
5.6 Arrangements for EnergyAustralia	32
5.7 Preliminary position	33
5.8 Proposed approach	35
5.9 Request for submissions	35
6 Guideline on control mechanism for direct control services	36
6.1 Requirements of the NER	36
6.2 Scope of the guideline	37
6.3 Preliminary position	37
6.4 Request for submissions	41
Appendix A – issues paper on transition from pre-tax to post-tax	42
Glossary	48

1	Overview.....	51
1.1	Purpose of paper	51
1.2	Key findings of paper.....	51
2	Background.....	53
2.1	Conceptual framework.....	54
3	Differences between pre-tax and post-tax approach.....	55
3.1	The post-tax approach.....	55
3.2	The pre-tax approach	56
3.3	AER preferred approach	59
4	Setting the tax base on transfer to post-tax approach.....	59
4.1	Required data – the tax base	59
4.2	Historic assessment of tax depreciation.....	59
4.3	Impact of government ownership	61
4.4	Proposed approach to setting the tax base	62
5	Impact on revenue of transfer to post-tax regulation	64
5.1	Cash flow simulations.....	64
6	Conclusion.....	69
6.1	Pre-tax versus post-tax.....	69
6.2	Setting the tax base	69
6.3	Impact on revenue - transfer to post-tax approach.....	70
7	Summary of issues for comment	70
	Appendix B – efficiency benefit sharing scheme.....	72
1.1	Nature and authority	72
1.2	Efficiency benefit sharing scheme for operating expenditure	73
	Appendix C – application of current control mechanisms.....	79
1.1	ICRC determination – prescribed services in the ACT	79
1.2	ACCC determination - EnergyAustralia’s transmission services.....	81
1.3	IPART determination – prescribed services in NSW	82

Shortened forms

AER	Australian Energy Regulator
Capex	Capital expenditure
DNSP	Distribution Network Service Provider
DUOS	Distribution use of system
EBSS	Efficiency benefit sharing scheme
ICRC	Independent Competition and Regulatory Commission (ACT)
IPART	Independent Prices and Regulatory Tribunal (NSW)
NEM	National Electricity Market
NER	National Electricity Rules
Opex	Operating expenditure
PTRM	Post tax revenue model
SCO	Ministerial Council on Energy Standing Committee of Officials
STPIS	Service target performance incentive scheme
TUOS	Transmission use of system

Summary

The Australian Energy Market Agreement establishes that the Australian Energy Regulator (AER) will assume responsibility for the economic regulation of electricity distribution services in the National Electricity Market (NEM). This is expected to take place by early 2008. The first distribution determinations the AER will be required to make will be for the regulatory control period 2009-2014 in relation to the following Distribution Network Service Providers (DNSPs):

- ActewAGL
- Country Energy
- EnergyAustralia
- Integral Energy

(the ACT and NSW DNSPs).

Amendments to the National Electricity Rules (NER) are currently being drafted that will set out the regulatory framework under which the AER will regulate distribution services. These amendments will not take effect with sufficient time for them to fully be applied for the distribution determinations for the ACT and NSW DNSPs. Consequently, transitional arrangements will apply to the ACT and NSW DNSPs.

This paper is based on the AER's understanding of the requirements of the transitional arrangements that will apply to the ACT and NSW DNSPs. This understanding has been developed on the basis of:

- Proposed amendments to Chapter 6 of the NER¹
- Table 3 of the response of the Ministerial Council on Energy Standing Committee of Officials (SCO) to stakeholder comments on the general transitional arrangements and NSW/ACT transitional arrangements²
- Liaison with the SCO regarding the content of transitional arrangements.

The AER understands that a draft of these transitional arrangements will be made publicly available shortly. The AER will review the transitional arrangements when they are released, and may modify its proposed approaches to issues if the final version of the arrangements differs to the AER's understanding of its likely content.

This paper sets out preliminary positions of the AER as to how the following matters will be applied in the AER's distribution determination for ACT and NSW DNSPs for the 2009-2014 regulatory control period:

- Post tax revenue model
- Roll forward model
- Efficiency benefit sharing scheme

¹ Available at www.mce.gov.au.

² See SCO Response to Draft NER (1 August 2007) at www.mce.gov.au.

- Service target performance incentive scheme
- The control mechanism for direct control services.

The preliminary positions in this paper are based on the views of AER staff, and have not yet been considered by the AER Board. The AER has also released a separate issues paper concerning the application of three issues in the 2009-2014 distribution determinations: demand management incentive schemes, the control mechanisms for alternative control services, and the AER's likely approach to determining materiality in the context of possible pass through events.

Consultation processes

The AER's preparations to assume responsibility for the economic regulation of electricity distribution services in the NEM will include the release in November 2007 of four papers for consultation: two papers relevant only to the distribution determination that will apply to the ACT and NSW DNSPs for the 2009-2014 regulatory control period, and two papers relevant to the entire NEM. These papers are:

- This preliminary position paper outlining preliminary positions with respect to various issues of relevance to the ACT and NSW distribution determinations for the 2009-2014 regulatory period
- An issues paper with respect to other matters of relevance to the ACT and NSW distribution determinations for the 2009-2014 regulatory period
- An issues paper discussing the development of a service target performance incentive scheme that will potentially apply across the NEM
- An issues paper discussing other models, incentive schemes and guidelines that will potentially apply across the NEM.

Due to the timing of the ACT and NSW distribution determinations, the AER will have to finalise the basis on which it will make its decisions with respect to these determinations before it prepares guidance on the conduct of future distribution determinations in other parts of the NEM. Consequently, the guidelines relevant to the ACT and NSW distribution determinations will be completed before those under the general Chapter 6. The positions that the AER reaches with respect to the matters discussed in this paper for the ACT and NSW distribution determinations will not be determinative of the positions it will reach when determining a position to apply in other parts of the NEM.

Processes for the ACT and NSW distribution determinations

Preliminary position paper for ACT and NSW

The AER proposes to make final decisions on the matters discussed in this paper following consideration of any submissions, and does not propose to release further written guidance on its likely approaches prior to making a final decision. However, the AER is willing to engage with stakeholders until a final decision is made.

The AER requests submissions on the matters discussed in this paper by Monday 7 January 2008. Given the time available in which to make decisions on the matters discussed in this paper, the AER encourages interested parties to discuss any issues of concern with the AER before this time.

Issues paper for ACT and NSW

The AER has released a separate issues paper discussing issues relevant to the ACT and NSW distribution determinations with respect to which it is yet to reach a preliminary position. The AER proposes to release a further paper setting out its preliminary positions with respect to the matters discussed in the issues paper after considering any submissions on that paper. The AER will seek further submissions at the time it releases its preliminary positions on those matters. A final decision on the matters discussed in the issues paper will be made after the amendments to the NER take effect.

Request for submissions on this preliminary position paper

Interested parties are invited to make written submissions to the AER on the preliminary positions in this paper by the close of business **Monday, 7 January 2008**. Submissions can be sent electronically to AERInquiry@aer.gov.au. Alternatively, written submissions can be sent to:

Mr Mike Buckley
General Manager
Network Regulation North Branch
Australian Energy Regulator
GPO Box 3131
Canberra ACT 2601

The AER prefers that all submissions be in an electronic format and publicly available, to facilitate an informed, transparent and robust consultation process. Accordingly, submissions will be treated as public documents and posted on the AER's website, www.aer.gov.au except and unless prior arrangements are made with the AER to treat the submission, or portions of it, as confidential.

Any enquiries about the preliminary positions, or about lodging submissions, should be directed to the Network Regulation North Branch on (02) 6243 1233 or at the above email address.

1 Regulatory framework for ACT and NSW 2009-2014 distribution determination

1.1 Amendments to the National Electricity Rules

Jurisdictional regulators are currently responsible for the economic regulation of electricity distribution services under Chapter 6 of the National Electricity Rules (NER). Amendments to the NER transferring this responsibility to the AER are expected to take effect in early 2008. These amendments will confer responsibility on the AER to make a 'distribution determination' in respect of each Distribution Network Service Provider (DNSP) operating in the National Electricity Market (NEM).

The first distribution determinations that the AER will be required to make under the amended NER will apply to the DNSPs that operate in the ACT and NSW, for the regulatory control period 2009-2014. These DNSPs are:

- ActewAGL
- Country Energy
- EnergyAustralia
- Integral Energy

(the ACT and NSW DNSPs).

The AER must make its distribution determinations in respect of the ACT and NSW DNSPs by 1 May 2009.

This paper sets out preliminary positions of the AER with respect to certain matters that are relevant to these distribution determinations. The preliminary positions in this paper are based on the views of staff, and have not yet been considered by the AER Board.

Unless otherwise indicated, references in this paper to a 'distribution determination' are to the distribution determination that the AER will make in relation to DNSPs operating in the ACT and NSW for the 2009-2014 regulatory control period.

1.2 Transitional Rules for ACT and NSW DNSPs

Amendments to Chapter 6 of the NER are currently being drafted that will change the economic regulatory framework for distribution services in the NEM. The Ministerial Council on Energy Standing Committee of Officials (SCO) has noted that the ideal scenario would be for the ACT and NSW distribution determinations to be made under the amended Chapter 6 that will apply across the NEM, however, time constraints on the preparation and assessment of regulatory proposals will not allow this to occur.³ Accordingly, SCO has decided that transitional arrangements for the ACT and NSW distribution determinations are necessary.

Rather than the amended Chapter 6 being applied to the ACT and NSW distribution determinations, Chapter 11 of the NER will provide that a modified version of the new

³ SCO Response to Draft NER (1 August 2007), p.79.

Chapter 6 - a transitional Chapter 6 - will apply. In this paper a reference to the 'general Chapter 6' means the new Chapter 6 that will apply across the NEM and take effect early next year. A reference to the 'transitional Chapter 6' or 'transitional Rules' is a reference to the rules that will apply to the ACT and NSW distribution determinations. The AER understands that a draft of the transitional Chapter 6 will be made publicly available by SCO shortly.

The AER understands that SCO's approach to developing arrangements for the ACT and NSW distribution determination has generally been to apply the national arrangements in the general Chapter 6 where feasible. SCO's explanatory material accompanying the release of the exposure draft of Chapter 6 in April 2007 indicates that the general Chapter 6 has been developed with the objective of consistency with transmission where appropriate:

To achieve the MCE's objective of consistency where appropriate, the Exposure Draft of distribution revenue Rules largely builds on the AEMC's approach to economic regulation of electricity transmission. The Exposure Draft takes into account differences in the nature of transmission and distribution networks, based on analysis of these differences undertaken during the development of the draft Rules.⁴

Where it is not feasible to apply the arrangements in the general Chapter 6, because of timing constraints, SCO's approach has been to adopt transitional arrangements, with the result that some provisions of transitional Chapter 6 will differ to those of the general Chapter 6. In recognition of the limited time available to consider alternative approaches to those in the general Chapter 6, the transitional Chapter 6 will largely preserve key elements of the current frameworks applied in the ACT and NSW.

In developing its preliminary positions, the AER has taken into account SCO's approach to the development of transitional arrangements. In accordance with the objective of consistency with transmission where appropriate, the AER has considered whether its approaches in transmission should be adopted for distribution. Unless there is sufficient time to consider and implement changes to existing arrangements, or there is a clear reason to change existing arrangements, the AER has generally proposed to maintain the approaches taken by the Independent Competition and Regulatory Commission (ICRC) and the Independent Prices and Regulatory Tribunal (IPART) in the current regulatory period.

1.3 Consultation for ACT and NSW resets

Requirements of the NER

The transitional Chapter 6 will provide for various models, incentive schemes and guidelines to be prepared by the AER in advance of making the distribution determination that will apply to the ACT and NSW DNSPs. Among others, transitional Chapter 6 will provide for the following:

⁴ *Changes to the National Electricity Rules to establish an economic framework for the regulation of electricity distribution, Explanatory Material*, April 2007, available at www.mce.gov.au.

- A post-tax revenue model must be published by 1 February 2008 or the date that is one month after the commencement of the amendments to the NER (whichever is the later)
- A roll forward model must be published by 1 February 2008 or the date that is one month after the commencement of the amendments to the NER (whichever is the later)
- An efficiency benefit sharing scheme may be published, however, it may not be applied in the distribution determination if it is not published by 1 March 2008 or the date that is one month after the commencement of the amendments to the NER (whichever is the later)
- A service target performance incentive scheme may be published, however, it may not be applied in the distribution determination if it is not published by 1 March 2008 or the date that is one month after the commencement of the amendments to the NER (whichever is the later)
- A guideline may be published as to the control mechanism for direct control services

The transitional Chapter 6 will provide that in developing these models, incentive schemes and guidelines, the AER may carry out such consultation as it considers appropriate and may take into consideration any consultation carried out before the commencement date of the amendments to the NER. In view of the time available and the need to provide stakeholders with adequate opportunity to comment on matters relevant to the ACT and NSW distribution determinations, the AER considers it appropriate to commence consultation prior to commencement of the amendments to the NER.

The transitional Chapter 6 will provide that once they are finalised, the models, incentive schemes and guidelines referred to in this paper may subsequently be amended.

The transitional arrangements will provide for the continuation of some arrangements that are currently in place. These include ring fencing and capital contributions arrangements. Cost allocation methodologies must be submitted by the ACT and NSW DNSPs to the AER after the NER take effect, however the AER is not required to release cost allocation guidelines for the ACT and NSW DNSPs. Consequently, the AER will not consult on these issues at this time.

Engagement with ACT and NSW DNSPs

The AER has been liaising with the ACT and NSW DNSPs for a number of months in anticipation of preparing the models and incentive schemes provided for under transitional Chapter 6. A consultation session was held on 21 June 2007 in which AER staff presented proposals for certain models and incentive schemes to be developed under the transitional Chapter 6. Following this consultation session, further meetings between the ACT and NSW DNSPs and the AER have occurred in which issues associated with the upcoming distribution determination, including the development of guidelines under transitional Chapter 6, were discussed.

Proposed consultation process

The AER will make decisions with respect to the matters referred to in this paper after the NER take effect. The AER proposes to make final decisions on these matters following consideration of the submissions received on this paper, and does not propose to release further written guidance on its likely approach prior to making a final decision. However, the AER is willing to engage with stakeholders until a final decision is made.

Other consultation for ACT and NSW distribution determinations

In addition to the matters discussed in this paper, the AER is consulting on other matters provided for under transitional Chapter 6 through a separate issues paper.

Separate consultation is being undertaken on the information requirements that will apply to the regulatory proposals the ACT and NSW DNSPs will be required to submit to the AER. The AER proposes to specify these requirements through regulatory information notices to be issued under the National Electricity Law, rather than through guidelines under the NER.

1.4 Consultation under general Chapter 6 of the NER

The general Chapter 6 of the NER will provide for the AER to develop various guidelines that may be applied to DNSPs across the NEM.⁵ The guidelines of broad application will not be developed in time for them to be applied in the ACT and NSW distribution determinations. Consequently, the NER will require the AER to develop separate guidelines under transitional Chapter 6 that will apply for the upcoming regulatory control period for the ACT and NSW DNSPs.

This paper is relevant only to the guidelines that will be published for the ACT and NSW distribution determination under transitional Chapter 6 of the NER. Separate papers will be released relating to the guidelines under general Chapter 6 of the amended NER.

Given that the AER's guidelines under general Chapter 6 and transitional Chapter 6 will be informed by separate consultation processes, the guidelines under the two chapters may vary. The guidelines that the AER develops for the ACT and NSW distribution determination may, in some circumstances, provide guidance as to the AER's likely approach to guidelines under general Chapter 6. However, they will not be determinative of the AER's positions under general Chapter 6.

Although the guidelines developed under general Chapter 6 and transitional Chapter 6 may vary, there is scope to align the two sets of guidelines following the conclusion of the general Chapter 6 guidelines process.⁶ Should differences arise in the guidelines

⁵ In this section, the term 'guidelines' is used to include guidelines, incentive schemes and models.

⁶ The transitional post tax revenue model, roll forward model, efficiency benefit sharing scheme and service target performance incentive scheme may be amended with the agreement of the ACT and NSW DNSPs. Amendments to other guidelines discussed in this paper may be made subject to such consultation as the AER considers appropriate.

under general Chapter 6 and transitional Chapter 6, it is possible to amend the transitional Chapter 6 guidelines following the conclusion of the general Chapter 6 guidelines process.

In summary, the AER will engage in separate consultation processes for the guidelines under general Chapter 6 and transitional Chapter 6. This paper is relevant to the guidelines that will be published under transitional Chapter 6 of the NER, and the AER's decisions on these matters will not determine the AER's position on guidelines under general Chapter 6.

2 Post tax revenue model

The PTRM provides the basis for establishing the regulatory revenue for service providers or indicative revenue for service providers subject to a weighted average price cap (WAPC).

The post tax revenue model (PTRM) provides the basis for establishing the regulatory revenue requirement for distribution network service providers (DNSPs).

2.1 Requirements of the NER

Consistent with the approach set out in the NER for electricity transmission regulation, the transitional Rules will prescribe the development of a model by the AER that is to be used to perform building block calculations. The PTRM contains detailed calculations that are not amenable to prescription in the NER but are able to be developed and applied by the AER to all DNSPs.

2.1.1 Building blocks

The transitional Rules will provide that the annual revenue requirement is comprised of the following building blocks:

- indexation of the regulatory asset base (RAB)
- a return on capital
- depreciation
- the estimated cost of corporate income tax
- the revenue increments or decrements (if any) for that year arising from the application of the service target performance incentive scheme and the demand management incentive scheme
- the other revenue increments or decrements (if any) for that year arising from the application of a control mechanism in the previous regulatory control period
- for NSW DNSPs, certain revenue increments or decrements for that year arising from the D-factor carry forward
- forecast operating and maintenance expenditure (opex)

2.1.2 Elements of the PTRM

The transitional Rules will require the AER to publish a PTRM before 1 February 2008 or one month after the commencement date. Revenue proposals submitted by DNSPs must be prepared in accordance with the PTRM.

The PTRM must include at least:

- a method that the AER determines is likely to result in the best estimates of expected inflation
- the timing assumptions and associated discount rates that are to apply in relation to the calculation of the building blocks
- the manner in which working capital is to be treated

- the manner in which the estimated cost of corporate income tax is to be calculated.

The transitional Rules will prescribe the method by which the RAB is valued for each year of the regulatory control period, namely that it is rolled forward by adding forecast capex, subtracting forecast depreciation and disposals and adjusted for inflation.

The transitional Rules will provide that depreciation must be calculated such that:

- the depreciation profiles reflect the economic life of that asset or asset category
- the sum of real depreciation over the life of the asset is equal to the value at which the asset was first recognised for regulatory purposes
- the lives, depreciation method and rates used in calculating forecast depreciation must be consistent with those actually applied during that regulatory control period.

The transitional Rules will require the PTRM to specify the timing assumptions and associated discount rates that are to apply in relation to the calculation of the building blocks.

The transitional Rules require the AER to include the X-factor for each regulatory year of the regulatory control period in the revenue determination (discussed at 2.2.2).

2.1.3 Capital contributions

The PTRM has an implicit assumption that DNSPs directly finance their capex. To the extent that this is not the case, that is, assets (and/or financial contributions) are gifted to a DNSP, the RAB will not record those assets for the purposes of calculating returns on and of capital.

The transitional Rules will provide guiding principles in relation to such contributed assets:

- the DNSP is not entitled to recover asset related costs for assets provided by network users
- the DNSP may receive a capital contribution, prepayment and/or financial guarantee up to the future revenue related to the provision of services for any new assets installed as part of a new connection or modification to an existing connection, including any augmentation to the distribution network
- where assets have been the subject of a contribution or prepayment, the DNSP must amend its revenue related to the provision of direct control services.

Capital contributions will have consequences for assessing a DNSP's tax allowance. This is discussed at 2.2.1.

2.1.4 Pre-tax to post-tax

The Rules require that the rate of return for a DNSP must be calculated as a nominal post-tax weighted average cost of capital (WACC).

Under the transitional Rules the AER may produce a guideline on its proposed approach to transitioning from pre-tax to post-tax revenue regulation. The AER has conducted consultation with the businesses on this issue. As this guideline is optional, the AER does not propose releasing a separate guideline on the transition from pre-tax to post-tax. The AER has attached a discussion paper on this topic which the AER previously released to the ACT and NSW DNSPs (see appendix A).

This discussion paper, among other things, considers the AER's approach to determining the weighted average cost of capital on a post-tax basis and the establishment of the opening tax values of assets in accordance with the national tax equivalence regime (NTER).

2.2 AER considerations

The AER considers that the PTRM developed by the AER in accordance with Chapter 6A and released on 28 September 2007 provides an appropriate basis for modelling a DNSP's forecast revenue.

Recognising differences between the operation of DNSPs and TNSPs the Chapter 6A PTRM will need to be modified to take account of capital contributions and annual revenue adjustments that occur through the operation of price caps.

2.2.1 Capital contributions

In some circumstances, DNSP customers directly fund the construction of distribution assets. These are referred to as 'capital contributions'. These assets are 'given' to the DNSP to operate and maintain. Assets received in kind are treated as revenue for tax purposes. For this reason a DNSP has to receive a revenue allowance to meet this tax obligation.

Note the following example:

- A DNSP receives a \$10m capital contribution.
- The DNSP incurs a \$3m tax liability and receives the benefit of a \$10m tax asset to be depreciated in future years.
- The tax value of the asset is set in nominal terms.
- IPART did not address this directly as it considered the pre-tax WACC allowance with the assumption of 30 per cent effective tax rate provided 'sufficient compensation' to address any short fall arising from the capital contributions tax timing issues.⁷
- Similarly, the ICRC used a statutory tax rate of 30 per cent, which it considered was 'more than likely to overstate the actual effective tax cost incurred by the business'.⁸

⁷ IPART, NSW Electricity Distribution Pricing 2004/05 to 2008/09 (Final), June 2004, p 51

⁸ ICRC, Investigation into prices for electricity distribution services in the ACT (Draft), November 2003, pp 58-59

The AER proposes that the PTRM for distribution model capital contributions explicitly as per the description below:

- In the PTRM for distribution, the forecast value of capital contributions will be recorded in the period in which the contribution is expected to be received.
- As with capex and disposals, the value of contributions is to be reported against the relevant asset class.
- These contributions are netted from capex for the purpose of determining return on capital and are recognised as taxable income.

Given the requirements of the transitional Rules, the AER proposes that the PTRM for distribution exclude capital contributions from the RAB (consistent with the existing treatment of capital contributions in NSW and the ACT). The AER proposes that the PTRM for distribution will model the tax implications of capital contributions.

2.2.2 X-factors

Unlike the equivalent provisions of clause 6A.5.3 for electricity transmission, the transitional Rules will not require the PTRM to deal with the calculation of X-factors. Under Chapter 6 of the NER, the form of control mechanism is to be determined by the AER for each DNSP during regulatory reset processes and may differ between them. Under the transitional Rules, the NSW businesses will be regulated under a weighted average price cap (WAPC) whereas an average revenue cap will apply to ActewAGL.

The X-factor calculated in the transmission PTRM is used to smooth revenue over the regulatory control period. The X-factor for the ACT will be calculated in the same way as transmission. The X-factor for NSW DNSPs has been calculated by IPART to equate forecast building block costs with forecast revenues (the product of forecast volumes and forecast prices) through an iterative modelling process. This X-factor is then required for the separate WAPC formula/model that will accompany the NSW businesses' pricing proposals.

As the form of control for ACT and NSW businesses is set out in the transitional Rules, the AER considers that the PTRM for distribution should have the facility to calculate X-factors to suit both forms of control. The AER proposes that the PTRM provide the flexibility to undertake the X-factor calculation in accordance with the relevant control mechanism.

2.2.3 Cash-flow timing issues

The PTRM for electricity transmission models forecast revenues and expenditures on an annual basis. The revenues and expenditures are assumed to occur on the last day of the regulatory year. Capex is recognised in the middle of each year and earns a half-year return which is capitalised into the RAB at the end of the year. This particular timing assumption recognises that capex can occur evenly throughout the year, which is approximated by the middle of the year assumption.

In the distribution PTRM for ACT and NSW, the AER proposes to continue with the current cash flow timing assumptions that revenues and expenditures to occur on the last day of the regulatory year and capex is recognised in the middle of each year.

These assumptions may be reviewed in the consultation process for the national distribution guidelines.

2.2.4 Depreciation

As with its transmission guideline released on 28 September 2007, the AER considers that the straight-line method for calculating depreciation will satisfy the requirements of the transitional Rules. This is because the expenditure profile reflects the nature of the assets over their economic life and the sum of real depreciation values over the asset's economic life is equivalent to the value at which that asset was first included in the RAB.

2.2.5 Capex recognition

The AER proposes that the PTRM for ACT and NSW DNSPs will depreciate assets from when they are commissioned while the return on capital is calculated from when capex is incurred. This partially as-incurred (hybrid) approach which ensures that businesses recover the cost of assets from when they contribute to service delivery was considered in the consultation process on the transmission guidelines. This is the approach adopted in the PTRM for transmission.

2.2.6 Pre-tax to post-tax

2.2.6.1 Setting the tax base

The AER proposes to establish opening values for the tax base in light of the specific circumstances of each business. One of the most notable influences concerns business ownership:

- For tax paying entities, the AER proposes taking the value of a firm's assets for tax purposes when it first became subject to tax, and rolling these values forward to the date when a post-tax approach is to apply, taking account of relevant tax depreciation rules and actual capex and disposals. This approach is discussed in more detail in the pre-tax to post-tax discussion paper.⁹
- In the case of government owned businesses, the proposed approach is similar, but utilises the date and tax base when the business became subject to the NTER.

2.2.6.2 Impact on revenue – transfer to post-tax approach

Under previous determinations by the jurisdictional regulators, the tax allowance for ACT and NSW DNSPs was based on the statutory rate and not their effective tax rate. Judged against the benchmark of determining tax allowance according to the effective tax rate it is likely that the allowance for tax has exceeded actual tax liabilities for these businesses.

The AER does not propose to assess this amount or seek any adjustment to future revenues to take account of this.

⁹ In certain circumstances, this approach may not be practical in which case an alternate reconciliation to tax accounts could be considered as part of the framework and approach process.

2.3 Preliminary position

The AER proposes that the PTRM which the AER developed in accordance with Chapter 6A form the basis of the PTRM to be applied to the ACT and NSW DNSPs. The PTRM would need to be modified to allow for capital contributions as set out below:

- Capital contributions will be netted off forecast capex for determining return on and of capital.
- Capital contributions will be included as assessable income in the year received for determining tax liability.
- Assets resulting from capital contributions will be included in the tax value of assets and will be subject to tax depreciation for determining tax liability.

The tax value of assets would need to be established according to the tax status of the entity:

- NTER entities will roll forward the tax values of assets from their entry to the regime.
- For tax paying entities, the tax value of assets will be reconcilable to entry into the tax system.

The AER proposes that the tax building block will provide revenue compensation which accords with the effective tax rate rather than the statutory tax rate. In addition, there will be no adjustment for past revenue compensation based on the statutory tax rate.

As part of its single regulatory decision, EnergyAustralia's distribution and transmission assets will be brought together for determining the overall building block revenue requirement. However, the AER proposes to require these assets to remain separate to allocate revenue between transmission and distribution for pricing purposes. The AER is aware that modifications to the PTRM to accommodate EnergyAustralia transmission and distribution assets will be required and the AER will consult further on adopting appropriate arrangements.

2.4 Request for submissions

Submissions are sought on the preliminary positions in respect of the PTRM, including the likely magnitude of the administrative costs of modifying current practices.

3 Roll forward model

3.1 Requirements of the NER

The transitional Rules will require the AER to publish the first roll forward model by 1 February 2008 or one month after the commencement date of the amended NER (whichever is the later).

The roll forward model must set out the method for rolling forward and calculating the RAB:

- from one regulatory control period to the beginning of the first year of the next regulatory control period
- from one regulatory year to the next regulatory year within the same regulatory control period.

The requirements of the transitional Rules will differ with respect to the roll forward models for the ACT and NSW DNSPs.

3.1.1 ACT

The transitional Rules will provide that the roll forward model for ActewAGL must apply the approach adopted by the ICRC in the current determination, but taking into account any written representations by the ICRC to ActewAGL before the commencement date of the amendments to the NER.

In determining the opening asset base in 2009, the AER will be required to:

- determine the opening asset base in 2004 by using the values specified in the transitional Rules, and adjusting for any difference between estimated capex and actual capex in the previous regulatory control period
- add actual capex (subject to an ex post prudence review) incurred during 2004-09 and where actual is not available, add estimated capex to the 2004 opening asset base
- reduce the previous value of the asset base by the amount of depreciation of the RAB during the previous regulatory control period according to the approach determined by the ICRC
- reduce the previous value of the RAB by the disposal value of any assets disposed
- make adjustments for any reclassification of services or change in the use of assets that affects the classification of the services provided by the assets.

3.1.2 NSW

The transitional Rules will adopt the approach to be taken in the general Chapter 6 for determining the opening asset base in 2009.

In determining the opening asset base in 2009, the AER will be required to:

- determine the opening asset base in 2004 by using the values specified in the transitional Rules, and adjusting for any difference between estimated capex and actual capex in the previous regulatory period
- add the amount of capex incurred during 2004-2009
- add actual capex incurred during 2004-2009 and where actual is not available, add estimated capex to the 2004 opening asset base
- reduce the previous value of the asset base by the amount of actual depreciation of the regulatory asset base during the previous regulatory control period, calculated in accordance with the rates and methodologies allowed in the IPART determination
- reduce the previous value of the regulatory asset base by the disposal value of any assets disposed
- make adjustments for any reclassification of services or change in the use of assets that affects the classification of the services provided by the assets.

The value of the RAB of EnergyAustralia's transmission business at the beginning of the first year of the regulatory control period (2009-2014) will be specifically addressed in the transitional Rules. The roll forward model for EnergyAustralia's transmission RAB must be applied separate to distribution and as if the AER was regulating EnergyAustralia's transmission system under the relevant provisions of Chapter 6A.

3.2 Considerations

The AER will use the roll forward model to determine the closing RAB for service providers at the end of each regulatory control period. The roll forward model establishes the service providers' RAB for each year of the current regulatory control period to reflect net capex and depreciation during that period. The closing RAB for the current regulatory control period becomes the opening RAB for the purposes of determining the revenue requirement for the next regulatory control period and is used as an input to the PTRM.

There are a range of issues that need to be considered in applying the roll forward model to ACT and NSW DNSPs which are noted below:

- The AER needs to establish the opening asset base of the current regulatory control period.
 - Service providers are unable to provide the value of actual capex from the final year of the previous regulatory control period. An adjustment to the value of the opening base is therefore required.
- Recognition of capex – as expenditure is incurred or upon commissioning
 - The AER's transmission roll forward model operates on a hybrid basis whereby capex earns a return on capital as incurred but is not depreciated until the assets come into service. Both IPART and the ICRC adopted an 'as incurred' approach to recognising capex. The AER proposes to adjust the method for recognising capex in the transmission roll forward model to accord with the previous determinations by IPART and the ICRC.

— In previous determinations, IPART and the ICRC forecast depreciation as the sum of depreciation of existing assets as well as depreciation of 50 per cent of forecast capex in each year to reflect the full ‘as incurred’ approach to recognising capex and the fact that capex occurs throughout the year. The assumption of 50 per cent of forecast capex implies that, on average, forecast capex occurs evenly through the year.

- When calculating the closing asset base, various jurisdictional regulators have recognised depreciation in different ways (the ICRC used actual; IPART used regulatory).¹⁰ The transitional Rules require actual depreciation for the NSW DNSPs for electricity distribution which is the same as Chapter 6A. The AER’s understanding of the ICRC approach is that actual depreciation will be appropriate for ActewAGL.
- When establishing the closing asset base through the regulatory control period forecast values for capex and opex are adjusted for out turn inflation.

3.2.1 ACT distribution roll forward model

The AER is considering adopting the model that the ICRC used at the last determination to roll forward ActewAGL’s asset base from 2004 to 2009. In order to do so, the AER would need to consider:

- Including adjustments for ‘forecasts implicit in the 2004 opening value’, and
- The allocation of RAB between asset classes as the ICRC roll forward model operates at the network level. The PTRM requires asset values for individual asset classes. The RAB could be divided on the basis of information in ActewAGL’s asset registers if available. Alternatively, the RAB could be apportioned into asset classes on the basis of the relativities within the 1998-99 depreciated optimised replacement cost (DORC) valuation applied by the ICRC.

3.2.2 NSW distribution roll forward model

An option for the AER is to apply the roll forward model that it developed for electricity transmission and released on 28 September 2007 to electricity distribution in NSW. Further consideration of indexation issues may be required to ensure the closing RAB for the period 2004-05 to 2008-09 is indexed on a comparable basis for input to the PTRM.

3.2.3 EnergyAustralia specific changes

The AER will need to reconcile the previous treatment of EnergyAustralia’s assets (transmission and distribution) with the transitional Rules. The AER intends to consult further on these issues with EnergyAustralia to determine an appropriate approach.

Based on initial consultation with EnergyAustralia, the AER’s understanding of EnergyAustralia’s requirements is set out below. The AER envisages the process set

¹⁰ The term regulatory depreciation is used to describe the approach whereby depreciation is calculated on the basis of forecast capex over a regulatory control period rather than updated for actual capex.

out after the first two dot points below will be applied through a series of additional worksheets to sit alongside the transmission and distribution roll forward models.

- Roll forward transmission and distribution RABs separately.
- The AER could use the same roll forward model as it released on 28 September 2007 which will be modified as the AER is to have regard to the current ACCC and IPART determinations with respect to recognition of capex.
 - At the last determination, the ACCC adopted a full ‘as incurred’ approach to recognising capex for EnergyAustralia. As the transmission roll forward model uses a hybrid approach, the roll forward model used for EnergyAustralia transmission will need to be amended to an ‘as incurred’ model to be consistent with the current ACCC determination.
- The AER will use individual roll forward calculations for transferring distribution system assets, either by identifiable asset or by classes of assets.
- The AER will calculate revised distribution and transmission system asset values, following the transfer of distribution system assets to the transmission system assets.
- The proportion of distribution system assets to transmission system assets will be used to allocate non-system assets between distribution and transmission.
- This will result in opening asset values of the RAB for both transmission and distribution.

3.3 Preliminary position

The AER considers it necessary to use two separate roll forward models for the upcoming ACT and NSW electricity distribution determinations:

- A model for ActewAGL that applies the approach adopted by the ICRC
- A model for the NSW businesses in accordance with the requirements of the transitional Rules outlined above.

The AER proposes the following arrangements:

1. ActewAGL - apply the same model as that applied by the ICRC to ActewAGL at the last reset. ActewAGL has provided the AER with a copy of the model that was used by the ICRC at the last determination and the AER is in consultation with ActewAGL on the model. Once the AER has made any amendments necessary to roll forward the RAB from 2004 to 2009 and has finalised the model, the AER will publish it. The AER will need to consider:
 - Including adjustments for ‘forecasts implicit in the 2004 opening value’
 - Allocation of RAB between asset classes.
2. Country Energy, EnergyAustralia, and Integral Energy - apply the roll forward model developed for electricity transmission and released on 28 September 2007
 - The model may require minor adjustment to ensure the transition to PTRM is internally consistent with appropriate indexation applied.

- This model will be modified to be a full ‘as incurred’ model, consistent with previous determinations.

The AER will engage in further consultation with EnergyAustralia to determine the appropriate approach to:

- Rolling forward its distribution and transmission RABs
- Accounting for distribution assets moving to transmission, and
- Reallocating non-system assets between transmission and distribution.

3.4 Request for submissions

The AER has placed on its website the roll forward model that it intends to use for the NSW businesses. It will add the ACT model following further consultation with ActewAGL.

The AER seeks comments on the models on its website as well as the issues outlined in this paper, including the likely magnitude of the administrative costs of modifying current practices.

4 Efficiency benefit sharing scheme

4.1 Requirements of the NER

The transitional Rules will confer discretion on the AER to develop and publish a scheme or schemes that provide for a fair sharing between ACT and NSW DNSPs and users of:

- the efficiency gains derived from the operating expenditure of DNSPs for a regulatory control period being less than, and
- the efficiency losses derived from the operating expenditure of DNSPs for a regulatory control period being more than,

the forecast operating expenditure accepted or substituted by the AER for that regulatory control period.

Such a scheme is referred to as an efficiency benefit sharing scheme (EBSS).

The provisions of the transitional Rules relevant to the EBSS will be identical to those in the transmission Rules, with the exception that the EBSS will be discretionary in the transitional Rules, and the AER may, but is not required to, develop a distribution EBSS to cover efficiency gains and losses related to capital expenditure or distribution losses.

If the AER does not develop and publish an EBSS by 1 March 2008 or the date that is one month after the commencement of the amendments to the NER (whichever is later), no scheme may be applied to the ACT and NSW DNSPs for the regulatory control period 2009-2014.

Although there is discretion to apply an EBSS in the distribution determinations, the building blocks set out in the transitional Rules that will establish the annual revenue requirement for the 2009-2014 regulatory control period will not include revenue increments or decrements arising from the application of an EBSS. This means that any EBSS will not have a direct financial impact on DNSPs before 2014.

In developing and implementing an EBSS, the AER must have regard to the following factors:

- (a) the need to ensure that benefits to consumers likely to result from the scheme are sufficient to warrant any reward or penalty under the scheme for DNSPs
- (b) the need to provide DNSPs with a continuous incentive, so far as is consistent with economic efficiency, to reduce operating expenditure and, if the scheme extends to capital expenditure, capital expenditure
- (c) the desirability of both rewarding DNSPs for efficiency gains and penalising DNSPs for efficiency losses
- (d) any incentives that DNSPs may have to capitalise expenditure

- (e) the possible effects of the scheme on incentives for the implementation of non-network alternatives.

4.2 Current position in ACT and NSW

Current regulatory arrangements in the ACT and NSW do not include an EBSS relating to operating expenditure for the regulatory control period 2004-2009.

4.3 Considerations

The AER proposes to develop an EBSS to give regulated businesses an incentive to respond to opportunities to achieve efficiency gains.

The AER proposes to develop an EBSS that is simple to understand and apply, is predictable, requires minimal adjustments and will not affect the financial viability of the regulated firm. In developing the EBSS, the AER will have regard to:

- the need to ensure that benefits to consumers likely to result from the scheme are sufficient to warrant any rewards or penalties for DNSPs
- the need to provide DNSPs with a continuous incentive, so far as is consistent with economic efficiency, to reduce opex
- the desirability of both rewarding DNSPs for efficiency gains and penalising DNSPs for efficiency losses
- any incentives that DNSPs may have to capitalise expenditure
- the possible effects of the scheme on incentives for the implementation of non-network alternatives.

Failure to publish an EBSS by 1 March 2008 or the date that is one month after the commencement of the amendments to the NER (whichever is later) would effectively delay the provision of financial incentives for efficiency improvements until 1 July 2019. The AER considers that it is not appropriate to wait until 2019 to commence operation of an EBSS, and proposes to develop and publish an EBSS by 1 March 2008.

The AER's proposed EBSS for the ACT and NSW DNSPs is based on consultation for the EBSS applying to transmission network service providers (TNSPs), which was released in September 2007. The AER understands that the provisions in the transitional Rules detailing the factors to which the AER must have regard in developing the EBSS for the ACT and NSW DNSPs will be similar to those in Chapter 6A of the NER. Accordingly, the AER proposes, to the extent that the Rules are the same, to apply an EBSS based on the approach taken for transmission businesses to the ACT and NSW DNSPs. The AER considers that to the extent that the operation of DNSPs is the same as the operation of TNSPs, the EBSS applicable to TNSPs should be equally applicable to DNSPs.

The EBSS applying to TNSPs calculates efficiency gains or losses on an incremental basis. That is, the efficiency gain or loss for a particular year is calculated as the difference between actual and forecast opex as they change from one year to the next. However, the efficiency benefit or loss derived in the first year and last year of the

regulatory period is calculated differently. The guideline attached at appendix B explains a more detailed operation of the EBSS and includes a numerical example.

The AER notes that the transitional Rules will provide scope for amendment to the EBSS with the agreement of the ACT and NSW DNSPs.

The following sections make general observations about the major attributes of the EBSS relative to the requirements of the transitional Rules.

4.3.1 Adjustments to forecast and actual operating expenditure

In calculating carryover gains or losses, the AER must be satisfied that the forecast and actual opex accurately reflects the costs faced by the DNSP in the regulatory period. Adjustments to forecast and actual opex will be made where necessary to correct for variances in the cost categories, methodologies and errors beyond the control of the DNSP.

Under the proposed EBSS, the AER has defined three default adjustments and will exclude the cost consequences of changes in capitalisation policy, differences between forecast and actual demand growth over the regulatory period and recognised pass through events from the actual and forecast opex amounts used to calculate carryover gains and losses.

Further, the AER proposes to permit a DNSP to propose additional categories of uncontrollable factors that should be excluded from the operation of the EBSS as part of its regulatory proposal. These categories must be specific to the business, involve an identifiable reason for being excluded and should not involve an ongoing business activity.

The AER will need to collect information to calculate the impact of the EBSS. An appropriate framework for the collection of relevant information will be developed by the AER in the future.

4.3.2 Treatment of fifth year gains or losses

When the forecasts for the next regulatory period and the carryover amounts are calculated, the actuals for the fifth year of the current regulatory control period are typically unknown. To address this issue, the AER proposes to equate the fifth year actuals so that the efficiency gain in the fifth year is equal to zero.

$$A5 = A4 - (F4 - F5)$$

To ensure efficiency gains or losses made in the fifth year are not ignored, they will be incorporated in the calculation of the efficiency gain of the first year of the following period. This method ensures that DNSPs face a constant incentive to make efficiency gains across the entire regulatory period.

$$E6 = (F6 - A6) - (F5 - A5) + (F4 - A4)$$

The AER considers this method to be administratively simpler than estimating fifth year actuals and making the appropriate adjustments to carryover amounts at the subsequent reset.

For a more detailed illustration, see the EBSS located at appendix B.

4.3.3 Negative carryovers

Subject to the adjustments noted in section 4.3.1, the AER proposes the EBSS will operate on a symmetric basis and apply all carryovers, both positive and negative.

4.3.4 Length of carryover period

The AER considers that the EBSS will be simpler to implement and administer if the carryover period is linked to the regulatory control period. For the ACT and NSW DNSPs, this will mean a notional five-year period for the carryover.

4.3.5 Benefits to consumers

The AER considers the EBSS an important part of the regulatory framework in encouraging DNSPs to reveal their efficient or true costs. This is achieved through the full application of both positive and negative carryover amounts and allowing DNSPs to retain these efficiency carryovers for a five year period.

Without an EBSS, DNSPs would face a diminishing incentive during a regulatory period to achieve efficiencies in opex. This would particularly be so if future opex targets are based on actual opex during the current regulatory period, hence providing a disincentive to reveal their efficient or true costs. The AER considers that the features of this EBSS will ensure the benefits to consumers through DNSPs revealing their efficient or true costs are sufficient to warrant any rewards or penalties for the ACT and NSW DNSPs.

4.3.6 Continuous incentive

The proposed EBSS provides a continuous incentive to achieve efficiencies by allowing the DNSP to retain, for a five year period following the year in which the efficiency gain or loss is incurred, the difference (negative or positive) between its actual and forecasting opex.

Regardless of which year in the regulatory control period the DNSP incurs the efficiency gain (loss), the positive (negative) difference between forecast and actual opex is retained by the DNSP for five years. This provides an equal incentive for a DNSP to achieve efficiency gains in each year of the regulatory control period.

4.3.7 Desirability of providing rewards and penalties

The AER proposes that the EBSS will apply all carryovers, both positive and negative to ensure incentives are constant and symmetric. The AER recognises that it is equally important to reward efficiency gains and penalise losses and considers the symmetrical carryover mechanism in the EBSS will encourage DNSPs to reveal their efficient or true costs.

The AER proposes not to add a further power to adjust carryover amounts. The AER will, however, consider amending the EBSS if provided with evidence that a significant residual risk to service quality remains.

4.3.8 Interaction between opex and capex

DNSPs may have some scope to respond to incentives in the EBSS by substituting expenditures between opex and capital expenditure (capex) to reduce actual opex and achieve a positive carryover amount. To determine whether these actions are inconsistent with the intent of incentive framework, the AER proposes that the EBSS will require explanation where a DNSP's capitalisation policy has changed. This will include detailing:

- any change in capitalisation policy and why the changes were made
- any change in factors that affect levels of maintenance or levels of opex, such as technological change
- the effect of the changes on the recognition of opex and capex.

4.3.9 Effects on incentives for non-network alternatives

The AER considers the EBSS to be consistent with the objectives to which the transitional Rules will refer. The incentive framework encourages DNSPs to pursue the most efficient alternatives. In developing the EBSS, the AER has had regard to the possible effects on the incentives for the implementation of non-network alternatives.

The AER will consider the appropriateness of the EBSS, if presented with evidence that the DNSP may be pursuing inefficient capex projects at the expense of non-network alternatives.

4.3.10 Capex and distribution losses

The transitional Rules will provide that the AER may (but is not required to) develop an EBSS to cover efficiency gains and losses relating to capex or distribution losses. The EBSS applying to transmission businesses does not apply to capex or transmission losses.

The AER considers that the issues surrounding the application of an EBSS to cover efficiency gains relating to capex or distribution losses are complex. In view of the limited time available to publish a scheme, the AER does not consider that it can adequately consider these issues for the ACT and NSW distribution determinations. However, the AER will consider the merits of developing an EBSS to cover capex or distribution losses as part of consultation under the general Chapter 6.

The AER notes that there is scope in the transitional Rules to amend the EBSS for the ACT and NSW DNSPs, with the agreement of the ACT and NSW DNSPs, following the development of an EBSS under the general Chapter 6.

4.3.11 Expenditure allowance for next regulatory control period

The AER proposes to evaluate the use of the fourth year out-turn opex (adjusted for scale and scope) as the basis for setting forecast opex in the next regulatory control period. Using fourth year actuals combined with the application of negative carryovers will provide the most consistent and continuous incentive for DNSPs to reveal their efficient or true costs.

However, the AER considers that it is not appropriate to do this on a purely mechanistic basis. The process of setting forecast opex for the next regulatory control period will be conducted according to the requirements set out in the relevant clause in the NER and the further requirements detailed in the regulatory information notice.

4.4 Preliminary position

ACT and NSW DNSPs will be subject to an EBSS based on the EBSS developed under Chapter 6A that applies to transmission businesses.

The EBSS will not have a direct financial impact on the ACT and NSW DNSPs before 2014. At this stage, it is not proposed to extend the EBSS to cover efficiency gains and losses related to capex or distribution losses for the distribution determination relating to the ACT and NSW DNSPs.

The proposed EBSS calculates efficiency gains and losses on an incremental basis and allows DNSPs to retain the benefits or penalties for a five year period. Subject to allowance for uncontrollable cost categories noted in section 4.3.1, the AER intends to apply all carryovers, both positive and negative. The EBSS is located at appendix B.

4.5 Request for submissions

The AER seeks submissions from interested parties on any issues regarding the proposed EBSS for the ACT and NSW DNSPs, including the likely magnitude of the administrative costs of modifying current practices.

5 Service target performance incentive scheme

5.1 NER requirements

The transitional Rules will give the AER discretion to develop and publish a service target performance incentive scheme (STPIS) to be applied in the ACT and NSW distribution determinations for 2009–2014. The AER understands the transitional Rules may preclude it from applying a STPIS with financial impact in the ACT, for the next determination. If this is the case, some of the options outlined in this chapter may no longer be relevant to the ACT.

At the time of publishing a STPIS, the AER is required to publish a written statement setting out how it proposes the service target performance incentive scheme will operate for the next distribution determination.

The transitional Rules will require that in formulating a STPIS, the AER must:

- consult with the authorities responsible for the administration of relevant jurisdictional electricity legislation
- ensure that service standards and service targets (including guaranteed service levels) set by the scheme do not put at risk the Distribution Network Service Provider's ability to comply with relevant service standards and service targets (including guaranteed service levels) as specified in jurisdictional electricity legislation¹¹
- take into account:
 - the need to ensure that benefits to consumers likely to result from the scheme are sufficient to warrant any reward or penalty under the scheme for Distribution Network Service Providers; and
 - any regulatory obligation or requirement to which the Distribution Network Service Provider is subject; and
 - the past performance of the distribution network; and
 - any other incentives available to the Distribution Network Service Provider under the Rules or a relevant distribution determination; and
 - the need to ensure that the incentives are sufficient to offset any financial incentives the service provider may have to reduce costs at the expense of service levels; and
 - the willingness of the customer or end user to pay for improved performance in the delivery of services; and

¹¹ The transitional Rules will require that the STPIS is to operate concurrently with any average or minimum service standards and guaranteed service level schemes that apply to the DNSP under jurisdictional electricity legislation.

- the possible effects of the scheme on incentives for the implementation of non-network alternatives.

The transitional Rules will also provide:

- The AER must monitor and collect information on matters relevant to be included in a STPIS for the purpose of developing, amending or applying a STPIS for the regulatory control period commencing on 1 July 2014.
- The AER may, in connection with the application of a STPIS applying to EnergyAustralia in respect of EnergyAustralia prescribed (transmission) standard control services provided in the regulatory control period 2009–2014, adopt relevant provisions of the STPIS prepared and published by the AER under Chapter 6A so far as it is applicable to the service.
- A STPIS applying to EnergyAustralia in respect of EnergyAustralia prescribed (transmission) standard control services should ensure that the maximum revenue increment or decrement as a result of the operation of the service target performance incentive scheme will fall within a range that is between 1 and 5% of the maximum allowed revenue for the relevant regulatory year.

5.2 Purpose of a service target performance incentive scheme

The regulatory framework applying to DNSPs gives them the incentive to reduce actual costs while seeking higher forecast opex and capex allowances. A regulated network may seek to reduce its costs in two ways:

- realising productive efficiencies, or
- deferring expenditure on forecast programs.

Cost reductions from genuine efficiency gains are generally accepted as beneficial for the business and customers. However, savings realised from inefficiently low levels of expenditure on the network are not desirable as they can result in reduced network reliability for customers.

The objective of a STPIS is to discourage network owners from reducing expenditure on the network such that performance levels fall below those achieved currently, or do not match those expected from new capital works. This is achieved by providing the business with various financial or non-financial incentives, linked to service performance, to maintain or improve the reliability of the network.

5.3 Current position in ACT and NSW

5.3.1 ICRC determination

Current regulatory arrangements in the ACT do not include a STPIS linked to ActewAGL's regulated revenues.

In 2005, the ICRC examined the possibility of implementing a STPIS for ActewAGL in the future, however, it concluded that implementing a scheme was not justified at that time.

5.3.2 ICRC considerations and reasoning

The ICRC's 2005 decision not to implement a scheme was based on the following considerations and conclusions:¹²

- Existing statutory performance requirements were of a high standard and ActewAGL had, in many cases, exceeded these requirements.
- Customers had reported satisfaction with the current overall level of service performance.
- There was no evidence that the level of service performance provided by ActewAGL was significantly different from an 'efficient' level.
- The costs of implementing a scheme would outweigh the benefits delivered through improved efficiency.
- Delaying the introduction of a scheme until longer-term regulatory arrangements were settled would avoid further uncertainty for the DNSP and regulator.¹³

5.3.3 ACT service performance requirements

ActewAGL is presently subject to a range of service performance requirements found within jurisdictional legislative instruments including the Utilities Act, Electricity Distribution (Supply Standards) Code and the Consumer Protection Code. These performance requirements are not linked to economic regulation, rather they represent obligations under the utilities licensing framework.

Current service performance requirements in the ACT can be categorised as:

- Minimum network reliability standards for SAIDI¹⁴, SAIFI¹⁵ and CAIDI¹⁶
- Quality of supply standards
- Rebateable performance standards (customer service performance indicators)

ActewAGL is required to report its performance against these quality of supply and reliability standards annually, according to the Electricity Distribution (supply standards) Code.

¹² ICRC, *Final decision: Review of efficiency and service incentive schemes*. December 2005. p.5

¹³ ICRC, *Draft decision: Review of efficiency and service standard incentive mechanisms*. March 2005. p. 33

¹⁴ System Average Interruption Duration Index. Defined as the sum of the duration of each sustained customer interruption (in minutes), divided by the total number of distribution customers. SAIDI excludes momentary interruptions (one minute or less duration).

¹⁵ System Average Interruption Frequency Index. Defined as the total number of sustained customer interruptions, divided by the total number of distribution customers. SAIFI excludes momentary interruptions (one minute or less duration).

¹⁶ Customer Average Interruption Duration Index. Defined as the sum of the duration of each sustained customer interruption (in minutes), divided by the total number of sustained customer interruptions (SAIDI divided by SAIFI). CAIDI excludes momentary interruptions (one minute or less duration).

5.4 Current position in NSW

5.4.1 IPART determination

The current determination for NSW DNSPs provides for an s-factor based ‘paper trial’ STPIS which carries no revenue risk. The scheme requires each DNSP to report its performance against self-determined targets for SAIDI, SAIFI, CAIDI and MAIFI¹⁷ (where available). This data is collected at a network wide level and by feeder type.

Each year, IPART models the s-factors and expected financial impact of each DNSPs performance outcome that would have resulted, had the scheme placed actual revenues at risk.

5.4.2 IPART considerations and reasoning

In 2004, IPART considered applying an s-factor scheme with financial impact to the NSW DNSPs for the 2004–2009 regulatory period. It concluded that a financial incentive should not be applied, deciding that it would conduct a paper trial in the first instance. IPART determined that placing revenue at risk under the s-factor scheme was not appropriate because:

- DNSPs data was not sufficiently robust to ensure that the difference between actual and target performance was an accurate reflection of over or under performance in service reliability.
- Using network average measures would have been necessary due to limited data availability and accuracy. This would incentivise the DNSP to focus efforts on ‘easy wins’ rather than improving performance on worst performing feeders.
- The s-factor derived in early years would need to be based on only one or two years of data. This data may have significant variation due to reasons beyond the control of the DNSP, and therefore not represent a fair measure of performance for applying a financial reward or penalty.

Progress of IPART S-factor paper trial

IPART is expected to publish an information paper in the near future presenting the results of the paper trial drawing on the two years of performance data collected to date.

Discussions with IPART indicate that this report is likely to suggest that the following factors would need to be considered if the s-factor paper trial were to be continued or extended to include a financial impact:

- consideration of a range of measures, including use of data by feeder type to calculate s-factors
- determining appropriate methods for setting meaningful targets for all measures
- development of appropriate incentive rates.

¹⁷ Momentary Average Interruption Frequency Index. Defined as the total number of customer interruptions of one minute or less duration, divided by the total number of distribution customers.

5.4.3 NSW service performance requirements

In August 2005 the NSW Minister for Energy and Utilities imposed additional licence conditions for NSW DNSPs. These conditions were subsequently amended by the Minister on 29 May 2006. The licence requirements set out minimum standards in a range of design planning criteria, reliability and quality of supply performance indicators.¹⁸ Among the key changes introduced in 2005 are:

- introduction of average reliability standards by feeder type
- introduction of minimum reliability standards for individual feeders
- introduction of customer service standards to provide financial recognition to customers experiencing poor reliability
- increased network security standards (design planning criteria) to apply to new network elements from 1 July 2007, and to all network elements from 1 July 2009.

Each NSW DNSP is required to report its performance quarterly against these reliability and customer service standards to the Minister. Performance against the design planning criteria must be reported annually.

5.5 Options for developing a scheme for the 2009–2014 determination

The AER considers there are four possible approaches to applying a STPIS for the 2009–2014 distribution determinations for the ACT and NSW:

1. Incentive scheme, linked to regulated revenues.
2. Incentive scheme linked to regulated revenues, but with no financial impact (paper trial).
3. Public comparative performance reporting.
4. Information collection only, with a view to applying of a scheme in the future.

5.5.1 Incentive scheme linked to regulated revenues

A scheme developed under this option may use a range of indicators to measure performance against specified targets. The key characteristic of this approach is that the revenue equation includes an additional mechanism (s-factor) to allow the annual adjustment of regulated revenue allowances, based on its performance against targets.

Issues to be considered in designing an incentive scheme with revenue impact include:

- types of performance indicators to be used

¹⁸ Minister for Energy and Utilities. *Design, reliability and performance licence conditions imposed on distribution network service providers by the Minister for Energy and Utilities*, 1 August 2005

- method of determining target performance levels against which, the annual performance of the DNSP is measured
- definitions and criteria for establishing events to be excluded when calculating the performance outcomes for the scheme
- method of determining weightings and incentive rates to be applied to each indicator
- the degree of financial exposure, and the nature of the risk profile (symmetric or asymmetric)
- form of revenue impact (s-factor, GSL scheme or other).

5.5.2 Incentive scheme linked to regulated revenues, but with no financial impact (paper trial)

This approach involves the development of a scheme with potential financial impact, however, regulated revenues are not adjusted according to performance outcomes.

A paper trial allows the business and regulator to gauge the potential financial impact of an STPIS based on current DNSPs performance. It provides an opportunity for the business to assess the potential future risks and rewards associated with meeting targets set under the STPIS, without financial exposure.

The implementation of a paper trial is dependent upon the development of an appropriately designed STPIS. If this option is to be pursued, the factors discussed above relating to incentive scheme design must be considered to develop an appropriate scheme before a paper trial can commence.

5.5.3 Public comparative performance reporting

This approach relies on the incentive properties of performance data publication to encourage DNSPs to maintain and improve service performance.

DNSPs in the ACT and NSW are currently required to report reliability, quality of supply and customer service outcomes data to the relevant authorities.

5.5.4 Information collection only, with a view to applying a scheme in the future

The transitional Rules will require the AER to monitor and collect information on matters relevant to be included in a STPIS for the purpose of developing and applying a scheme for the regulatory control period commencing 1 July 2014.

Adopting this approach would require that appropriate information reporting requirements be determined, to ensure that the data collected during the 2009–2014 period is robust, relevant and useful for future application.

5.6 Arrangements for EnergyAustralia

The transitional Rules will deem certain parts of EnergyAustralia's transmission network to be part of EnergyAustralia's distribution network. Services that would otherwise be prescribed transmission services under Chapter 6A will be deemed to be

standard control services under the transitional Rules. These services will be defined in the transitional Rules as ‘EnergyAustralia prescribed (transmission) standard control services’.

Standard control services other than EnergyAustralia prescribed (transmission) standard control services are referred to in this chapter as ‘other standard control services’. These services are generally those that are referred to as ‘prescribed’ under the current NER.

The transitional Rules will give the AER discretion to adopt relevant provisions of a STPIS developed under Chapter 6A to EnergyAustralia’s prescribed (transmission) standard control services, so far as the provisions are applicable to the service.

The STPIS under Chapter 6A is currently being reviewed by the AER. If the AER decides to adopt relevant provisions of the STPIS under Chapter 6A in developing a scheme to apply to EnergyAustralia’s prescribed (transmission) standard control services, the outcome of that review may affect the nature of the STPIS applying to EnergyAustralia’s prescribed (transmission) standard control services.

The effect of deeming EnergyAustralia’s transmission assets to be distribution assets is generally that for the purposes of the NER, EnergyAustralia will own no transmission assets.¹⁹ This means that there will be no transmission assets to which to apply a STPIS developed under Chapter 6A. However, the AER may decide under the transitional Rules to adopt relevant provisions of the Chapter 6A STPIS to assets that would otherwise be classified as transmission assets. Therefore, the extent to which the STPIS under Chapter 6A is relevant to EnergyAustralia will depend on the AER’s decision under the transitional Rules.

The AER considers there are two broad approaches to a STPIS for EnergyAustralia during the 2009–2014 regulatory control period:

1. Apply the Chapter 6A STPIS, or elements of it, to EnergyAustralia’s prescribed (transmission) standard control services, and adopt an alternative STPIS for its other standard control services.
2. Discontinue application of the Chapter 6A STPIS to EnergyAustralia’s transmission services, and adopt an alternative STPIS, under the transitional Rules, which applies to both its transmission and other standard control services.

The form of the alternative STPIS to apply under each of these options is to be determined through the same process as the STPIS to apply to the other ACT and NSW DNSPs.

5.7 Preliminary position

The AER is mindful of the potential challenges in designing and implementing an effective scheme linked to regulated revenues. It considers a robust and reasoned

¹⁹ However, for the purposes of pricing, those assets will be treated as transmission and relevant provisions of Chapter 6A will apply.

analysis of the complex issues involved, informed by adequate consultation, is required to ensure any proposed scheme is appropriately parameterised, calibrated and applied in a way that achieves the desired outcomes, while avoiding possible perverse incentives.

The AER does not propose to introduce a STPIS with a financial impact at the 2009 distribution determinations for the ACT and NSW. Rather, it considers that limiting the scope of a STPIS to information collection and monitoring, consistent with its obligations under the transitional Rules, is the most pragmatic approach for the 2009–2014 distribution determinations for the ACT and NSW DNSPs. The AER considers that conducting a paper trial, based on the scheme to be developed under the general Chapter 6, is an appropriate way to prepare for the application of a scheme with revenue impact for the 2014–2019 regulatory control period. The AER proposes to commence this paper trial once information collection requirements are settled and the STPIS under the general Chapter 6 is finalised.

5.7.1 Timeframe and interaction with the general Chapter 6 process

The transitional Rules will provide for limited consultation and consideration of issues relating to the STPIS.

The development of an effective STPIS which achieves the objectives of the NER requires careful consideration of some complex issues. Specifically, a STPIS must be appropriately characterised and parameterised to ensure that the desired incentives are created, and perverse incentives are avoided. The AER considers it would be difficult to give these design issues adequate consideration in the available timeframe.

The timeframe envisaged for the development of the national STPIS under general Chapter 6 provides greater time for consultation. However, the transitional Rules will require that any scheme that is to apply to the ACT and NSW DNSPs during the next regulatory control period must be published by 1 March 2008 or the date that is one month after the commencement of amendments to the NER (whichever is later). This publication date is not achievable under the general Chapter 6 consultation process timeframes.

5.7.2 Recent changes to NSW licence conditions

The requirement in the transitional Rules to take into account any regulatory obligation or requirement means that the new statutory reliability requirements in NSW must be considered in developing an STPIS. The AER notes that the additional licence conditions imposed in August 2005 require a higher level of system security and reliability from the NSW DNSPs than has previously been expected.

The AER considers that these additional licence conditions will provide incentives for the NSW DNSPs to improve and maintain service performance during the next regulatory control period. Given the immediate need for DNSPs to improve their network's performance and ensure compliance with these additional conditions, the AER considers that a further financial incentive is not warranted at this time. The AER will consider these licence conditions in developing a framework for the collection of information relevant to a STPIS in the future.

5.7.3 Arrangements for EnergyAustralia

The AER considers that, where possible, any scheme applying to EnergyAustralia should be broadly consistent with the arrangements applying to other NSW DNSPs. For the purposes of applying a STPIS, the AER considers it is appropriate to treat EnergyAustralia's prescribed (transmission) standard control services in the same manner as its distribution services. Accordingly, the AER proposes to adopt the approach outlined at section 5.8 of this paper in respect to both EnergyAustralia's transmission and other (distribution) prescribed standard control services. In forming this preliminary position the AER has considered:

- The factors discussed at sections 5.7.1 and 5.7.2 of this paper.
- EnergyAustralia's view that transmission assets owned by a DNSP should be subject to the same revenue regulation arrangements as the distribution network.
- The transitional Rules, which will deem certain EnergyAustralia transmission assets to be distribution assets during the next regulatory control period.

5.8 Proposed approach

The AER considers that the design complexities of a STPIS to apply in the future should be settled before useful information can be collected. The AER proposes to engage stakeholders as a part of the consultation process for the national STPIS required under the general Chapter 6. Once consultation has been completed and the national scheme has been finalised, the AER will begin collecting relevant service performance data, and commence a paper trial based on that scheme. The AER considers this approach is appropriate because it will:

- allow more extensive consultation on the design of the scheme for future application, than would be possible under the transitional Rules
- remove the need for two separate consultation processes on the same matter (under transitional Chapter 6 and general Chapter 6)
- ensure that information collection requirements developed for ACT and NSW DNSPs are relevant to the national scheme to be developed under the general Chapter 6
- allow for a scheme applied to the ACT and NSW businesses in 2014 to be consistent with the national scheme, and
- allow the ACT and NSW DNSPs and the AER to effectively prepare for the introduction of a scheme with financial impact at the 2014 distribution determination.

5.9 Request for submissions

The AER seeks submissions regarding its proposed approach to a STPIS for the ACT and NSW distribution determinations, including the likely magnitude of the administrative costs of modifying current practices.

6 Guideline on control mechanism for direct control services

6.1 Requirements of the NER

The transitional Chapter 6 will provide that the AER may publish a guideline as to the control mechanism for direct control services. Such a guideline is not binding on the AER or DNSPs, however, if the AER's distribution determination is not in accordance with the guideline, the AER will be required to state its reasons for departing from the guideline.

Direct control services will be divided into two categories under the amended NER: standard control services and alternative control services.

6.1.1 Standard control services

6.1.1.1 Transmission services provided by EnergyAustralia

Transitional Chapter 6 will deem certain parts of EnergyAustralia's transmission network to be part of EnergyAustralia's distribution network. Services that would otherwise be prescribed transmission services under Chapter 6A will be deemed to be standard control services under transitional Chapter 6. These services will be defined in the NER as 'EnergyAustralia prescribed (transmission) standard control services'.

Standard control services other than EnergyAustralia prescribed (transmission) standard control services are referred to in this chapter as 'other standard control services'.

The transitional Chapter 6 will provide that the control mechanism for EnergyAustralia prescribed (transmission) standard control services must be substantially the same as that determined by the ACCC for the corresponding prescribed transmission service provided in the regulatory control period 2004–2009.

6.1.1.2 Other standard control services in the ACT and NSW

Other standard control services in the ACT and NSW are generally those that the ICRC and IPART have determined to be 'prescribed' under the current NER.

Transitional Chapter 6 will provide that the control mechanism for standard control services in the ACT and NSW must be substantially the same as that determined by the ICRC and IPART respectively for the 2004–2009 regulatory control period. The control mechanism applied in NSW may, with the agreement of the DNSP, apply differently for different categories of services.

6.1.2 Side constraints

Transitional Chapter 6 will impose side constraints on tariffs for standard control services. These constraints will limit any change in the expected weighted average revenue of certain tariff classes between regulatory years within a regulatory control period.

The transitional Rules will state that the side constraint is the greater of:

- The CPI-X limitation on any increase in the distribution network service provider's expected weighted average revenue between the two regulatory years plus 2%, or
- CPI plus 2%.

6.1.3 Recovery of charges for transmission use of system services

The transitional Rules will require that pricing proposals provide for tariffs designed to pass on to customers the charges to be incurred for transmission use of system (TUOS) services. The amount to be passed on for a particular year must not exceed the estimated amount of TUOS adjusted for over or under recovery in the previous regulatory year.

The transitional Rules will provide that in assessing compliance with the side constraint, the AER must disregard the recovery of revenue to accommodate pass through of charges for transmission use of system services to customers.

6.1.4 Alternative control services

The likely approach to the control mechanism for alternative control services must be published by the AER by 1 March 2008.

6.2 Scope of the guideline

The requirement to publish a statement as to the likely approach to the control mechanism for alternative control services will be subject to separate consultation. Accordingly, the AER guideline on direct control services will apply to standard control services only.

6.3 Preliminary position

The AER is required to apply a control mechanism to standard control services that is substantially the same as that determined by the relevant regulator for the 2004–2009 regulatory control period.

With the exception of the matters listed below, the AER is not aware of reasons for departing from the approaches adopted by the ICRC, ACCC and IPART in the current regulatory period. Therefore, the AER proposes to apply the formulas that have been applied by the ICRC, ACCC and IPART in generally the same manner in which they were implemented by those regulators during the regulatory control period 2004-2009 to determine the relevant constraint on revenues or prices.

The AER's understanding of the approaches adopted by the ICRC, IPART and ACCC is set out in appendix C. The AER proposes to base its determinations on the descriptions in appendix C subject to the matters discussed below.

6.3.1 Side constraints in the ACT and NSW

The Ministerial Council on Energy Standing Committee of Officials (SCO) has considered the need for side constraints and has included an explicit side constraint in the transitional Rules. The side constraint in the transitional Rules will limit price shocks within a particular tariff class. The AER will apply side constraints in assessing annual pricing proposals in accordance with the transitional Rules.

The AER notes that IPART determined price limits in its determination for NSW DNSPs. In addition to specifying percentage price limits, IPART determined absolute price limits in dollar terms to particular tariff classes. It appears that the purpose of these limits was to limit price shocks within particular tariff classes.

The AER considers that the side constraints required under the transitional Rules will limit tariff class prices in a similar way to the percentage price limits applied by IPART. Like the price limits applied by IPART, the side constraints will provide reasonable price stability and avoid price shocks for customers within certain tariff classes.

Given that SCO has determined an explicit side constraint in the transitional Rules that is designed to limit price shocks within a particular tariff class, the AER does not consider it is necessary to apply additional side constraints. Therefore, the side constraint prescribed in the transitional Rules will replace the application of the price limits imposed by IPART in NSW (both those expressed in percentage terms and in dollar terms). It will impose an additional constraint that has not been applied in the current regulatory control period in the ACT.

These side constraints will limit the change in the expected average revenue for a tariff class, weighted by tariff component, from one regulatory year to the next. The AER will specify the formula for determining the maximum change in expected weighted average revenue, but allow the AER discretion to determine the detail of the side constraint mechanism for tariff classes.

The AER proposes to apply the following side constraint to the distribution component of individual network tariffs in the next regulatory control period:

$$\frac{\sum_{k=1}^m d_k^{t+1} \times q_k^{t-1}}{\sum_{k=1}^m d_k^t \times q_k^{t-1}} \leq 1 + \Delta CPI + L_{t+1} \quad k = 1, \dots, m.$$

Where: The distribution component of the network tariff (distribution tariff) has up to m components:

d_k^t is the proposed price for aggregate component k of the distribution tariff for year t

d_k^{t-1} is price charged by the DNSP for aggregate component k of the network tariff in year $t-1$ (being the year immediately preceding year t)

q_k^{t-2} is the audited quantity of component k of the distribution tariff that was charged by the DNSP in year $t-2$ (being the year immediately preceding year $t-1$)

L_t is the permissible real percentage change in an individual distribution tariff from year $t-1$ to year t of the regulatory control period determined in accordance with the transitional Rules.

ΔCPI means the number derived from the application of the following formula:

$$\Delta CPI = \left[\frac{CPI_{March(t-2)} + CPI_{June(t-2)} + CPI_{September(t-1)} + CPI_{December(t-1)}}{CPI_{March(t-3)} + CPI_{June(t-3)} + CPI_{September(t-2)} + CPI_{December(t-2)}} - 1 \right]$$

Where:

CPI means the all groups index number for the weighted average of eight capital cities as published by the Australia Bureau of Statistics (ABS), or if the ABS does not or ceases to publish the index, then CPI will mean an index which IPART considers is the best estimate of the index

t refers to a nominal year

$CPI_{month, year}$ means the CPI for the quarter and the year indicated.

6.3.1.1 Recovery of TUOS

As required under the transitional Rules, DNSPs will be required to include tariffs in their pricing proposals based on forecast TUOS charges, adjusted for over or under recovery of TUOS in the previous regulatory year. This will have the following impacts on existing arrangements:

- ACT – there is currently no requirement to adjust TUOS tariffs for previous over or under recoveries, and accordingly this will require a change to existing arrangements for ActewAGL.
- NSW - DNSPs currently maintain an overs and unders account to record differences between forecast and actual TUOS payments, and therefore this requirement in the transitional Rules will not require a change to this aspect of TUOS recovery arrangements in NSW.

The transitional Rules will provide that in assessing compliance with the side constraint, the AER must disregard the recovery of revenue to accommodate pass through of charges for transmission use of system (TUOS) services to customers. This will have the following impacts on existing arrangements:

- ACT - there is currently no side constraint applied in the ACT and accordingly this will not change this aspect of TUOS recovery arrangements in the ACT.
- NSW - IPART's determination imposes price limits, which apply to both transmission and distribution components of tariffs. This means that revenues as a result of passing through charges for TUOS to customers are taken into account in assessing compliance with price limits. The transitional Rules will therefore require

a change to the current arrangements for the recovery of TUOS in NSW to ensure that TUOS is disregarded in assessing compliance with the side constraint.

6.3.2 Control mechanism in the ACT for 2009-2014

The AER proposes to apply the formula applied by the ICRC in the same manner in which it was implemented for prescribed services in the regulatory control period 2004-2009. The AER may allow adjustments to this formula to recognise any demand management incentives and/or service target performance incentives. The AER will make decisions regarding the application of incentives for demand management and service standards as part of the distribution determination. Incentive schemes for demand management and service standards may only be applied in the determination if schemes are published before 1 March 2008 or the date that is one month after the commencement of the amendments to the NER (whichever is the later).

In addition to applying the revenue cap formula, the AER also intends to apply the side constraint formula set out at section 6.3.1 of this chapter.

6.3.3 Control mechanisms in NSW for 2009-2014

6.3.3.1 EnergyAustralia prescribed (transmission) standard control services

The AER proposes to apply the same revenue cap formula to EnergyAustralia prescribed (transmission) standard control services as that applied by the ACCC in the 2004-2009 regulatory control period to EnergyAustralia's transmission services.

The AER may allow adjustments to the revenue cap for EnergyAustralia prescribed (transmission) standard control services for revenue increments or decrements as a result of a service target performance incentive scheme. The AER will make a decision as to whether a service target performance incentive scheme will apply to EnergyAustralia prescribed (transmission) standard control services as part of the distribution determination.

The transitional Rules will not allow adjustments to the revenue cap for contingent projects. However, adjustments for pass through events are allowed. A list of pass through events will be defined in the transitional Rules. In addition to this list, the transitional Rules will provide that the AER may nominate an event as a pass through event in the determination. The AER will provide for adjustments to the revenue cap for any pass through events defined in the transitional Rules or in its distribution determination.

The transitional Rules will provide that the pricing arrangements under Chapter 6A, rather than the transitional Rules, will apply to EnergyAustralia prescribed (transmission) standard control services. Therefore, the side constraints required under the transitional Rules will not be applied to the pricing arrangements for these services.

6.3.3.2 Other standard control services

The AER proposes to apply the same standard weighted average price cap control formula to other standard control services as that applied by IPART to prescribed services in the 2004-2009 regulatory control period.

The AER intends to apply the weighted average price cap control formula, as outlined in appendix C, to the distribution component of network tariffs. For regulatory consistency across jurisdictions, the AER will, however, make a minor adjustment to the weighted average price cap formula, redefining year references within the formula. In the next regulatory control period year known by IPART as $t+1$ will now be year t , similarly, year $t-1$ will now be year $t-2$, and so on.

The AER may allow adjustments to this formula to recognise any demand management incentives and/or service target performance incentives. The AER will make decisions regarding the application of incentives for demand management and service standards as part of the distribution determination. Incentive schemes for demand management and service standards may only be applied in the determination if schemes are published before 1 March 2008 or the date that is one month after the commencement of the amendments to the NER (whichever is the later).

Consistent with IPART's approach in the current regulatory period, the AER proposes to determine a schedule of fees and/or charges for specific miscellaneous services, monopoly services and emergency recoverable works. This schedule will be fixed for the regulatory control period. The AER proposes to determine this schedule by escalating the current fees and/or charges by an escalation factor to be determined as part of the distribution determination.

The AER will apply the side constraints that are required under the transitional Rules and discussed at section 6.3.1 of this paper. The AER does not propose to continue the price limits determined by IPART, or to apply additional side constraints to the side constraint specified in the transitional Rules.

6.4 Request for submissions

The AER seeks submissions on its proposed approaches to implementing the control mechanisms for standard control services in the ACT and NSW, including the likely magnitude of the administrative costs of modifying current practices.

Appendix A – issues paper on transition from pre-tax to post-tax

Appendix A

Issues Paper

Electricity Distribution Network Service Providers

Transition of energy businesses from pre-tax to post-tax regulation

June 2007



© Commonwealth of Australia 2007

This work is copyright. Apart from any use permitted by the *Copyright Act 1968*, no part may be reproduced without permission of the Australian Competition and Consumer Commission. Requests and inquiries concerning reproduction and rights should be addressed to the Director Publishing, Australian Competition and Consumer Commission, PO Box 1199, Dickson ACT 2602.

Request for submissions

Interested parties are invited to make written submissions to the AER on any issues raised in this paper. Any submissions must be received by close of business Friday 10 August 2007 and should be addressed to:

Australian Energy Regulator
GPO Box 520
Melbourne VIC 3001
Fax: (03) 9290 1457
Email: AERInquiry@aer.gov.au

Contents

Glossary	48
1 Overview	51
1.1 Purpose of paper.....	51
1.2 Key findings of paper.....	51
2 Background	53
2.1 Conceptual framework.....	54
2.1.1 The building block methodology.....	54
3 Differences between pre-tax and post-tax approach	55
3.1 The post-tax approach.....	55
3.2 The pre-tax approach.....	56
3.2.1 Calculation of tax liabilities under pre-tax approach.....	57
3.3 AER preferred approach.....	59
4 Setting the tax base on transfer to post-tax approach	59
4.1 Required data – the tax base.....	59
4.2 Historic assessment of tax depreciation.....	59
4.3 Impact of government ownership.....	61
4.3.1 The Ernst & Young report.....	61
4.4 Proposed approach to setting the tax base.....	62
4.4.1 NTER – proposed approach for government owned businesses...	63
5 Impact on revenue of transfer to post-tax regulation	64
5.1 Cash flow simulations.....	64
5.1.1 Simulation 1.....	64
5.1.2 Simulation 2.....	66
5.1.3 Conclusions drawn from simulations.....	68
6 Conclusion	69
6.1 Pre-tax versus post-tax.....	69
6.2 Setting the tax base.....	69
6.3 Impact on revenue - transfer to post-tax approach.....	70
7 Summary of issues for comment	70

Glossary

ACCC	Australian Competition and Consumer Commission
AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
AR	allowed revenue
ATO	Australian tax office
Capex	capital expenditure
CAPM	capital asset pricing model
CCH MTGuide	Australian master tax guide
CPI	consumer price index
D	debt
DNSP	distribution network service provider
DRP	draft statement of principles for the regulation of transmission revenues, 27 May 1999
DV	diminishing value method of depreciation
E	equity
ESC	essential services commission (Victoria)
Gamma / γ	represents the utilisation of imputation credits
ICB	initial capital base
ICRC	independent competition and regulatory commission (ACT)
IPART	independent pricing and regulatory tribunal (NSW)
L	economic life

MAR	maximum allowed revenue
MCE	ministerial council on energy
NEM	national electricity market
NEMMCO	national electricity market management company
NER	national electricity rules
NPV	net present value
NTER	national tax equivalence regime
Opex	operating and maintenance expenditure
PC	prime cost method of depreciation
Post-tax approach	approach to calculating regulatory revenue whereby the allowance for taxation is treated as a separate cash flow item
Pre-tax approach	approach to calculating regulatory revenue whereby the allowance for taxation is embedded in the WACC formula
PTRM	post-tax revenue model
RAB	regulated asset base
Rd	return on debt
Re	return on equity
Rpre	pre-tax return on equity ($R_{pre} = R_e + T_w$)
SCO	standing committee of officials
T_e	effective tax rate
SRP	statement of principles for the regulation of electricity
TER	tax equivalence regime, transmission revenues, December 2004
TL	tax life
T_c	corporate tax rate

TNSP	transmission network service provider
Tw	tax wedge
WACC	weighted average cost of capital

1 Overview

The Australian Energy Regulator (AER) will assume responsibility for the economic regulation of gas and electricity distribution from 2007. The Ministerial Council on Energy (MCE) has signalled its intention for electricity rules to mandate a post-tax approach to regulation in its exposure draft of the NER.²⁰ This paper explores the mechanics of the transition from a pre-tax approach to a post-tax approach for calculating the allowance for corporate tax within regulatory revenues and the likely impacts on regulatory revenues. The AER is aware that some distributors are concerned that a change to a post-tax approach may erode business value. This concern is explored in the analysis.

1.1 Purpose of paper

This paper serves three purposes:

- It outlines the key methodological differences between the post-tax approach applied by the AER with the pre-tax methodology applied by other regulators (including IPART, ICRC and ESCOSA). The conditions under which the two approaches converge are also explored.
- The paper describes the mechanics of moving a regulated business from pre-tax to post-tax including setting the opening asset values for tax purposes. Drawing from a recent report produced by Ernst & Young, a brief summary of some of the changes to taxation laws and depreciation rates that may influence the accounts of regulated businesses is presented.
- The likely impact on revenue of changing to a post-tax approach is estimated (through analysis of existing regulatory decisions, scenario analysis and cash flow modelling).

1.2 Key findings of paper

Key findings are as follows:

- A post-tax approach is superior in that it facilitates an accurate allowance for tax in setting regulatory revenues. Further, the allowance for tax under a post-tax approach is more closely aligned to the timing of actual tax liabilities than under a pre-tax approach.
- Careful attention is required to ensure appropriate initial asset values for tax purposes are set (the tax base). The tax base should, where possible take into account the actual tax position of assets that constitute the RAB.
 - The tax base can be established with the following information:

²⁰ Ministerial Council on Energy, *National Electricity (economic regulation of distribution services) Amendment Rule 2007, exposure draft*, April 2007, clause 6.5.2.

- The date the business was first subject to tax (or the national tax equivalence regime (NTER))
- The tax value of assets at that date, in sufficient detail to distinguish RAB assets from any non-RAB assets
- The vintage profile of the RAB assets when first subject to tax including any capex that took place prior to the commencement of regulation
 - The tax base established when first subject to tax can then be rolled forward to the commencement of the post-tax approach taking account of relevant tax depreciation provisions, actual capex and disposals.
 - For government owned businesses, a similar approach should be adopted, utilising the transition to the NTER to establish the initial tax base (to be rolled forward to the commencement of post-tax regulation).

Preliminary analysis of the transition from pre-tax to post tax regulation indicates:

- Distribution businesses transferring from a pre-tax approach as applied by jurisdictional regulators to a post-tax approach applied by the AER will be no worse off than if a post-tax approach had been applied at the commencement of regulation. In other words, value will not be eroded from the businesses as a result of the post-tax framework.
- It is likely that allowance for tax under the pre-tax framework has exceeded actual and benchmark tax liabilities. The magnitude of this advantage is likely to be approximately 1.2 to 1.5 percent of revenues received over the period of pre-tax regulation (10 years in most cases).²¹ This is due to two effects:
 1. The assumption by the state regulators that the effective tax rate is equivalent to the statutory tax rate (that is, 30 percent). The AER has estimated that the effective tax rate has been around 21-22 percent for most businesses. A higher effective tax rate may be observed under circumstances where there is no ongoing capital expenditure. However, the rate would still be below 30 percent, the assumption adopted by jurisdictional regulators.
 2. In theory, the additional allowance may have been notionally intended to cover higher tax liabilities in the future when tax depreciation allowances are exhausted. However, under a post-tax framework businesses are compensated on an ‘as you go’ basis such that if tax liabilities increase in the future the business will be compensated for those increased liabilities. The result is that a business moving from a pre-tax framework to a post-tax regime may receive an element of double allowance for future tax. However, as the businesses were well established at the commencement of regulation, most of the advantage can be attributed to the assumed effective tax rate.

²¹ This estimate is based on simulations presented in Table 7.

- The AER does not intend to make adjustment upon transition to a post-tax approach for any additional allowance that may have been received as a result of previous regulatory decisions.
- Application of a post-tax approach by the AER may involve slightly lower revenues than would have emerged from a continuation of regulation under previous pre-tax regimes. Such a change is likely to be less than 1.5 percent of revenue. However, allowance for tax will be sufficient to cover future tax liabilities.

2 Background

The Australian Energy Regulator (AER) will assume responsibility for the economic regulation of gas and electricity distribution from 2007. An issue in this transition is the existing allowance for corporate tax within regulatory revenues. The MCE has signalled its intention for electricity rules to mandate a post-tax approach to regulation. The AER is considering the implications of moving businesses currently regulated under a pre-tax regime to a post-tax regime.²² Table 1 summarises the approaches adopted for regulatory decisions in electricity and gas distribution.

Table 1 Summary of pre and post-tax treatment by jurisdiction

Industry	Pre-tax		Post-tax	
Gas	AGLGN	NSW	Envestra	QLD
	Country Energy	NSW	Allgas	QLD
	ActewAGL	ACT	Multinet	VIC
	Envestra	SA	Envestra	VIC
			SP AusNet	VIC
Electricity	EnergyAustralia	NSW	ENERGEX	QLD
	Integral Energy	NSW	Ergon	QLD
	Country Energy	NSW	United Energy	VIC
	ActewAGL	ACT	AGLE	VIC

²² MCE, loc. cit.

Aurora	TAS	Citipower/Powercor	VIC
ETSA Utilities	SA	SP AusNet	VIC

2.1 Conceptual framework

Corporate taxation and associated tax liabilities are an integral part of the business environment. To the extent that tax represents a cost to a regulated service provider, the regulator needs to ensure that regulated revenues are adequate to cover tax liabilities in addition to all other costs (for example, operating expenses). These costs include providing a commercial return expectation commensurate with the financial risks involved in providing the regulated services. This commercial return is generally referred to as the firm's cost of capital.

In the past, distribution businesses have been regulated by state based regulators which have developed their own frameworks for determining tariffs/revenues designed to achieve the commercial return objective. It is helpful to understand the basis of the different frameworks.

2.1.1 The building block methodology

All jurisdictions have adopted a building block approach in which all costs, including capital costs, are forecast then added to establish an overall revenue requirement which must be recovered through charges for the regulated services over the designated regulatory period. Many of these costs are straightforward and have been handled in much the same way by all jurisdictions.²³

All jurisdictions have also adopted the CAPM as the basis for determining the business's cost of capital. The CAPM provides an estimate of investor's required return on equity (Re) invested in such a company. The approach to calculating the CAPM is similar in all jurisdictions with minor differences in financial parameters due to different periods of assessments and the updating of empirical findings. Financial theory identifies the CAPM as a 'post-tax' returns expectation, implied after taking account of the fact that the firm is required to meet all of its legal corporate tax obligations.

Multiplying this required return to equity (Re) by the amount of equity (E) invested during a period identifies the magnitude of the associated building block (Re x E) to be added to the revenue requirement. However, because Re only covers the required return after tax, an additional building block to cover the firm's tax liabilities is required so that the full post-tax return is available to equity investors.

²³ Detailed discussion of these is not the subject of this paper. This paper will focus on the building blocks associated with the cost of capital of the firm and allowance for tax related costs.

The way the tax allowance is calculated is a point of difference between regulators. All AER decisions and some jurisdictional decisions have adopted a post-tax approach while others have adopted a pre-tax approach.

All regulatory frameworks within the Australian energy sector apply a benchmark gearing assumption for firms establishing a level of equity (E) and a level of debt (D) for the firm with a total value invested in regulatory assets ($RAB = E + D$). Debt is a second source of capital which must be serviced in a way similar to equity. However, the costs represented by commercially determined interest rates (R_d) are straight forward and calculated in a similar way by all jurisdictions. This element of the building blocks ($R_d \times D$) can be treated in the same way as other costs paid to third parties (that is, a pass-through).²⁴ The cost of debt and the cost of equity are commonly combined to form a weighted average cost of capital (WACC) and applied to the total capital used by the business to calculate a single return building block. However, the mathematical outcome is the same as calculating the building blocks separately. The discussion here uses the later approach because it helps delineate the issues more clearly.²⁵

3 Differences between pre-tax and post-tax approach

3.1 The post-tax approach

In the post-tax approach a cash flow analysis is performed using all the forecast costs over the regulatory period to assess what taxes are likely to be payable by a private company under existing tax legislation when the firm's financial structure is consistent with all the assumed regulatory benchmarks.²⁶ In the cash flow analysis it is assumed that the revenues include an additional amount (tax building block) equal to the tax calculated so that the remaining revenues are sufficient to cover all other costs and the required equity return to investors.

Consequently, the post-tax approach to tax allowance is an 'as you go' approach which enables adjustment (if necessary) for changing tax legislation and provides a realistic assessment of costs faced by an actual firm year by year. In other words, the allowance for tax under a post-tax approach is closely aligned to the timing of actual tax liabilities.

²⁴ Notwithstanding these costs are based on efficient benchmarks.

²⁵ This is easily seen by noting that the $WACC = E/RAB \cdot Re + D/RAB \cdot Rd$ and the total return to Assets is given by $WACC \cdot RAB = E \cdot Re + D \cdot Rd$ which is the sum of the return on equity building block and the cost of debt building block assessed separately. This is the vanilla WACC version but the same synthesis applies for the pre-tax version of rates of return.

²⁶ In practice many regulated distribution businesses are government owned and are subjected to only notional tax regimes. However, the private ownership assumption is applied to provide an outcome consistent with competition neutrality objectives.

3.2 The pre-tax approach

Under the pre-tax approach a constant allowance or tax wedge (T_w) is added to R_e to reflect the required pre-tax return on equity ($R_{pre} = R_e + T_w$) before calculating the (pre-tax) return to equity building block ($R_{pre} \cdot E$). In this way the allowance for tax is embedded in the return on equity requirement (and subsequently the WACC) and there is no separately identifiable tax building block. However, it is equivalent to a tax building block equal to $T_w \times E$ in each period. No other allowance for tax is calculated or analysed in the cash flows.

The idea is that this constant allowance or tax wedge will over time compensate for all current and future tax liabilities faced by the regulated firm operating under the benchmark assumptions.

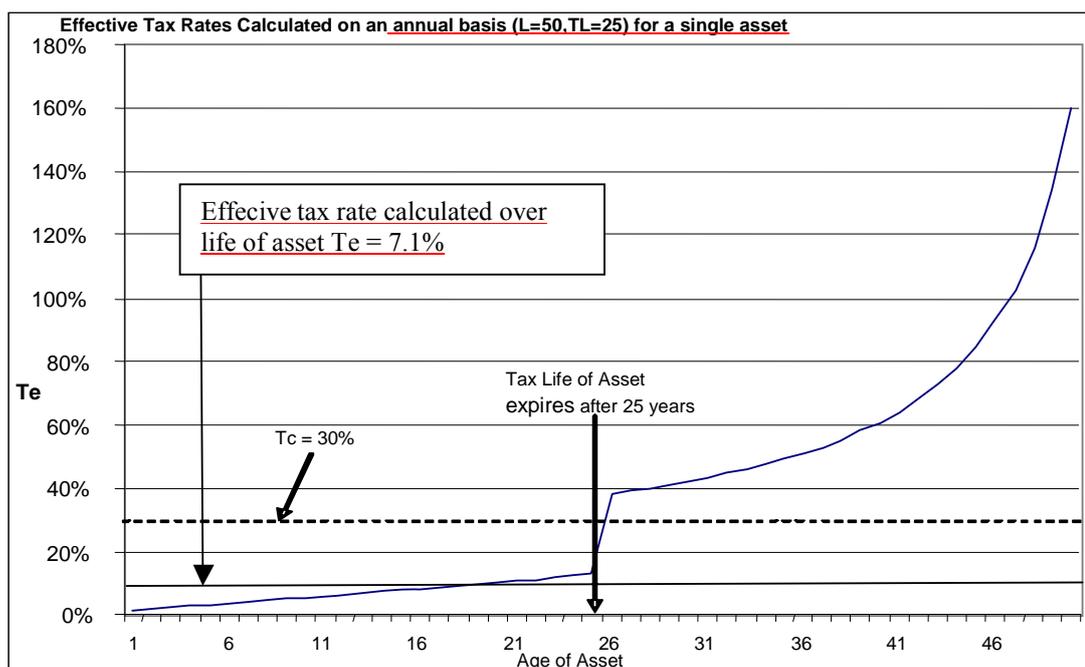
The major challenge in this approach is the calculation of the tax wedge that meets this objective. The issue is complicated by the operation of tax law whereby the tax payable by a firm is based on income which differs from regulatory income. This is primarily (but not solely) due to tax depreciation allowances which differ from regulatory depreciation allowed for in the revenue stream.²⁷ The impact of these tax rules is that revenues available from new investments attract little or no tax because the allowance for tax depreciation exceeds regulatory depreciation and taxable income is reduced substantially. Tax is not avoided but merely deferred to a later time when the relative magnitude of tax depreciation and regulatory depreciation reverses.²⁸ This deferral of tax may be for a period of up to 20 years. Being able to defer a cost in this way may be of considerable value to the firm and its investors. Such a value is conveniently measured by the effective tax rate (T_e) which may be well below the corporate tax rate (T_c), currently 30 percent. The values for R_e , R_{pre} and T_e can be assessed over any period in the investment cycle.

Figure 1 below illustrates the change in the year specific effective tax rate over time for a single asset regulated under the building block approach over its 50 year life assuming there is no other capital expenditures ongoing. For illustrative purposes, a tax life (TL) of 25 years has been assumed.

Figure 1. Graphical representation of tax liabilities forecast to arise in respect of a one-off investment with no subsequent investments.

²⁷ Other key factors are inflation and the level of gearing. See section 3.2.1 for an explanation of how inflation affects the effective tax rate.

²⁸ Gearing of investments serves to magnify this effect.



3.2.1 Calculation of tax liabilities under pre-tax approach

The use of a pre-tax regime does not avoid the problem of assessing likely tax liabilities as the T_e used to establish the R_{pre} needs to assess both current and future tax liabilities so that the correct tax wedge is established for the life of the assets. In all pre-tax regimes the regulator has simply assumed the $T_e = T_c = 30$ percent (36 percent prior to 2000).

This assumption almost guarantees that the pre-tax decision will provide allowance for tax which exceeds realistic forecast of liabilities except in mature businesses with little or no capital expenditure. Table 2 shows lifetime effective tax rates for a long lived asset typical of those comprising the RAB of distribution businesses. Even in the absence of accelerated depreciation for tax purposes (that is, tax life = economic life) the effective tax rate over the life of the asset is well below the corporate tax rate. Accelerated depreciation provisions aside, the main reason the effective tax rate will be lower than the statutory tax rate is due to inflation.²⁹ Gearing has a compounding influence on the inflation effect. Also, in a steady state situation where investment is maintained at a constant rate in real terms the T_e converges to a constant level, again, below the assumed corporate tax rate. This latter scenario is probably a fair representation of existing businesses.

²⁹ In Australia, with the exception of capital gains tax, tax is assessed on nominal income. This is in contrast to the treatment of the RAB in the PTRM, which is adjusted regularly to take account of inflation. Assuming inflation exists, the result is that even when tax life is equal to economic life, tax depreciation exceeds regulatory depreciation in early years and vice versa in later years. The NPV of the difference in cash flows between the two depreciation profiles (tax depreciation and regulatory depreciation) leads to a benefit to the asset owner, as indicated by an effective tax rate that is lower than the statutory tax rate. It should be noted that despite a timing mismatch in depreciation profiles, the allowance for tax is closely aligned to actual tax liabilities under the post-tax approach.

Table 2: Effective Tax Rates over the Economic Life of assets under various scenarios (normal WACC assumptions applied)

Scenario	Econ Life (L)	Tax Life (TL)	Te
Single Asset	50	50	18.9%
Single Asset	50	25	7.1%
Constant Investment	50	50	25.7%
Constant Investment	50	25	21.7%

The WACC parameters assumed by IPART (including setting $T_e = 30$ percent and after taking account of imputation credits with $\gamma = 0.5$) provide a tax wedge $T_w = 2.00$ percent. This leads to a ratio of tax allowance relative to real vanilla return on assets of 12.9 percent.³⁰

By comparison, assuming a $T_e = 21.7$ percent (rather than $T_e = 30$ percent) implies $T_w = 1.38$ percent. This leads to a ratio of tax allowance relative to real vanilla return on assets of 8.9 percent.

Assuming a RAB averaging \$1,000m with equity of \$400m the difference in tax allowance over 10 years amounts to $(10 \times ((2.00 - 1.38) / 100) \times 400) \sim \$25m$ which compares with a cumulative revenue of around \$1,600m over the same period.³¹ These calculations provide a crude estimate of the magnitude of the likely allowance for tax under a pre-tax regime in excess of actual tax liabilities of about 1.6 percent.

Estimates of the relative allowances for tax, in practice, is much more complicated than this. A full assessment will require the tax status of existing assets and new investments over the period the firm is regulated. In principle, this requires a detailed assessment of the asset register in combination with the tax law that applied when each investment was made covering a period of up to 50 years or so.

In practice however, due to the minor contribution of assets commissioned prior to 1992 and because most of the businesses are government owned or have been recently privatised, Ernst & Young concluded that tax rule changes prior to 1992 would have minimal impact on any assessment.³²

³⁰ The real pre-tax WACC determined by IPART was 7.0% with a real vanilla WACC of 6.2% this tax wedge on the real WACC equates to $T_w = 2.05\%$ ($\sim 0.8\% / .4$) since equity share in WACC is 40%.

³¹ Assuming O&M and depreciation maintain a typical relationship with return on assets involved.

³² Ernst & Young, *Application of Tax Depreciation Rules to Regulated Energy Entities – Phase I recommendations*, August 2006

3.3 AER preferred approach

The AER applies a post-tax nominal approach for the regulation of transmission businesses because it considers it the best and most transparent approach consistent with sound regulatory practice. As noted above, the allowance for tax under a post-tax approach is closely aligned to the timing of actual tax liabilities. The arguments used in support of the post-tax nominal approach have been repeatedly documented by the ACCC and, significantly, they apply equally as well to regulated distribution businesses as they do to transmission businesses.³³ In any case, as noted above, the AER anticipates amendments to the National Electricity Rules (NER) will mandate the use of a post-tax approach.³⁴

4 Setting the tax base on transfer to post-tax approach

The application of a post-tax approach requires a value for tax purposes of each asset class that constitutes the RAB at the commencement of post-tax regulation. As discussed in section 3.2 above, under the pre-tax approach applied by jurisdictional regulators, the allowance for tax is embedded within the return on equity calculation. Accordingly, there is no existing tax base used for calculating an appropriate tax allowance. This section outlines factors relevant to establishing the tax base for DNSPs including those that are subject to government ownership.

4.1 Required data – the tax base

The remaining tax depreciation concessions available, or the tax base, is required to calculate forecast tax liabilities over the regulatory period under the post-tax approach. The tax base at the commencement of post-tax regulation will have an explicit impact on the allowance for tax. Should the tax base be set too high, a shortfall in the allowance for tax would occur when compared to actual tax liabilities. Similarly, if the tax base is set too low, the allowance for tax under a post-tax approach would be higher than appropriate. Consequently, setting the tax base is an important step in commencing regulation with the post-tax approach.

In principle, a detailed examination of the companies' asset registers is required to establish the tax status of each asset and remaining tax base. These values will have been influenced by historic and current tax legislation. However, this information is not held in regulatory accounts for businesses regulated under a pre-tax approach.

4.2 Historic assessment of tax depreciation

Most of the DNSPs' assets have economic lives of up to 50 years. Therefore a reasonable assessment of the tax status of each asset depends on the likely behaviour

³³ For Example ACCC, *Draft Statement of Principles for the Regulation of Transmission Revenues*, May 1999, p21.

³⁴ MCE, loc. cit.

of a company acting in its commercial best interests to take full advantage of changes to tax legislation that have occurred over the life of these assets. This is a straight-forward mechanical calculation for a business always subject to taxation using the different rates of depreciation permitted at the time of investment. For electricity assets with a 50 year economic life these rules are summarised in Table 3 below.

There are two tax depreciation methods that have been historically available to tax paying companies. The **Prime Cost (PC) Method** spreads depreciation evenly across the effective life of the asset. The **Diminishing Value (DV) Method** applies a fixed rate of depreciation to the written down value of the assets at the end of each period.³⁵ The DV method provides for greater depreciation at the beginning of the life of the asset and lesser deductions at the end of the life. The ESC assumed that firms universally adopted the diminishing value method. This has the advantage that information required from historic asset registers is far less demanding. In the 2006 Budget the Treasurer announced an increase in the rates of depreciation using the DV method making that approach unequivocally the more favourable option. This provides an added reason for applying the DV approach for all new capital expenditures in any assessment of tax.

Regardless of which depreciation scenario is used, the tax concession available from assets held at the start of regulation (associated with capital expenditures prior to 1999) will be relatively small when compared to tax concessions associated with investments undertaken between 1999 and 2009 for the 2009-2014 regulatory period.

Table 3 Summary of changes in tax depreciation rules (Section 5)

Major electricity assets depreciation rules for assets with economic life of 50 years					
Effective from	Deemed Life (ATO) years	PC Depr'n Rate % pa	DV Depr'n Rate % pa	Equivalent Tax Life (Years)	Source/Comment
1-Jul-74	50	2	3	50.00	Assumed
20-Jul-82	50	20	20	5.00	CCH MTGuide
25-May-88	50	3	4.5	33.33	CCH MTGuide
27-Feb-92	50	7	10	14.29	Ernst & Young (broadbanding) ³⁶

³⁵ Further details are provided in Ernst & Young, *Application of Tax Depreciation to Regulated Energy Entities for the period 1992 to 1 November 2006*, Consultancy Report by Ernst & Young for the AER, November 2006.

³⁶ With the commencement of broadbanding rules on 1 July 1991 firms were permitted to apply the new broadbanded rates of depreciation to assets commissioned prior to that date and previously

21-Sep-99	50	2	3	50.00	Ernst & Young
1-Jan-02	45	2.22	3.33	45.00	Ernst & Young
10-May-06	45	2.22	4.44	33.75	33.75 assumes DV adopted

4.3 Impact of government ownership

4.3.1 The Ernst & Young report

For businesses which have not always been subject to federal taxation the determination of the tax base on entry to the post-tax regime may involve other considerations in addition to depreciation rules. To assist in this task the AER commissioned Ernst and Young to provide a report detailing the legislated tax changes that have taken place relevant to this calculation.³⁷ Because of the minor contribution of assets commissioned prior to 1992 and because most of the businesses are government owned or have been recently privatised, Ernst & Young concluded that tax rule changes prior to 1992 would have minimal impact on any assessment.³⁸

Ernst & Young's report on tax legislation changes will be of most relevance to assets originally commissioned prior to 1999 when most distribution businesses were first subjected to regulation. From that time onwards, details of actual investment in each category will have been recorded as part of the regulatory decision process and this information should become available to the AER as it takes on responsibility for regulation of these businesses. Tracking the tax implication of these investments is essentially the same mechanical task outlined above.

However, changes in depreciation rules are not the only changes in tax legislation impacting on the current status of regulatory assets as firms move to a post-tax regime. There have been other rulings that have materially affected the tax status of the regulated assets, including:

depreciated under the grandfathered rates applying at the time of commissioning. Ernst & Young report Appendix 1.

³⁷ Ernst & Young, *Application of Tax Depreciation to Regulated Energy Entities for the period 1992 to 1 November 2006*, Consultancy Report by Ernst & Young for the AER, November 2006.

³⁸ Ernst & Young subsequently extended the date back to July 1991 so as to include an additional change to depreciation rules concerning broadbanding. See Appendix 1 of the Ernst & Young Report dated January 2007.

- Tax equivalent regimes introduced by State governments in the 1990s required government owned businesses to consider income tax issues for the first time. There were various rules on how the assets were to be valued for tax purposes. However, in most cases this was based on written down book values or market value prior to moving into the tax equivalent regime.³⁹ Generally this valuation would equate to a written down replacement cost consistent with current cost accounting practices.
- Tax consolidation which was permitted for subsidiary members of corporations whereby the tax value of assets could be reassigned to assets within the group to optimise the overall tax position.⁴⁰ This provision would not normally be available to firms operating under the standard benchmark assumption that the regulated firm is a stand-alone operation. Consequently, it would not be appropriate to consider tax consolidation following the establishment of the initial tax base. An added reason for avoiding this situation is that firms operating both regulated and non-regulated businesses could otherwise distort the re-assignment so that tax concessions are diverted away from the regulatory assets.
- Privatisation of an entity (or otherwise becomes subject to the federal tax regime for the first time) when special provisions of tax legislation came into play. The most relevant of these applying from 4 August 1997 was section 8 which permitted the assets to be valued for tax purposes either at the notional written down value or the pre-existing audited book value with similar consequences to entry to the tax equivalence regime.

4.4 Proposed approach to setting the tax base

Government ownership (or historic government ownership for recently privatised firms) could be disregarded through a benchmarking approach drawing on data from other businesses with similar assets and vintage profiles. However, such an approach would inevitably result in a tax base that is not reflective of decisions of policy makers at the state and national level.⁴¹ While the AER intends to apply stand-alone private ownership assumptions in a forward looking sense, on balance, the AER considers that an approach to setting the tax base that takes into account the specific circumstances of each business is preferable to benchmarking with disregard to the DNSPs particular business context. The AER considers an approach that takes into account the specific circumstances of a business is likely to provide an appropriate balance between the interests of the businesses and their customers. Further, taking account of the specific circumstances avoids potential intrusion on previous government decisions surrounding the implementation of national competition policy reforms and the establishment of tax equivalence regimes.

³⁹ Ernst & Young, *Application of Tax Depreciation to Regulated Energy Entities for the period 1992 to 1 November 2006*, Consultancy Report by Ernst & Young for the AER, November 2006, s. 4.2.

⁴⁰ *ibid.*, s. 4.1.

⁴¹ Such policy decisions concern the implementation of national competition policy reforms and the introduction of tax equivalence regimes and the national tax equivalent regime.

In general terms, the AER's proposed approach is as follows:

- Collect the following information:
 - The date the business was first subject to tax (or the national tax equivalence regime (NTER))
 - The tax value of assets at that date, in sufficient detail to distinguish RAB assets from any non-RAB assets
 - The vintage profile of the RAB assets when first subject to tax (including any capex undertaken prior to the commencement of regulation)
- Roll forward the tax value to the commencement of the post-tax approach taking account of relevant tax depreciation provisions and actual capex and disposals.

There may be a degree of judgment required in establishing the initial tax base. For example, assumptions may be required to separate non-RAB assets if they are not separately identified in tax accounts. However, as existing assets become fully depreciated for tax purposes,⁴² the tax base in the regulatory accounts will become increasingly reflective of the stand-alone businesses' tax base. This in turn will facilitate the calculation of a tax allowance that is increasingly reflective of actual tax liabilities for the stand-alone business.

4.4.1 NTER – proposed approach for government owned businesses

Governments established state-based tax equivalence regimes as a result of national competition policy reforms in the mid 1990s with a view to creating a level playing field for government and non-government businesses. Tax values were established with varying rules applied across jurisdictions.⁴³ During the financial year 2001-2002 it is understood that most government owned energy businesses transferred to a newly established NTER.⁴⁴

The AER considers that the tax base upon transition from state-based tax equivalent regimes to the NTER provides an objective measuring point from which to establish an appropriate tax base at the commencement of post-tax regulation. Consistent with the treatment of privately owned businesses, non-RAB assets would need to be excluded from the tax base. Further, the tax base would need to be rolled forward to the point in time where post-tax regulation commences, taking into account relevant tax depreciation provisions and actual capex and disposals. Data concerning capex and disposals will be available in the relevant regulatory accounts under existing jurisdictional regulation, although some values may require updating to reflect actual values rather than forecasts.

⁴² Aside from depreciation, the tax base will reduce in real terms as a result of inflation as time passes.

⁴³ Ernst & Young, *Application of Tax Depreciation to Regulated Energy Entities for the period 1992 to 1 November 2006*, Consultancy Report by Ernst & Young for the AER, November 2006, section 4.2.

⁴⁴ *ibid.*, section 4.2.

The AER invites comment on the proposed method for setting the tax asset base on transition to a post-tax approach. Specifically:

- Q1 For government owned businesses, is there sufficient data available within NTER tax accounts to distinguish regulated and non-regulated business assets?*
- Q2 Are tax values calculated by asset class or will total tax asset values need to be assigned to various asset classes for use in the PTRM?*

5 Impact on revenue of transfer to post-tax regulation

5.1 Cash flow simulations

An approximation of the impact of the transition from pre-tax framework to a post-tax framework is provided by simulating hypothetical scenarios similar to those likely to be encountered in practice. In the simulations which follow it has not been feasible to consider all possible scenarios. In general, conservative hypothetical scenarios have been considered.

5.1.1 Simulation 1

In the first of these scenarios, selected firms formerly regulated by IPART and ICRC under a pre-tax framework have been reassessed applying data available to determine the impact of a post-tax framework. The results are summarised in the Table 5 below.

This analysis uses information available from AER’s determination for EnergyAustralia transmission. It assumes that the vintage profile and tax status of assets of the distribution company would be similar to that of EnergyAustralia transmission as at the beginning of the most recent round of regulatory decisions (that is, July 2004). In turn it was assumed that the vintage profile of assets and the tax status of other distribution companies were also similar to that of EnergyAustralia transmission. Capital expenditures for the five-year regulatory period from 2004-05 to 2008-09 specific to each company were drawn from decision documents of IPART and ICRC.

The assumptions forming the basis of the simulations are shown in Table 4.

Table 4: Assumed asset profile of distribution businesses based on EnergyAustralia RAB 2003-04

Asset Category	Proportion of RAB	Econ Life(L)/ Remaining	Tax Life(TL) ⁴⁵ / Remaining TL yrs

⁴⁵ It was assumed that assets were re-valued for tax purposes in 1998. Hence, tax life figures are generally five years less than economic life figures as at 2003-04.

life(RL) yrs			
Land Easements	20%	na	na
Newer Assets	30%	45	40
30-40 yr RL	15%	35	30
20-30 yr RL	10%	25	20
10-20 yr RL	15%	15	10
< 10 yr RL	3%	5	5
Non-System Assets	7%	8	7
Total Capex	From IPART & ICRC decision documents		
System Capex	90% of Capex	50	45
Non-System Capex	10% of Capex	10	9

Table 5: Simulated comparison of pre-tax and post-tax revenue outcomes for period 2004-05 to 2008-09 and estimated tax allowance over period

Company	Regulator	Difference in Tax Allowance over 5 years	Te for period	RAB 2008-09	Pre-tax Revenue 2008-09
EnergyAustralia	IPART	\$45.2m	23.9%	\$5,710m	\$960m
Integral Energy	IPART	\$28.2m	23.5%	\$3,229m	\$646m
Country Energy	IPART	\$26.3m	23.9%	\$3,196m	\$627m
Australian Inland	IPART	\$0.2m	26.8%	\$71m	\$20m
ACTEW	ICRC	\$4.3m	24.8%	\$544m	\$122m

These outcomes across firms are quite similar probably reflecting the fact that the same starting asset base profile is used for each. The reason that Australian Inland

involves a smaller difference in tax allowance (higher Te) is that its capital expenditure forecasts show relatively small growth compared to the other distribution companies so that available tax depreciation is comparatively less.

In applying a pre-tax or post-tax framework the difference in tax allowance in any year is generally less than 1 percent of forecast building block revenues for that year.

However, it should be remembered that this outcome depends on the assumed tax status of existing assets at the beginning of the most recent regulatory review. A significant proportion of assets were assumed to be subject to non-accelerated rates of tax depreciation. This scenario may change with a closer examination of the asset register. Another plausible scenario is easily generated by assuming a higher rate of tax depreciation available for new capital expenditures and recently acquired system assets (for example by setting the tax life to 14 years, available to many long-lived assets in the recent past).

Table 6: Simulated comparison of pre-tax and post-tax revenue outcomes for period 2004-05 to 2008-09 and estimated tax allowance over period (assuming faster rates of tax depreciation for new assets)

Company	Regulator	Difference in Tax Allowance over 5 years	Te for period	RAB 2008-09	Pre-tax Revenue 2008-09
EnergyAustralia	IPART	\$96.8m	16.8%	\$5,710m	\$960m
Integral Energy	IPART	\$62.2m	15.4%	\$3,229m	\$646m
Country Energy	IPART	\$56.5m	16.7%	\$3,196m	\$627m
Australian Inland	IPART	\$0.3m	26.1%	\$71m	\$20m
ACTEW	ICRC	\$8.6m	19.6%	\$544m	\$122m

5.1.2 Simulation 2

Another scenario designed to pick up other features of the transition has been simulated with confirming results. This scenario assumes constant real investment by the business from 1960 until 1994 at a level to generate the RAB accepted by IPART for EnergyAustralia as at July 1999, with capital expenditures and O&M from 1995-2009 set to match those for EnergyAustralia distribution and approved by IPART. Tax depreciation of the assets driving the tax position is assumed to vary over time in line with tax depreciation provisions identified in Table 3. It therefore simulates a company which has always been a tax paying entity and does not incorporate any resetting of the tax base as allowed by legislation covering, privatisation or entry to a tax equivalence regime. This is the most conservative of these alternatives. Four regulatory outcomes are considered and summarised in Table 7 below:

- the first, based on the likely outcome under a post-tax regime assuming prime-cost (PC) depreciation for the calculation of tax depreciation for all assets;
- the second, based on the likely outcome under a post-tax regime assuming diminishing value (DV) depreciation for the calculation of tax depreciation not subject to any accelerated depreciation provisions;
- the third, based on the likely outcome under a pre-tax regime assuming an effective tax rate equal to the corporate tax rate of 30 percent as assumed by jurisdictional regulators; and
- the fourth, based on the likely outcome under a pre-tax regime assuming an effective tax rate equal to 21.7 percent.

This simulation is particularly useful in that it indicates the precise difference in tax allowance under a post-tax regime and the pre-tax regimes operated by jurisdictional regulators with all other aspects of the regulatory setting (WACC parameters, RAB, capital expenditures etc) being identical.⁴⁶ It therefore provides good indication of the difference in the regimes for the period governed by the most recent decisions of jurisdictional regulators.

The simulation shows that the post-tax revenue outcome is approximately 1.2 - 1.5 percent below that under pre-tax regime assumptions where the effective tax rate is assumed to be 30 percent. Also, it may be noted that the simulation under the PC tax depreciation assumption the effective tax rate for the period was 23.2 percent and for the DV tax depreciation assumption slightly less at 21.6 percent. Both of these numbers are consistent with estimates applying approaches considered earlier in this paper.

Another, interesting observation comes from the pre-tax simulation which assumes a forward looking effective tax rate of 21.7 percent. This outcome gives a tax allowance almost identical to that indicated in a post-tax framework applying DV tax depreciation to most investments (not eligible for accelerated rates of tax depreciation) and is actually less than the tax allowance provided by a post-tax regime applying a PC tax depreciation.

Table 7: Outcomes emerging from simulated regulation of firm similar to EnergyAustralia distribution under pre-tax and a post-tax framework

Financial year ending 30 June	2005	2006	2007	2008	2009	Cumul. Total
Post-tax regime revenue requirement (\$m)	756.3	803.6	846.0	891.1	933.3	4,230.3

⁴⁶ Not all elements of the regulatory framework or asset base assumptions are the same as those applied by IPART and it should not be expected that the building block revenue outcome are the same as those published by IPART, although there will be close parallels.

(PC method for tax depreciation)						
Post-tax allowance for tax (\$m) (PC)	24.5	25.8	28.4	31.2	33.9	143.8
Post-tax regime revenue requirement (\$m) (DV method for tax depreciation)	754.9	801.8	843.8	888.5	930.4	4,219.5
Post-tax allowance for tax (\$m) (DV)	23.2	24.0	26.2	28.6	31.0	133.0
Pre-tax regime revenue requirement assuming $T_e=T_c=30\%$ (\$m)	765.4	814.0	856.4	901.5	943.6	4,281.0
Pre-tax ($T_e=30\%$) allowance for tax (\$m)	33.7	36.2	38.9	41.5	44.2	194.5
Implied over-payment of current tax liability under pre-tax regime ($T_e=30\%$) by comparison with PC tax scenario (\$m)	9.2	10.4	10.5	10.4	10.3	50.7
Implied over-payment of current tax liability under pre-tax regime ($T_e=30\%$) by comparison with DV tax scenario (\$m)	10.5	12.2	12.7	12.9	13.1	61.5
Pre-tax regime revenue requirement assuming $T_e=21.7\%$ (\$m)	755.2	803.0	844.6	888.8	930.1	4221.6
Pre-tax ($T_e=21.7\%$) allowance for tax (\$m)	23.2	25.0	26.8	28.7	30.5	134.2
Implied over-payment of current tax liability under pre-tax regime ($T_e=21.7\%$) by comparison with DV tax scenario (\$m)	0.0	1.0	0.6	0.1	-0.5	1.2

5.1.3 Conclusions drawn from simulations

These simulations make it clear that the difference in revenue outcomes under pre-tax and post-tax frameworks is not a result of the frameworks but of the tax scenarios considered. In the scenarios considered above where capital expenditures are steady or increasing the lower effective tax rate assumption gives outcomes similar to the post-tax framework. In scenarios where ongoing investment has ceased or has been at a minimal level for a prolonged period, the post-tax framework revenue outcomes are likely to be closer (if not higher) than those emerging from a pre-tax framework that assumes the effective tax rate is 30 percent, the same as the corporate tax rate.

The comparison of outcomes for the next regulatory period (beyond 2009) has not been examined in detail as the result will depend on the level and composition of capital expenditures. It is expected that if the same pattern of capital expenditure growth is maintained the outcome difference would be similar. However, if the pattern of capital expenditures falls sharply, the required allowance for tax liabilities may rise in conjunction with a prospective rise in the forward-looking effective tax rate.

Another important figure to emerge from these simulations is the cumulative allowance for tax liabilities under the pre-tax regime relative to actual liabilities in the period. For the 5 years under consideration, the cumulative excess was around \$50m probably of the order of \$100m over the full period 1999 – 2009 when the business was subject to a pre-tax regime (and assumed T_e of 30 percent). This is the cumulative revenue advantage over the period of pre-tax regulation (with assumed T_e of 30 percent) when compared to firms subject to a post-tax regime. The AER does not intend to make adjustment upon transition to a post-tax approach for any additional allowance that may have been received as a result of previous regulatory decisions.

6 Conclusion

6.1 Pre-tax versus post-tax

The MCE has signalled its intention for electricity rules to mandate a post-tax approach to regulation. That being the case, a significant change for some distribution businesses will be the transition to a post-tax framework.

The estimated effective tax rate is a useful summary measure of tax liability under different financial conditions indicating the level of allowance required, in principle, to enable an expectation of a specific return on capital invested. Under a pre-tax regime the effective tax rate required is notionally based on long term forecasts of tax liabilities over many regulatory periods. It is required as an input to the pre-tax regulatory model. Under a post-tax framework realistic estimates of tax liabilities in the regulatory period under consideration are used to calculate the tax building block. The effective tax rate is derived in this process, but not required as an input to the post tax revenue model. The allowance for tax under a post-tax approach is closely aligned to the timing of actual tax liabilities. This also leads to greater transparency in regulation. For these reasons, the AER considers a post-tax approach superior.

6.2 Setting the tax base

Setting the tax base at commencement of post-tax regulation is important and will have an impact on the calculation of the tax allowance (tax building block). The AER proposes to establish appropriate values for the tax base in light of the specific circumstances of each business. One of the most notable influences concerns business ownership. The proposed approach involves taking the value of a firm's assets for tax purposes when it first became subject to tax, and rolling these values forward to the date when a post-tax approach is to apply, taking account of relevant tax depreciation rules and actual capex and disposals. In the case of government owned businesses, the proposed approach is similar, but utilises the date and tax base when the business became subject to the NTER. A key issue for all businesses will be to distinguish RAB assets from non-RAB assets. However, with inflation and the depreciation of existing assets that comes with passing time, the tax base used in the regulatory accounts will become increasingly reflective of the actual tax base of RAB assets.

6.3 Impact on revenue - transfer to post-tax approach

Cash flow analysis of actual and simulated post-tax framework decisions suggest the effective tax rate for a mature distribution business is in the range of 21-26 percent with values at the top of that range for businesses with little or no capex programs.

The key difference between the tax allowance from state regulators applying a pre-tax regime and the AER applying a post-tax regime will not be due to the framework used but the standard assumption by the state regulators that the effective tax rate is 30 percent. The AER does not intend to make adjustment upon transition to a post-tax approach for any additional tax allowance that may have been received as a result of previous regulatory decisions.

The most likely outcome is that the allowance provided for tax to the distribution businesses under the pre-tax framework has exceeded actual and benchmark tax liabilities. The magnitude of this advantage is likely to be approximately 1.2 - 1.5 percent of revenues received over the period of pre-tax regulation (10 years in most cases).⁴⁷

There are two reasons for this:

- First, the difference between the allowance for tax under the pre-tax and the post-tax approach as applied by the AER is as a result of the effective tax rate assumption applied by jurisdictional regulators.
- Second, in theory, part of the additional allowance was notionally intended to cover higher tax liabilities in the future when tax depreciation allowances are exhausted. However, under a post-tax framework businesses receive allowances for tax on an ‘as you go’ basis such that if tax liabilities increase in the future regulatory revenue will increase accordingly. The result is that a business moving from a pre-tax framework to a post-tax regime may receive an element of double allowance for future tax.

The application of a post-tax approach by the AER may involve slightly lower revenues than would have emerged from a continuation of regulation under previous pre-tax regimes. Such a change is likely to be less than 1.5 percent of revenue. However, allowance for tax under a post-tax approach will be sufficient to cover future tax liabilities while also meeting benchmark return assumptions.

7 Summary of issues for comment

The AER invites comment on the proposed method for setting the tax asset base on transition to a post-tax approach. Specifically:

<p><i>Q1 For government owned businesses, is there sufficient data available within NTER tax accounts to distinguish regulated and non-regulated business assets?</i></p>

⁴⁷ This estimate is based on simulations presented in Table 7

Q2 Are tax values calculated by asset class or will total tax asset values need to be assigned to various asset classes for use in the PTRM?

Appendix B – efficiency benefit sharing scheme

1.1 Nature and authority

1.1.1 Introduction

Consistent with the requirements of transitional Chapter 6 of the NER, this document sets out the AER’s efficiency benefit sharing scheme (EBSS) for the ACT and NSW distribution network service providers (DNSPs).

1.1.2 Authority

The AER has developed the EBSS in accordance with the transitional Chapter 6.

1.1.3 Role of the EBSS

- (a) This document defines the EBSS.
- (b) The obligation of a DNSP to comply with the EBSS:
 - (1) is additional to any obligation imposed under any other law applying to a DNSP
 - (2) does not derogate from such an obligation.

1.1.4 Confidentiality

The AER’s obligations regarding confidentiality and the disclosure of information provided to it by a DNSP are governed by the *Trade Practices Act 1974*, the *National Electricity Law* and the NER.

1.1.5 Definitions and interpretation

- (a) In this EBSS, the words and phrases presented in italics are defined in the NER.
- (b) Explanations in this EBSS about why certain information is required are provided for guidance only.

1.1.6 Processes for revision

In accordance with the transitional Chapter 6, the AER may amend or replace this EBSS from time to time, with the agreement of affected DNSPs.

1.1.7 Version history and effective date

A version number and an effective date of issue will identify every version of this EBSS.

1.2 Efficiency benefit sharing scheme for operating expenditure

1.2.1 Introduction

This section sets out the AER's approach to providing incentives for a DNSP to reduce its operating expenditure and the sharing of any resulting efficiency gains or losses between the DNSP and distribution network users.

The incentive for a DNSP to reduce its operating expenditure is derived from three different factors:

- (a) The fact that the AER will not claw back any differences between forecast and actual operating expenditure which arise during the regulatory control period.
- (b) The manner in which the AER makes use of information on past operating expenditure when determining whether the forecast expenditure proposed by a DNSP for the next regulatory control period is efficient.
- (c) The EBSS.

1.2.2 Objectives

In accordance with the transitional Rules, the AER has developed and published an EBSS that provides for a fair sharing between DNSPs and distribution network users of both the efficiency gains and losses for operating expenditure.

The transitional Rules require that the AER, in developing and implementing an EBSS, must have regard to:

- (a) the need to ensure that benefits to consumers likely to result from the scheme are sufficient to warrant any reward or penalty under the scheme for DNSPs
- (b) the need to provide DNSPs with a continuous incentive, so far as is consistent with economic efficiency, to reduce operating expenditure and, if the scheme extends to capital expenditure, capital expenditure
- (c) the desirability of both rewarding DNSPs for efficiency gains and penalising DNSPs for efficiency losses
- (d) any incentives that DNSPs may have to capitalise expenditure
- (e) the possible effects of the scheme on incentives for the implementation of non-network alternatives.

The EBSS rewards sustained efficiency gains through the operation of a symmetrical carryover mechanism that allows a DNSP to retain the benefits of an efficiency gain for the length of the carryover period regardless of the year of the regulatory control period in which the gain was initiated.

A DNSP facing a potential efficiency gain should not perceive a material advantage in either deferring or advancing an efficiency gain or loss. The DNSP should, instead, face an essentially constant benefit or cost from implementing a gain or loss as it

arises. The measurement of gains and losses should not be affected by artificial means such as the shifting of costs between years, but should represent genuine business outcomes that have arisen in the ordinary course of conducting the business in a prudent and diligent manner.

1.2.3 The expenditure allowance for the regulatory control period 2014–2019

The AER considers that it is not appropriate when determining the efficient operating expenditure allowance for future regulatory control periods to relate future targets to past outcomes on a purely mechanistic basis.

The transitional Chapter 6 will set out the matters that must be addressed when a DNSP makes a proposal to the AER as to the level of efficient operating expenditure that might apply in the regulatory control period 2014–2019. The process of setting operating expenditure allowances for this regulatory control period will be conducted according to the requirements set out in the transitional Chapter 6. The AER intends to specify further requirements in a regulatory information notice.

The AER considers it is appropriate for the EBSS to focus on controllable costs but notes that it is a difficult exercise to adequately define in advance all costs that may, or may not, be included in the EBSS. The AER will, therefore, permit a DNSP to propose a range of additional cost categories that should be excluded from the operation of the EBSS. These categories must be specific to the business, involve an identifiable reason for being excluded and should not involve an ongoing business activity.

A proposal to exclude cost categories must be reasonable and must not seek to exclude categories of costs that could otherwise be regarded as controllable costs including, for example, labour and materials costs and service provider costs. A proposal to exclude cost categories deemed to be unreasonable may be rejected in its entirety. Cost categories listed in section 1.2.4.2 of this EBSS or additional cost categories set out in a determination of the AER will be excluded from the operation of the EBSS.

The transitional Rules will provide that the AER must not accept the forecast of required operating expenditure if the AER is not satisfied that the DNSP's estimate of operation expenditure meets the operating expenditure factors.

1.2.4 The efficiency benefit sharing scheme

This section describes how the AER will calculate efficiency gains or losses using the EBSS, and the method by which gains or losses are shared between DNSPs and distribution network users.

The AER will calculate an efficiency gain or loss in the first year of the regulatory control period as follows:

$$E_1 = F_1 - A_1$$

where the parameter A_1 is the actual operating expenditure incurred by the DNSP for year 1 of the regulatory control period and the parameter F_1 is the forecast operating

expenditure accepted or substituted by the AER for that year in the relevant revenue determination.

Gains or losses that arise in the second and subsequent years of the regulatory control period will be calculated as:

$$E_t = (F_t - A_t) - (F_{t-1} - A_{t-1})$$

where:

E_t is the efficiency benefit/loss in year t

A_t, A_{t-1} are the actual, or adjusted actual, operating expenditure incurred in years t and $t-1$ respectively,

F_t, F_{t-1} are the forecast, or adjusted forecast, operating expenditures accepted or substituted for the years t and $t-1$ respectively.

The sample calculations contained in attachment 1 illustrates the calculation process that underpins the EBSS and is based on unadjusted amounts. The adjusted efficiency benefit/loss for each year will be retained by the DNSP for the length of the carryover period following the year in which it was incurred, after which the total value of the gain or loss is removed from the DNSP's expenditure forecast and notionally 'shared' with distribution network users. Because of the forward-looking nature of the EBSS, the sharing of efficiency gains or losses will not occur until 2009–2014, the regulatory control period immediately following the implementation of the EBSS.

The efficiency benefit sharing calculation will be undertaken in such a way as to ensure inflation does not erode the value of any benefit/loss to be retained by the DNSP. Price indices used in the calculation must be consistent with those used in the revenue determination applicable to the same regulatory control period.

1.2.4.1 Final year adjustment

As the distribution determination for the next regulatory control period will usually be made prior to the completion of the current period, the AER will estimate the actual operating expenditure required to calculate gains or losses for the final year of the current period as follows:

$$A_5 = F_5 - (F_4 - A_4)$$

Where differences arise between this estimate and the actual expenditure amount of the final year, the efficiency gain or loss in the first year of the following regulatory control period will be adjusted as follows:

$$E_6 = (F_6 - A_6) - (F_5 - A_5) + (F_4 - A_4)$$

1.2.4.2 Adjustments to forecast operating expenditure allowances for the purposes of calculating carryover amounts

In calculating the benefits or losses to be carried over, the measurement of actual expenditure over the regulatory control period must be done using the same cost categories and methodology used to calculate the forecast expenditure for that period.

Adjustments will be made where necessary to correct for variances in cost categories and methodologies, and errors.

If capitalisation policies during the regulatory control period have changed, the DNSP must adjust the forecast operating expenditures used to calculate the carryover amounts so that the forecast expenditures are consistent with the capitalisation changes. A DNSP must provide a detailed description of the changes in capitalisation policies and a calculation of the impact of those changes in capitalisation policy.

For the purposes of calculating the carryover amounts, the forecast operating expenditure must be adjusted for the cost consequences of the difference between forecast and actual demand growth over the regulatory control period. These adjustments must be made using the same relationship between growth and expenditure used in establishing the forecast operating expenditure. Adjustments must only be applied to those components of operating expenditure that have a direct relationship to growth.

In calculating carryover gains or losses, the AER will consider other adjustments to the forecast operating expenditure as proposed by the DNSP for cost categories previously approved by the AER. Proposed adjustments to the forecast operating expenditure will only be accepted if they are for changes in costs that the AER has deemed to be uncontrollable and will not adversely impact the operation of the EBSS.

Allowed increases or decreases in actual expenditures associated with recognised pass through events will be excluded from the actual and forecast expenditure amounts used to calculate carryover gains or losses under the EBSS.

In calculating carryover gains or losses, the AER must be satisfied that the actual and forecast operating expenditure accurately reflects the costs faced by the DNSP in the regulatory control period.

1.2.4.3 Carryover period

The AER will adopt a nominal carryover period of five years to calculate the carryover amounts except where the AER has approved a longer regulatory control period. Where the AER approves a longer regulatory control period for a DNSP, the AER will also consider permitting a longer carryover period, not exceeding ten years.

1.2.4.4 Application of carryovers

Subject to the adjustments noted, the AER will apply all carryovers, both positive and negative.

1.2.5 DNSP-specific EBSS

This EBSS applies to all DNSPs in the ACT and NSW. Business-specific EBSSs have not been applied in this release of the guideline. A DNSP wishing to propose an individual variation to the EBSS to apply to its business may do so according to section 1.2.6.

1.2.6 Review or amendment of the EBSS

The transitional Rules will provide scope for the AER to amend this EBSS with the agreement of each affected DNSP. The AER may carry out such consultation in connection with the amendment of an EBSS as the AER thinks appropriate.

Further, the AER may monitor and collect information from any or all of the ACT and NSW DNSPs on matters relevant to be included in an EBSS the purpose of developing, amending or applying an EBSS for the regulatory control period commencing on 1 July 2014.

Attachment 1- Example of the EBSS calculation

Year	1	2	3	4	5	6	7	8	9	10
Forecast expenditure	101	100	103	100	101	93	93	93	93	93
Actual	100	99	94	93	94 ^(a)					
Incremental gain/loss	1	0	8 ^(b)	-2	0	^(c)				
Efficiency carryover										
Year 1		1	1	1	1	1				
Year 2			0	0	0	0	0			
Year 3				8	8	8	8	8		
Year 4					-2	-2	-2	-2	-2	
Year 5						0	0	0	0	0
Carry forward amounts						7	6	6	-2	0
Expenditure for pricing purposes	101	100	103	100	101	100	99	99	91	93

(a) This figure is an estimate only because the actual operating expenditure amount is now known at the time of the regulatory reset. This estimate has been calculated using the equation:

$$\begin{aligned}A_5 &= F_5 - (F_4 - A_4) \\ &= 101 - (100 - 93) \\ &= 94\end{aligned}$$

The correction for this estimate, which has been omitted for simplicity, will impact the incremental gain/loss for year 6 and thus the carryover amount for year 11.

$$\begin{aligned}\text{(b)} \quad E_3 &= (F_3 - A_3) - (F_2 - A_2) \\ &= (103 - 94) - (100 - 99) \\ &= 8\end{aligned}$$

(c) The incremental gain/loss for year 6 will be calculated using the following formula:

$$E_6 = (F_6 - A_6) - (F_5 - A_5) + (F_4 - A_4)$$

Appendix C – application of current control mechanisms

1.1 ICRC determination – prescribed services in the ACT

The control mechanism applied to prescribed distribution services in the ACT is set out in the ICRC’s Final decision: Investigation into electricity distribution services in the ACT, March 2004. The form of control is a maximum average revenue cap. This constraint is expressed as the maximum allowed annual revenue for network services, per kilowatt hour.

To set the initial average revenue allowance for the first year of the current regulatory period (2004- 2005), the ICRC determined a building block revenue requirement for prescribed distribution services and divided this by actual energy sales from 2003, to derive an average network revenue cap for of \$0.0383 per kilowatt hour. In each subsequent year of the regulatory period, the average revenue is escalated using a CPI-X mechanism. The average revenue cap for prescribed distribution services in any given year is determined using the following equation:

$$\text{Maximum average revenue per kWh}_t = (1 + (CPI_t + X)) \times (MAR_{t-1})$$

Where:

- MAR_{t-1} is the maximum average revenue allowance for the previous year
- CPI is the Consumer Price Index

The CPI value used for escalating the MAR each year is determined using the following formula:

$$CPI_t = \frac{(CPI_{March(t-2)} + CPI_{June(t-2)} + CPI_{September(t-1)} + CPI_{December(t-1)})}{(CPI_{March(t-3)} + CPI_{June(t-3)} + CPI_{September(t-2)} + CPI_{December(t-2)})} - 1$$

The maximum average revenue cap is used to determine the total revenue allowance for the purposes of setting prices for prescribed distribution services including DUOS charges and miscellaneous services.

1.1.1 Prescribed distribution services revenue cap

The total prescribed distribution services revenue cap for each year of the regulatory period is derived by applying the CPI-X escalation to the average revenue allowance for year t-1 and multiplying this by actual energy sales (kWh) in the previous calendar year. Charges for all prescribed services (DOUS and miscellaneous services) must be set to comply with this constraint. Table 1 illustrates the composition of the revenue cap for prescribed distribution services, using hypothetical values.

Table 1 - Example calculation of prescribed services revenue cap

Maximum average revenue - year t	\$0.0375
* Energy sales (kWh) calendar - year $t-I_{calendar}$	2,643,549,261
<hr/>	
Prescribed distribution services revenue cap	\$99,133,097
Proposed miscellaneous charges for miscellaneous services, t	(\$1,063,284)
<hr/>	
Distribution use of system cap,t	\$98,069,813
<hr/>	
Forecast TUOS charges, t	\$19,456,758
Allowed pass through amounts, t	\$5,684,206
Cap for setting NUOS charges,t	\$123,210,777

1.1.2 Distribution use of system charges

Table 1 above illustrates that the cap for DUOS services is derived by subtracting proposed miscellaneous services revenue for year t from the total prescribed distribution services revenue cap. This returns the distribution use of system cap which must be observed when setting DUOS charges.

Compliance with the DUOS revenue cap is monitored by multiplying the proposed DOUS tariffs for the coming year, by actual sales in each tariff category from the previous calendar year.

1.1.3 Charges for miscellaneous services

Miscellaneous services represent a range of network services including, but not limited to, re-energising and de-energising lines, temporary connections, repositioning of services and issuing of electrical drawings. Revenues derived from miscellaneous services are regulated under the overall prescribed distribution services revenue cap.

Like revenue from proposed DUOS charges, the proposed revenue from miscellaneous services for year t is checked for compliance with the revenue constraint for year t by multiplying the proposed tariffs for the coming year by actual sales in the previous calendar year, for each tariff category.

1.1.4 Transmission use of system charges

The current determination allows for the pass through of TUOS costs to customers based on forecast charges for the next financial year. These costs (less settlement residues from the previous year) are recovered through a separate tariff component which is supplementary to the prescribed regulated revenue requirement. This charge is added to the DUOS charges, and other pass through amounts, to derive the network prices for each service (NUOS charges).

The current determination does not provide for the annual adjustment of network prices to reflect actual TUOS liability incurred in the previous year. TOUS recoveries are based on forecast amounts only.

1.1.5 Side constraints

The ICRC did not apply formal pricing side constraints at the 2004 distribution determination. However, the ICRC's alternative pricing methodology does require that ActewAGL provide an explanation for individual tariff increases which are greater than 5 per cent in real terms. If the ICRC is not satisfied that the explanation is reasonable, it will request further supporting information, or ask ActewAGL to submit a revised tariff.

1.1.6 Compliance with the revenue constraint

To determine compliance with the prescribed services cap the ICRC assesses ActewAGL's proposed tariffs for all prescribed DUOS services using the following formula:

$$\text{Maximum average revenue (kWh)}_t \geq \sum \frac{(\text{total energy sales}_{t-1}^n \times \text{proposed tariff}_t^n)}{\text{kilowatt hours transported}_{t-1}}$$

Where:

- n is customer classes
- total energy sales and kilowatt hours transported are actual figures for the previous calendar year sold in the ACT by ActewAGL distribution and confirmed by NEMMCO.

Charges for miscellaneous services cannot meaningfully be expressed as a per kilowatt hour amount. Therefore, compliance of these charges with the revenue cap is determined by ensuring that the sum of the proposed charges for DUOS and miscellaneous services (when multiplied by actual volumes from the previous calendar year, for each tariff) does not exceed the prescribed distribution services cap.

1.2 ACCC determination - EnergyAustralia's transmission services

The ACCC's Statement of regulatory principles (8 December 2004) and NSW and ACT transmission network revenue cap 2004–05 to 2008–09: Decision (27 April 2005) set out the revenue cap control mechanism applied to EnergyAustralia prescribed (transmission) standard control services in the 2004–2009 regulatory control period.

The revenue cap applied to EnergyAustralia in the current regulatory control period is based on a building block analysis of required revenue. This revenue requirement was determined on an ex-ante basis. The ACCC allowed this revenue cap to be adjusted for:

- A service target performance incentives or service standards factor
- Pass through events

Adjustments to the revenue cap for contingent projects in the current regulatory control period are provided for by clause 11.6.19(d) and (e) of the NER.

The AER applied the following revenue cap control formula to EnergyAustralia's transmission services :

$$MAR = (AR_t) \pm \left[\frac{(AR_{t-1} + AR_{t-2})}{2} \times S_{ct} \right] \pm (\text{pass through})$$

Where:

MAR is the maximum allowed revenue

AR is the annual revenue

S is the service standards factor

t is the time period on a financial year basis

ct is the time period on a calendar year basis

1.3 IPART determination – prescribed services in NSW

IPART's Notice under clause 6.10.3 of the National Electricity Code - Economic Regulatory Arrangements (June 2002) sets out the control mechanisms applying to the prescribed distribution services in NSW during the current regulatory period. These control mechanisms are:

- A weighted average price cap for the distribution component of network prices
- A pass through of the transmission components of network prices
- Price limits apply to individual network prices, excluding cost reflective network prices.

These control mechanisms were implemented and further defined in IPART's NSW Electricity Distribution Pricing 2004–05 to 2008–09: Final Determination (June 2004) (final determination). In particular, IPART set explicit pricing provisions for specified monopoly services, miscellaneous services and emergency recoverable works within the weighted average price cap.

1.3.1 Distribution components of network prices

IPART applied a single weighted average price cap to the distribution component of network prices from 1 July 2004 to 30 June 2009. The distribution component of network prices includes distribution use of service (DUOS) tariffs, miscellaneous charges, monopoly fees and emergency recoverable works.

IPART applied a standard weighted average price cap control formula to the distribution component of network prices in the final determination with an adjustment for demand management incentives⁴⁸:

⁴⁸ This formula is based on IPART, *NSW Electricity Distribution Pricing 2004–05 to 2008–09: Final Determination*, June 2004, p.6

$$\frac{\sum_{i=1}^n \sum_{j=1}^m p_{ij}^{t+1} \times q_{ij}^{t-1}}{\sum_{i=1}^n \sum_{j=1}^m p_{ij}^t \times q_{ij}^{t-1}} \leq 1 + \Delta CPI + X_{t+1} + D_{t+1} \quad i = 1, \dots, n \text{ and } j = 1, \dots, m.$$

Where: The DNSP has n relevant prescribed distribution service charges, which each have up to m components:

p_{ij}^{t+1} is the proposed price for component j of the relevant prescribed distribution service charge i for year $t+1$

p_{ij}^t is the proposed price for component j of the relevant prescribed distribution service charge i for year t (being the year which immediately precedes year $t+1$)

q_{ij}^{t-1} is the audited quantity of component j of the relevant prescribed distribution service charge i that was charged by the DNSP in year $t-1$ (being the year immediately preceding year t)

X_{t+1} is the allowed real change in average prices from year t to year $t+1$ of the regulatory control period as determined by the IPART

D_{t+1} is the demand management cost recovery factor for year $t+1$ calculated to recover certain approved demand management implementation costs and foregone revenue incurred in year $t-1$

ΔCPI means the number derived from the application of the following formula:

$$\Delta CPI = \left[\frac{CPI_{Mar,t-1} + CPI_{June,t-1} + CPI_{Sept,t} + CPI_{Dec,t}}{CPI_{Mar,t-2} + CPI_{June,t-2} + CPI_{Sept,t-1} + CPI_{Dec,t-1}} - 1 \right]$$

Where:

CPI means the all groups index number for the weighted average of eight capital cities as published by the Australia Bureau of Statistics (ABS), or if the ABS does not or ceases to publish the index, then CPI will mean an index which IPART considers is the best estimate of the index

t refers to a nominal year

$CPI_{month(year)}$ means the CPI for the quarter and the year indicated.

In applying the above formula, IPART used the most recently audited quantity information available to determine the relevant index values.

1.3.2 Transmission cost recovery tariffs

During the current regulatory period IPART has allowed each DNSP to recover its actual transmission related payments, net of transmission settlement residue payments, through transmission cost recovery tariffs. Transmission related payments include:

- Transmission charges paid to TNSPs for use of the transmission system
- Avoided TUOS paid to embedded generators
- Payments made to other DNSPs for use of their network.

Each DNSP bases its transmission cost recovery tariffs for each year on a forecast of the transmission related payments for that year. Where there is a difference between the forecast and actual transmission related payments, resulting in an over or under recovery of transmission charges, DNSPs record this in a transmission overs and unders account. The purpose of this account is to allow for differences between forecasts and actual charges to be recovered or returned by adjusting transmission cost recovery tariffs in the following year.

1.3.3 Charges for miscellaneous and monopoly services

IPART determined an exhaustive list of maximum prices for miscellaneous charges and mandatory monopoly fees in the NSW Electricity Distribution Pricing 2004–05 to 2008–09: Final Determination (June 2004) based on escalated 2004 prices. These prices were set for fixed for the duration of the regulatory control period. IPART also determined a set of pricing principles for recoverable works for emergency services.

1.3.4 Price limits

During the current regulatory control period, IPART applied price limits to total network tariffs, consisting of distribution and transmission components. These price limits restrict the percentage movement of individual network tariffs from year to year. IPART also set an upper limit of \$30 on increases in aggregate fixed charge components for residential tariffs.

IPART applied the price cap formula to total network tariffs in the final determination:

$$\frac{\sum_{j=1}^m r_j^{t+1} \times q_j^{t-1}}{\sum_{j=1}^m r_j^t \times q_j^{t-1}} \leq 1 + \Delta CPI + L_{t+1} \quad j = 1, \dots, m.$$

Where: The network tariff has up to m aggregate components

An aggregate component of a network tariff means the aggregate of any DUOS tariff component and its corresponding transmission cost recovery tariff component

r_j^{t+1} is the proposed price for aggregate component j of the network tariff for year $t+1$

r_j^t is price charged by the DNSP for aggregate component j of the network tariff in year t (being the year immediately preceding year $t+1$)

q_j^{t-1} is the audited quantity of component j of the network tariff that was charged by the DNSP in year $t-1$ (being the year immediately preceding year t)

L_{t+1} is the real percentage change of an individual network tariffs, weighted for its aggregate components, from year t to year $t+1$ of the regulatory control period as determined by IPART.

ΔCPI means the number derived from the application of the following formula:

$$\Delta CPI = \left[\frac{CPI_{March(t-1)} + CPI_{June(t-1)} + CPI_{September(t)} + CPI_{December(t)}}{CPI_{March(t-2)} + CPI_{June(t-2)} + CPI_{September(t-1)} + CPI_{December(t-1)}} - 1 \right]$$

Where:

CPI means the all groups index number for the weighted average of eight capital cities as published by the Australia Bureau of Statistics (ABS), or if the ABS does not or ceases to publish the index, then CPI will mean an index which IPART considers is the best estimate of the index

t refers to a nominal year

$CPI_{month(year)}$ means the CPI for the quarter and the year indicated.