Final decision

Amendment

Electricity transmission and distribution network service providers

Post-tax revenue models (version 4)

April 2019

AUSTRALIAN ENERGY REGULATOR

Inquiries about this publication should be addressed to:

Australian Energy Regulator
GPO Box 520
Melbourne Vic 3001

Tel: 1300 585165

Email: ModelReviews@aer.gov.au
AER Reference: 63688

Shortened forms

Shortened form	Extended form
AER	Australian Energy Regulator
ATO	Australian Tax Office
Capex	Capital expenditure
DNSP	Distribution network service provider
DV	Diminishing value
ERC	Equity raising costs
ITAA 1997	*Income Tax Assessment Act 1997*
NEL	National Electricity Law
NER	National Electricity Rules
NERL	National Energy Retail Law
NGL	National Gas Law
NPV	Net present value
Opex	Operating expenditure
PTRM	Post-tax revenue model
NSP	Network service provider
RAB	Regulatory asset base
RFM	Roll forward model
SL	Straight-line
TAB	Tax asset base
TNSP	Transmission network service provider
WARL	Weighted average remaining lives
Tax review	Review of regulatory tax approach

Contents

1 Introduction

The Australian Energy Regulator (AER) is the independent regulator for Australia's national energy market. We are guided in our role by the national electricity, gas and energy retail objectives set out in the National Electricity Law (NEL), National Gas Law (NGL) and the National Energy Retail Law (NERL). These objectives focus on the long term interests of consumers.

We are responsible for the economic regulation of prescribed/direct control services provided by transmission and distribution network service providers (TNSPs and DNSPs) in the National Electricity Market (NEM), in accordance with the National Electricity Rules (NER). The NER requires us to prepare and publish post-tax revenue models (PTRMs) for TNSPs and DNSPs.[1] TNSPs and DNSPs can be collectively referred to as network service providers (NSPs).

The NER allows us to amend or replace the PTRMs of the NSPs and sets out the requirements in doing so.[2] We released an explanatory statement of proposed amendments to the PTRMs in January 2019.[3] We received 6 submissions on these proposed amendments.[4] This final decision sets out our position on the amendments to the PTRMs and the reasons for the changes.

To ensure that the PTRM remains fit for purpose, we amend or replace it from time to time when necessary.[5] Table 1 shows the versions of the transmission and distribution PTRMs, the key changes to these models and when they were made. The final amended versions of the PTRMs are labelled version 4 for both transmission and distribution versions.

Table 1 PTRM revisions

Date	Transmission version	Key changes	Distribution version	Key changes
September 2007	1	n/a		
June 2008			1	n/a
June 2009			2	Corrected various errors.

1 NER, cll. 6A.5.2(a) and 6.4.1(a).
2 NER, cll. 6A.5.2 and 6.4.1, read with the applicable consultation procedures, NER, cll. 6A.20(b) and 6.16(b).
3 AER, *Explanatory statement - Proposed amended electricity transmission and distribution network service providers' post-tax revenue models*, January 2019.
4 AGIG, *Submission to post-tax revenue model - proposed amendments*, 7 March 2019; Ausgrid, *Submission: Post-tax revenue models (transmission and distribution) - April 2019*, 12 March 2019; CitiPower, Powercor and United Energy, *Submission: Post-tax revenue models consultation*, 12 March 2019; ENA, *Submission to post-tax revenue model - proposed amendments*, 12 March 2019; Jemena, *Feedback on Proposed Amendments to the Post Tax Revenue Model*, 12 March 2019; TransGrid, *Submission to post-tax revenue models - April 2019 amendment*, 11 March 2019.
5 NER, cll. 6A.5.2(b) and 6.4.1(b), read with the applicable consultation procedures.

December 2010	2	Allowed as-commissioned opening RAB.		
January 2015	3	Allowed annual return on debt updates.	3	Allowed annual return on debt updates.
April 2019	4	Allowed tax review findings on immediate expensing and diminishing value tax depreciation.	4	Allowed tax review findings on immediate expensing and diminishing value tax depreciation.

The two PTRMs (distribution and transmission) are designed to work in conjunction with the asset base roll forward models (RFMs). We will shortly commence a new review of the distribution and transmission RFMs to reflect the related changes made to the PTRMs. This will involve a separate consultation process in accordance with the relevant rules.[6]

1.1 What does the PTRM do?

We adopt a building block approach when determining an NSP's regulated revenue for each year of a regulatory control period. Under this approach we determine the value of the building block costs that make up the annual revenue requirement for each regulatory year. The building block costs include:

- an indexation of the regulatory asset base (RAB)
- a return on capital
- a return of capital (depreciation)[7]
- the estimated cost of corporate income tax
- forecast operating expenditure (opex)
- revenue increments or decrements arising from applicable incentive schemes[8]
- adjustments related to any mechanisms used in the previous regulatory control period and other revenue adjustments such as those related to shared assets.

We developed the PTRM which brings together the various building block costs and calculates the annual revenue requirement for each year of a regulatory control period.[9] The PTRM also calculates the X factors required under the CPI–X methodology which are used to escalate the expected revenue for each year (other than the first year) of the regulatory control period.[10] An electricity NSP's revenue proposal must be prepared using our PTRM.[11]

6 NER, cll. 6A.5.2(b) and 6.4.1(b).
7 The net total of the indexation of the RAB and depreciation building blocks is referred to as 'regulatory depreciation'.
8 Being any efficiency benefit sharing schemes, capital expenditure sharing schemes, service target performance incentive schemes, or small scale incentive schemes applied to the NSP (and, in the case of distributors, any applicable demand management and embedded generation schemes).
9 NER, cll. 6A.5.4 and 6.4.3.
10 NER, cll. 6A.5.3, 6A.6.8 and 6.5.9.

1.2 How was the amended PTRM developed?

We wanted all stakeholders to have opportunity to consider our proposed changes to the PTRMs and make written comments in response. On 24 January 2019, we commenced the consultation process by publishing:[12]

- the proposed amended models
- the handbooks to accompany the proposed amended models
- an explanatory statement, setting out the provisions of the NER under which the models were proposed to be prepared, and the reasons for the proposed amended models.[13]

We asked stakeholders to make submissions on the proposed amendments on or before 12 March 2019.[14] We received 6 written submissions by this date, from:

- Australian Gas Infrastructure Group (AGIG)[15]
- Ausgrid[16]
- CitiPower, Powercor and United Energy (CPUE) as a joint submission[17]
- Energy Networks Australia (ENA)[18]
- Jemena[19]
- TransGrid.[20]

We have carefully evaluated the contents of those submissions as part of finalising the amendments to the PTRMs.

The amended PTRMs are published with this decision, in accordance with the NER.[21] This final decision sets out our reasons for adopting these amendments, including the changes made since the January draft versions in response to submissions.

Version 4 of the PTRMs will therefore be the template for all subsequent regulatory determinations for electricity NSPs.

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11 NER, cll. 6A.4.1(b)(1) and 6.3.1(c)(1).
12 NER, cll. 6A.20(b) and 6.16(b).
13 AER, *Explanatory statement - Proposed amended electricity transmission and distribution network service providers' post-tax revenue models*, January 2019.
14 AER, *Explanatory statement - Proposed amended electricity transmission and distribution network service providers' post-tax revenue models*, January 2019, p. 3.
15 AGIG, *Submission to post-tax revenue model - proposed amendments*, 7 March 2019.
16 Ausgrid, *Submission: Post-tax revenue models (transmission and distribution) - April 2019*, 12 March 2019.
17 CitiPower, Powercor and United Energy, *Submission: Post-tax revenue models consultation*, 12 March 2019.
18 ENA, *Submission to post-tax revenue model - proposed amendments*, 12 March 2019.
19 Jemena, *Feedback on Proposed Amendments to the Post Tax Revenue Model*, 12 March 2019.
20 TransGrid, *Submission to post-tax revenue models - April 2019 amendment*, 11 March 2019.
21 The period between publication of the proposed amended model and final amended model has been less than 80 business days. See NER, cll. 6A.20(e) and 6.16(e).

1.3 Why are we amending the PTRM?

The estimated cost of corporate income tax is one component we consider when setting the forecast revenue allowances for regulated electricity and gas networks. In May 2018, we commenced a review into the regulatory tax framework (the tax review). On 17 December 2018, we released the final report of the tax review which identified three changes to our current approach in calculating the estimated cost of corporate income tax. Two of the findings require changes to our regulatory models—that is the RFM and PTRM. Specifically, the final report of the tax review required the following two changes which affect the calculation of tax depreciation in the models:

- **immediate expensing** – allow the recognition of immediate expensing of certain capital expenditure (capex) for tax purposes (section 2.1)
- **diminishing value method** – apply the diminishing value (DV) method for tax depreciation purposes to all new depreciable assets except for certain assets (section 2.2).[22]

The findings in the final report of the tax review also include applying the 20 year statutory cap on certain classes of gas transmission and distribution assets.[23] However, the PTRMs can accommodate this finding as the tax standard asset lives are inputs in the PTRM. Therefore, we consider that no further amendment to the PTRMs is required to implement this finding. We note that while the regulatory models (RFM and PTRM) are developed primarily for electricity network service providers under the NER, the majority of the regulated gas NSPs adopt these models for their access arrangement review purposes.

At this stage, we will make the required changes in the PTRMs first. This is because the tax review final report stated that the required changes to the tax depreciation approach would apply to new assets only. This means that only changes to the PTRMs are required in the first regulatory control period when adopting the new tax approach. As such, no immediate change to the RFM would be required until the subsequent regulatory control period. Therefore, we will make the relevant amendments to the RFM at a later stage.

In addition to the above amendments to give effect to the findings of the tax review, we also made the following amendments to the PTRMs:

- provide the option for selecting between the year-by-year tracking or weighted average remaining lives (WARL) approach for calculating straight-line (SL) depreciation on the opening RAB and opening tax asset base (TAB) values (section 2.3)
- expand the number of asset classes to 50 in the distribution PTRM, consistent with the transmission PTRM (section 2.4)
- correct typographical errors and other minor formatting issues (section 2.4).

22 For example, assets qualified under section 40-72 of the ITAA (e.g. intangible depreciable assets) are not subject to the DV method. Other assets such as buildings and other capital works, and equity raising costs are also not subject to this depreciation method. This is discussed in more detail in section 2.2.

23 AER, *Final report: Review of regulatory tax approach*, December 2018, p. 80.

2 Amendments

We have made relevant changes to the PTRMs to implement the findings from the tax review. The main changes are to allow for immediate expensing of forecast capex and apply the DV method to calculate the tax depreciation for new assets. In addition to the changes on the tax depreciation, we also made some other amendments to the current version 3 PTRMs. We note that there are some differences between the transmission PTRM and distribution PTRM. However, the amendments discussed in this final decision affect both in similar ways and are therefore discussed together.

Table 2 provides a summary of our amendments. A high level summary of changes is also provided in the *'Intro'* worksheet to the PTRMs. We have amended the PTRM handbooks to include additional guidance on implementing the new tax depreciation approach. We have also included various comments and labels in the amended PTRMs to provide high level instruction on the new inputs required for calculating the tax depreciation.

Table 2 Summary of amendments to the transmission and distribution PTRMs

Amendments	Worksheet	Change description
Immediate expensing of capex	PTRM Input	Added a new section to allow users to input the forecast capex by asset classes which can be immediately expensed for tax purposes for each year of the regulatory control period
	Assets	Amended formulae for tax depreciation calculation to account for immediately expensed forecast capex for all asset classes
Diminishing value	PTRM Input	Added a new section to input the DV depreciation multiplier as determined by ATO for each year of the regulatory control period
	Assets	Amended formulae for tax depreciation to account for the DV method for asset classes 1 to 46 (remaining 4 asset classes maintain the SL method)
Year-by-year tracking depreciation	PTRM Input	Added new SL depreciation options for opening RAB and TAB to allow users to implement either the WARL or year-by-year tracking approaches for depreciating the opening RAB and TAB Added a new input section for users to provide depreciation values calculated using the year-by-year tracking approach if this option is chosen
	Assets	Amended formulae for depreciation on opening RAB and opening TAB to account for the option of selecting the year-by-year tracking depreciation approach

Other minor changes	PTRM Input, Assets, Analysis	Expanded distribution PTRM to allow for 50 asset classes (increase from 30 asset classes) to be consistent with transmission PTRM Made other changes relate to formatting, labelling or formula updates which, while noted for completeness, are not consequential to the operation of the PTRM

The final amended PTRMs and handbooks for distribution and transmission are at appendices A to D. To assist stakeholders to identify all changes from the previous version, there is a detailed change log at appendix E.

The changes are now discussed in more detail.

2.1 Immediate expensing of forecast capex

Certain capex (such as refurbishment capex) is able to be 'immediately expensed' under tax legislation. The version 3 PTRMs did not recognise the ability to immediately expense some capex, and instead treats all capex as additions to the TAB for tax purposes. As set out in the final report for the tax review, we have amended the PTRMs so that immediately deductible capex can be accounted for in the modelling of the forecast tax costs included in the total revenue.[24]

Consistent with the findings in the final report of the tax review, we have made the following changes in the PTRMs:

- added a new input section where the amount of forecast capex for immediate expensing (by asset classes) can be provided for each year of the regulatory control period
- amended the tax depreciation calculation so that the value of immediately deductible capex is removed from the net capex to be depreciated for tax purposes. That is, the net capex for tax depreciation purposes is the amount of gross capex, less disposals, less the immediately deductible capex[25]
- included the immediate expensing amount in the total tax depreciation amount for each regulatory year. This allows the value of immediately deductible capex to be recorded as a tax expense for the year in which it is forecast to be incurred.

The amendments provide for a forecast of immediately deductible capex to be recorded in the PTRMs. NSPs have not previously been required to provide this information to the AER as part of their regulatory proposal. The final report of the tax review found that an 'actuals informed approach' should be used to determine the appropriate amount for this forecast. The 'actuals informed approach' would involve forecasting a certain proportion of capex as immediately deductible. This proportion would be informed by the amount of actual capex that was treated by the NSP as immediately deductible over a previous period, and the actual use of immediate expensing across the sector.[26] As part of the reset process, we will

24 AER, *Final report: Review of regulatory tax approach*, December 2018, pp. 64–66.

25 For distribution, the net capex for tax purposes reflects the as-incurred approach and includes any customer contributed capex. For transmission, the net capex reflects the as-commissioned approach.

26 AER, *Final report: Review of regulatory tax approach*, December 2018, p. 66.

assess and consult with the NSPs on the appropriate amount of forecast immediate expensed capex.

Ausgrid's submission in response to our proposed amendments to the PTRMs stated that the AER has implemented the modelling changes described in the tax review final report accurately. However, it further noted that it would expect that the AER would not assume any forecast refurbishment capex will be immediately deductible for tax purposes for Ausgrid, nor other businesses that do not currently immediately expense refurbishment capex.[27] We consider that the decision of what amount of capex that will be forecast as immediately deductible will be made as part of the regulatory determination process. This is outside of the scope of the decision on the model changes required to implement this approach.

2.2 Diminishing value method for tax depreciation

The version 3 PTRMs use the SL method to calculate tax depreciation for all asset classes. The final report of the tax review stated that we should apply the DV method as the new regulatory benchmark for tax depreciation to all new assets.[28] This includes, in the context of tax law: new assets added to the cost base of an existing depreciated asset, and new and separate depreciating assets for the purposes of Division 40 of the *Income Tax Assessment Act* (ITAA). However, there are some exceptions to this approach such as assets relating to in-house software, buildings and equity raising costs. The amended PTRMs allow capex relating to these exempt categories to continue to be depreciated under the SL method.[29]

We have also kept the SL method for the tax depreciation calculation on the opening TAB values in the amended PTRMs. This is consistent with the tax review's findings to maintain this approach for existing assets.[30]

Applying the diminishing value method to new assets

For those asset classes that are subject to the DV method, we have amended the tax depreciation calculation in the PTRMs to reflect the Australian Tax Office's (ATO's) formula as below:[31]

Base value × (days held ÷ 365[32]) × (200% ÷ asset's effective life)

We have assumed the number of days that the asset is being held ('days held' value in the formula above) to be 365 days. The 'base value' and 'asset's effective life' values are already included in the PTRMs, therefore no further changes to the PTRMs are needed. The 'base value' is the net capex[33] value for tax depreciation as calculated in the PTRMs. The 'asset's

27 Ausgrid, *Submission: Post-tax revenue models (transmission and distribution) - April 2019*, 12 March 2019, p. 2.
28 AER, *Final report: Review of regulatory tax approach*, December 2018, p. 76.
29 Asset classes 47–50 in the final amended PTRMs provide for this.
30 AER, *Final report: Review of regulatory tax approach*, December 2018, p. 74.
31 ATO website: https://www.ato.gov.au/forms/guide-to-depreciating-assets-2006-07/?page=17.
32 Can be 366 days for a leap year.
33 The net capex for tax depreciation is equal to the gross capex, less disposals, less immediately expensed capex (as discussed in section 2.1).

effective life' is the input for 'tax standard asset life' in the PTRMs. Therefore, we have modified the DV calculation formula to be applied in the PTRMs as below:

$$D_t = \left(Nominal\ net\ capex_i - \sum_{n=0}^{t-1} D_n \right) \times 200\% \div tax\ standard\ asset\ life$$

where:

D_t is the tax depreciation in year t

$D_0 = 0$

$t = 1,2,3, \ldots$

$i = year\ 0$

We have added a new input section for the '200%' value in the above formula to be recorded for each year of the regulatory control period in the 'Tax' section of the 'PTRM Input' worksheet. We have labelled this input as the 'diminishing value multiplier' in the PTRMs. While currently the DV multiplier is set as 200 per cent by the ATO, this new input section allows revisions to be made in the PTRMs if the ATO changes this multiplier in future.

ENA submitted that the AER should make it clear that any change to the DV multiplier is only to be applied prospectively, not retrospectively.[34] We agree that any changes to the DV multiplier are intended to apply prospectively. For example, if the ATO advises—prior to the final decision on a networks' determination—that the DV multiplier is to change to 150 per cent from year 3 of the 5 year regulatory control period. The DV multiplier input for the first two years of the regulatory control period will remain 200 per cent, and 150 per cent will be input for the final 3 years of the period.[35]

Jemena's submission to the proposed amended PTRM noted that its gas distribution network (JGN) already depreciates its existing TAB using the DV method. The amended PTRM does not allow for the option to depreciate the opening TAB based on the DV method, consistent with the findings of the tax review. Jemena recommended providing this option in the PTRM to allow JGN to continue depreciating its existing TAB based on the DV method.[36] We note that this amended PTRM only applies to electricity NSPs, and there are no electricity NSPs that currently have the regulatory benchmark for tax depreciation of existing assets set using the DV method. Consistent with the tax review final report, existing assets for these electricity NSPs will continue to be depreciated using the SL method.[37] We also note that the AEMC has finalised its rule changes for the regulation of covered pipelines.[38] Part of this rule change allows the AER to develop consistent financial models that gas

34 ENA, *Submission to post-tax revenue model - proposed amendments*, 12 March 2019, p. 3.

35 Where a change is made by the ATO within a regulatory control period (after a final decision), a 'pass-through' adjustment may be applied if it meets the relevant criteria in the NER.

36 Jemena, *Feedback on Proposed Amendments to the Post Tax Revenue Model*, 12 March 2019, p. 1.

37 AER, *Final report: Review of regulatory tax approach*, December 2018, p. 74.

38 AEMC, *Review into the scope of economic regulation applied to covered pipelines - Final Report*, March 2019.

service providers must use as part of its access arrangement proposals.[39] We consider that the option to depreciate the existing TAB using the DV method to address JGN's current unique situation can be considered as part of that model development process.

ENA and TransGrid also noted that the PTRM may require further amendments for application in following regulatory control periods to accommodate the separate 'asset pools' created from switching to the DV method for new assets.[40] The PTRM will need to be able to differentiate the legacy TAB to continue to be depreciated using the SL method, and the assets added to the TAB in the first regulatory control period in respect of capex to be depreciated using the DV method.

We agree that the PTRM will need to accommodate this split as a result of switching to the DV method for new assets for application in following regulatory control periods. We also note that the amended PTRM now includes an input for 'year-by-year tracking depreciation on the opening TAB' that could be used to cater for this issue. Depreciation of the opening TAB can be calculated outside the PTRM and include separate tax depreciation of the 'asset pools', and input to the PTRM using the 'year-by-year tracking depreciation' option. As noted in section 1.3, we intend to make the relevant amendments to the RFM to implement these changes at a later stage. As part of that amendment process we intend to include in the RFM a standard approach to apply year-by-year tracking depreciation of the RAB and TAB. This year-by-year tracking depreciation of the TAB will automatically separate the 'asset pools' using different depreciation methods. Year-by-year depreciation of the TAB will also cater for tracking and writing off the residual tax asset value, discussed below.

Treatment of residual tax asset value

Under the DV formula, the value of an asset class is depreciated in perpetuity. This means the residual value of the asset class would not be fully written off unless a constraint is set in the DV formula. In the explanatory statement that accompanied the proposed amended PTRMs we considered the following two options in dealing with this issue:

1. RAB standard asset life as the constraint – Fully depreciate the asset at the end of its RAB standard asset life for each asset class. That is, the residual value is written off at the end of the asset class's economic life.
2. Tax standard asset lives as the constraint – Fully depreciate the asset at the end of its tax standard life for each asset class.

Our proposed amended PTRMs adopted option 1 as our preferred approach, noting that we considered it consistent with ATO treatment of depreciation. The ATO allows an asset to be written off for tax purposes if the business no longer holds or uses the asset.[41] We consider that the RAB standard asset life is set to reflect the economic life of the asset class, while the tax standard asset life does not always reflect this. For example, the statuary cap on certain gas transmission and distribution assets is set at 20 years by the ATO, which can be

39 AEMC, *Review into the scope of economic regulation applied to covered pipelines - Final Report*, March 2019, pp. 101–105.

40 ENA, *Submission to post-tax revenue model - proposed amendments*, 12 March 2019, p. 5; TransGrid, *Submission to post-tax revenue models - April 2019 amendment*, 11 March 2019, p. 1.

41 ITAA, section. 40.295.

much shorter than the economic life of these assets. However, we sought stakeholder comment as part of the explanatory statement on this particular issue.[42]

All submissions received from stakeholders directly addressed this issue. Ausgrid, AGIG and ENA's submissions agreed that—if the residual asset value was to be written-off—the RAB standard asset life was a better estimate of the effective life than the tax standard asset life.[43] However, many submissions suggested the AER consider a third option of not writing off the residual tax asset value at the end of its economic life.[44]

The submissions from ENA, CPUE, Jemena and TransGrid noted that not writing off the residual tax value more closely reflects actual business practice, and the alternative involves tracking the life of each year of capex. They also noted that this approach was consistent with that adopted by other regulators that applied the DV method to tax depreciation.

We considered the option of allowing the asset's tax value to depreciate in perpetuity prior to making our proposed amendments to the PTRMs. Under this approach, however, there remains a small proportion of an asset's tax value that is undepreciated well beyond its economic life.[45] We consider it reasonable for the full tax value associated with an asset's cost to be shared by consumers benefitting from its use reflecting the expected economic life. We note that—as discussed in the final report of the tax review—due to the lack of compensation for the time value of money in the TAB, the net present value (NPV) of tax depreciation for a shorter-lived tax asset (depreciation constraint applied) will be greater than that with a longer tax asset life (no constraint).[46] However, the difference between applying the RAB standard asset life as the constraint and applying no constraint has an immaterial impact on the overall NPV of the tax depreciation.[47]

ENA and CPUE also suggested in their submissions that writing off the residual tax value at the end of the economic life may be inconsistent with tax law.[48] We understand that in practice businesses generally do not track the life of assets to determine when to write-off—or apply balancing adjustments to—the residual value. However, we do not consider this implies that this approach is inconsistent with tax law. In modelling the benchmark tax costs

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42 AER, *Explanatory statement - Proposed amended electricity transmission and distribution network service providers' post-tax revenue models*, January 2019, p. 14.

43 Ausgrid, *Submission: Post-tax revenue models (transmission and distribution) - April 2019*, 12 March 2019, p. 1; AGIG, *Submission to post-tax revenue model - proposed amendments*, 7 March 2019, p. 1; ENA, *Submission to post-tax revenue model - proposed amendments*, 12 March 2019, p. 4.

44 AGIG, *Submission to post-tax revenue model - proposed amendments*, 7 March 2019, p. 1; CitiPower, Powercor and United Energy, *Submission: Post-tax revenue models consultation*, 12 March 2019, pp. 1-2; ENA, *Submission to post-tax revenue model - proposed amendments*, 12 March 2019, p. 4; Jemena, *Feedback on Proposed Amendments to the Post Tax Revenue Model*, 12 March 2019, p. 1; TransGrid, *Submission to post-tax revenue models - April 2019 amendment*, 11 March 2019, p. 1.

45 For example, for an asset with an economic life of 40 years and RAB and TAB standard lives equal to this, almost 5 per cent of its value remains undepreciated after 60 years—20 years after it reached the end of its economic life.

46 AER, *Final report: Review of regulatory tax approach*, December 2018, p. 61.

47 The difference in NPV of tax depreciation for an asset with a 40 year economic life is around 1.2 per cent over 100 years. This is based on assuming: $100 capex, 2.5 per cent inflation, 7.0 per cent nominal rate of return, 40 year RAB and TAB standard asset life.

48 CitiPower, Powercor and United Energy, *Submission: Post-tax revenue models consultation*, 12 March 2019, pp. 1-2; ENA, *Submission to post-tax revenue model - proposed amendments*, 12 March 2019, p. 4.

in our regulatory models, certain assumptions are required. This may include the categorisation of assets into asset classes—which may differ from the actual asset categories of a business—as well as when an asset ceases to be used. As discussed in our explanatory statement, the ATO allows an asset to be written off for tax purposes (apply a balancing adjustment) if the business no longer holds or uses the asset.[49] Our regulatory model adopts the RAB standard asset life as reflective of that asset's economic life. Hence, the asset is expected to not be capable of being used beyond that timeframe, and therefore the tax legislation allows for a deduction of the residual value of this asset.[50]

On balance, we consider our approach is consistent with tax legislation, given the regulatory assumptions of the economic life of assets. Maintaining consistency with tax legislation without writing off the residual value at the end of the assets' economic life would require implementing a method for reallocating assets to a low-value pool for accelerated depreciation, as noted in the ENA submission.[51] Implementing this approach would require its own assumptions around asset classification and value thresholds for transfer, and significantly increase the complexity of the modelling for little overall impact.

AGIG, CPUE and ENA submitted that writing off the asset's residual tax value at the end of its economic life could result in a step increase in the tax depreciation for the asset in the final year of its economic life.[52] They noted that depreciating the asset in perpetuity would avoid this potential increase. We consider that this is only an issue when viewed on an isolated basis in considering an asset's tax depreciation profile. This potential step increase will be smoothed out by the overall capex program whereby various streams of capex would be reaching the end of their economic life in various years. We also note that this volatility is isolated to the tax depreciation deduction used to calculate the forecast tax allowance, which represents on average 3 to 4 per cent of the total building block revenues. Any change in prices/revenues as a result of this volatility is not likely to be material and would be further addressed via the total revenue smoothing function.

Figure 2.1 compares the forecast tax allowance (and associated NPV) where the RAB standard asset life is used as the constraint at which the residual value is written off, and where no constraint is applied and the asset is depreciated in perpetuity. The analysis shows a minor decrease in the regulatory tax allowance in year 41—when the residual value is deducted—after which the tax allowance is slightly higher than the 'no constraint' option. Over the 60 years of the analysis, the difference in the NPV of the tax allowance is less than 0.1 per cent.

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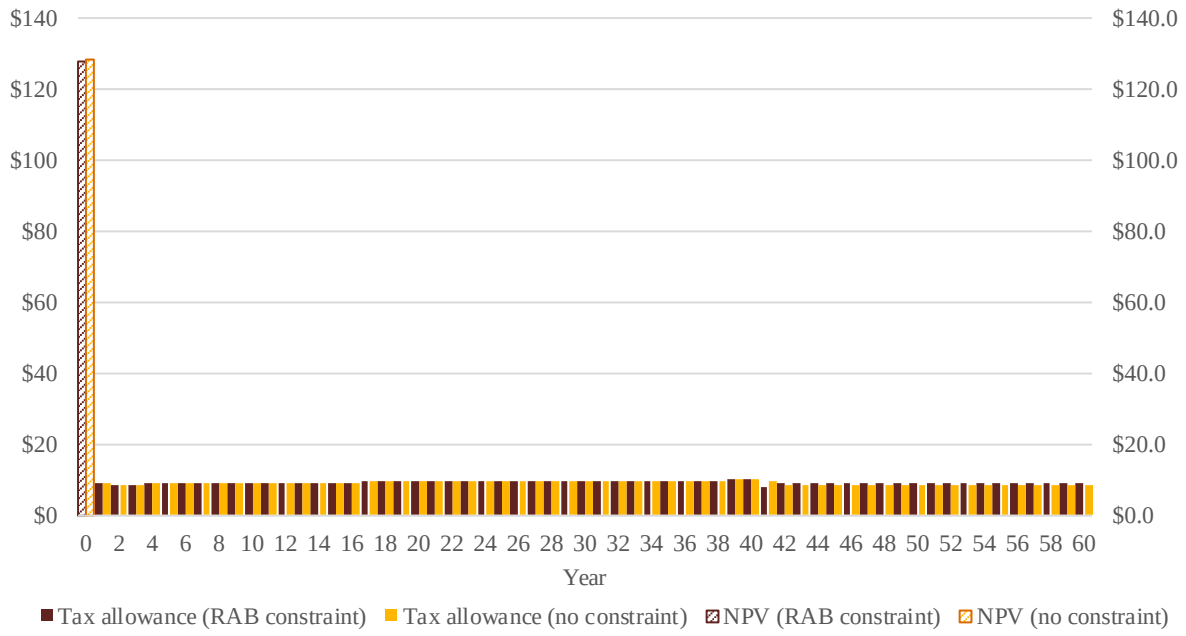
49 ITAA, section. 40.295; AER, *Explanatory statement - Proposed amended electricity transmission and distribution network service providers' post-tax revenue models*, January 2019, p. 13.

50 Less any termination value of the asset.

51 ENA, *Submission to post-tax revenue model - proposed amendments*, 12 March 2019, p. 4.

52 AGIG, *Submission to post-tax revenue model - proposed amendments*, 7 March 2019, p. 1; CitiPower, Powercor and United Energy, *Submission: Post-tax revenue models consultation*, 12 March 2019, pp. 1-2; ENA, *Submission to post-tax revenue model - proposed amendments*, 12 March 2019, p. 4.

Figure 2.1 Forecast tax allowance comparison – RAB constraint applied vs no constraint ($ nominal)



Source: AER analysis.
Note: This is based on the following:
Inflation = 2.50%, Capex = $100 in year 1, RAB life = 20 years, TAB life = 20 years, nominal rate of return = 7.00%, Other revenue = $50 annually.

ENA, CPUE, Jemena and TransGrid all noted in their submissions that our treatment of writing off the residual tax value requires tracking the annual streams of capex to determine when the residual should be deducted.[53] As discussed above, when we amend the RFMs to implement these related changes to the PTRMs we intend to include a standard approach to apply year-by-year tracking depreciation of the TAB. The year-by-year tracking of tax depreciation will assist in separating the DV and SL 'asset pools', as well as automatically track the age of each annual stream of capex for tax purposes to determine when the residual tax value should be deducted.

For these reasons, we consider that no change to our proposed amended PTRMs is required with respect to the treatment of the residual tax asset value.

Exceptions to the diminishing value method

Our amended PTRMs provide for asset classes 47, 48, 49 and 50 to be depreciated using the SL method for tax purposes rather than the DV method. These asset classes are to contain new expenditure associated with assets that are to be depreciated using the SL

53 CitiPower, Powercor and United Energy, *Submission: Post-tax revenue models consultation*, 12 March 2019, pp. 1-2; ENA, *Submission to post-tax revenue model - proposed amendments*, 12 March 2019, p. 4; Jemena, *Feedback on Proposed Amendments to the Post Tax Revenue Model*, 12 March 2019, p. 1; TransGrid, *Submission to post-tax revenue models - April 2019 amendment*, 11 March 2019, p. 1.

method (buildings, in-house software and equity raising costs). The reasons for these exceptions are explained below.

Buildings – We consider that capex associated with buildings capital works as defined under section 43.20 of the ITAA and in ATO taxation ruling 97/25 is not subject to the DV method of depreciation.[54] The ITAA specifies that the SL method is to be used to depreciate these assets and the specific rates at which these assets should be depreciated for tax purposes.[55;56] We consider that if an NSP's forecast capex program includes expenditure related to buildings, it may need to separately identify the relevant capex and allocate this to one of the three asset classes that calculate depreciation for tax purposes using the SL method (asset classes 47–49).

In-house software – As discussed in the final report of the tax review, assets qualified under section 40.72 of the ITAA (e.g. intangible depreciable assets) are not subject to the DV method of depreciation.[57] While section 40.72 of the ITAA provides a list of assets that are not subject to the DV method,[58] most assets from this list appear to be not relevant to the regulated NSPs, with the exception of in-house software assets.[59] Therefore, we consider that if an NSP's forecast capex program includes expenditure related to in-house software, it can allocate this to one of the three asset classes that calculate depreciation for tax purposes using the SL method (asset classes 47–49). Section 40.95 also specifies an effective life of 5 years should be used to depreciate these assets for tax purposes.[60] We note that the majority of the NSPs have an IT related asset class which may include assets associated with IT hardware, in-house and/or off-the-shelf software. Therefore, an NSP may need to separately identify capex related to in-house software within this asset class and reallocate to the new SL asset class if it wishes to adopt the SL tax depreciation for capex associated with in-house software.

Equity raising costs – We consider that the benchmark allowance for equity raising costs should not be depreciated using the DV method as the ATO's taxation ruling 2011/6 and section 40.880 of the ITAA require that businesses claim deductions on equity raising costs in equal proportions over a five-year period.[61] The 'Equity raising costs' asset class is an existing class in the distribution and transmission PTRMs, which applies the SL method of tax depreciation. Therefore, we have maintained this approach (for asset class 50) in the amended PTRMs.

In the explanatory statement that accompanied the proposed amended PTRMs we requested stakeholder comment on whether any other asset classes should not be subject

54 ITAA, section 43.20; ATO, *Taxation Ruling 97/25*, July 2017.
55 ITAA, sections 43.15, 43.140 and 43.210.
56 Different deduction rates may be applicable (2.5% or 4%) depending on the date on which construction began, the type of capital works, and the manner of use; ATO website: https://www.ato.gov.au/business/depreciation-and-capital-expenses-and-allowances/capital-works-deductions/.
57 AER, *Final report: Review of regulatory tax approach*, December 2018, p. 73; ITAA 1997, section 40.72.
58 This list includes in-house software, items of intellectual property, spectrum licences, datacasting transmitter licences and, telecommunications site access rights.
59 As defined under ITAA 1997, section 995.1 and ATO, *Taxation Ruling 2016/3*, October 2018.
60 ITAA, section 40.95(7).
61 ITAA, section 40.880; ATO, *Taxation Ruling 2011/16*, July 2016.

to the DV method of tax depreciation.[62] AGIG submitted that it did not consider there were any asset classes, other than those noted by the AER, which should not be subject to the DV method.[63] Additional consultation with the NSPs currently undergoing revenue resets to be finalised by April 2019 also confirmed that there were no other asset classes that should not be subject to the DV method of tax depreciation. However, in consultation with these NSPs, we consider it would be beneficial to include an additional asset class that uses the SL method for tax depreciation of capex to provide further flexibility in the allocation of assets not subject to the DV method for tax purposes.[64]

Our final amended PTRMs therefore include an additional fourth asset class that can be used for assets that are to be depreciated using the SL method for tax purposes.[65] The asset class may be used where further disaggregation of expenditures associated with buildings or in-house software is required. For example, where assets are separated into system and non-system assets and have different effective lives for RAB purposes. We consider it appropriate to include this asset class to provide the PTRM with the flexibility to accommodate this situation.

2.3 Changes to accommodate the year-by-year tracking depreciation approach

The version 3 PTRMs calculated the SL depreciation on existing assets in the RAB/TAB based on a 'weighted average remaining lives' (WARL) approach. This approach uses a WARL for each asset class—calculated in the RFM and used as inputs to the PTRM—to calculate the depreciation schedules of the opening RAB/TAB inputs to the PTRM. This approach results in the opening RAB/TAB being depreciated at a constant rate over its (weighted average) remaining life.

In recent decisions, NSPs have proposed the year-by-year tracking approach to calculate the SL depreciation on existing assets.[66] Under this approach, the capex for each year of a regulatory control period is depreciated separately. We have accepted the year-by-year tracking approach because it meets the requirements of the NER in that it will result in depreciation schedules that:

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62 AER, *Explanatory statement - Proposed amended electricity transmission and distribution network service providers' post-tax revenue models*, January 2019, p. 15.

63 AGIG, *Submission to post-tax revenue model - proposed amendments*, 7 March 2019, p. 1.

64 The proposed amended PTRMs provided three asset classes (48 to 50) to be depreciated using the SL method for tax purposes.

65 This is reflected in asset class 47 in the final amended PTRMs.

66 AER, *Draft decision: Power and Water Corporation distribution determination 2019–24 – Attachment 4*, September 2018; AER, *Draft decision: TasNetworks transmission determination 2019–24 – Attachment 4*, September 2018; AER, *Draft decision: TasNetworks distribution determination 2019–24 – Attachment 4*, September 2018; AER, *Final decision, ElectraNet transmission determination 2018–23 – Attachment 5*, April 2018; AER, *Draft decision, AusNet Services transmission determination 2017–22 – Attachment 5*, July 2016; AER, *Final decision: Jemena distribution determination 2016–20 – Attachment 5*, May 2016; AER, *Final decision: Powercor distribution determination 2016–20 – Attachment 5,* May 2016; AER, *Final decision: United Energy distribution determination 2016–20 – Attachment 5*, May 2016; AER, *Final decision: CitiPower distribution determination 2016–20 – Attachment 5*, May 2016; AER, *Final decision: AusNet Services distribution determination 2016–20 – Attachment 5*, May 2016; and AER, *Final decision, SA Power Networks distribution determination 2015–20 – Attachment 5*, October 2015.

- reflect the nature of the assets and their economic life[67]
- ensure that total depreciation (in real terms) equals the initial value of the assets[68]
- allows the economic lives of existing assets to be consistent with those determined on previous decisions.[69]

The version 3 PTRMs did not account for the year-by-year tracking approach to calculate the depreciation of existing assets in a seamless manner. Instead, ad hoc adjustments were required to be made to the template PTRM. That is, implementing this approach required 'hard-coding' the total amounts of year-by-year tracking depreciation on the opening RAB/TAB directly in the *'Assets'* worksheet for each asset class. This results in changing the original depreciation formula in certain cells. We prefer to avoid approaches that require making amendments to standardised models because it risks introducing potential errors.

Accordingly, we have added two new options (i.e. drop-down menus) in the *'PTRM input'* worksheet in the amended PTRMs to allow the user to select either the WARL or year-by-year tracking approach to calculate the forecast SL depreciation on the opening RAB/TAB. The formulae for the forecast SL depreciation on opening RAB/TAB in the '*Assets'* worksheet have consequently been amended to accommodate either of these options. Further, we have also created new input sections for recording the year-by-year tracking depreciation amounts for the opening RAB/TAB if the year-by-year tracking option is selected.[70] Where the WARL approach is selected, the PTRM calculate the forecast SL depreciation based on the recorded remaining asset lives. Where the year-by-year tracking approach is selected, the PTRM will not make this calculation and instead use the recorded depreciation amounts for the opening RAB/TAB.

We consider these amendments to the PTRMs are necessary to improve transparency when applying the year-by-year tracking depreciation approach. Furthermore, these amendments remove the need for manual ad-hoc adjustments to the formulae in the PTRM and reduces the risk of errors.

There were no issues raised in stakeholder submissions regarding the inclusion and implementation of the year-by-year tracking option in the proposed amended PTRMs. Ausgrid's submission welcomed the incorporation of the year-by-year tracking functionality in the PTRMs.[71] No additional modifications have been made for this matter in the final amended PTRMs.

2.4 Other minor changes

We have made a few minor presentational and other minor operational changes to the PTRMs. These include:

67 NER, cll. 6.5.5(b)(1) and 6A.6.3(b)(1).
68 NER, cll. 6.5.5(b)(2) and 6A.6.3(b)(2).
69 NER, cll. 6.5.5(b)(3) and 6A.6.3(b)(3).
70 These inputs should be entered in real (beginning of year) dollar terms for the opening RAB and nominal dollar terms for the opening TAB.
71 Ausgrid, *Submission: Post-tax revenue models (transmission and distribution) - April 2019*, 12 March 2019, p. 2.

- The amended distribution PTRM has been expanded to accommodate up to 50 asset classes. This is an increase from the 30 asset classes in the version 3 of the distribution PTRM. This makes the distribution PTRM consistent with the transmission PTRM in terms of the capability to handle the same number of asset classes. We consider that this is a sufficient number of asset classes to meet future requirements for most DNSPs.
- The amended PTRMs remove the caution messages in the *'PTRM input'* worksheet of the current version of PTRMs that states that the return on equity input must be rounded to one decimal place. This is because the recent Rate of return instrument states that 'all calculations made pursuant to this instrument must be done in Microsoft Excel or a software program that undertakes equivalent calculations, and must be unrounded'.[72]
- The amended PTRMs include other minor amendments relating to formatting or labelling which are not consequential to the operation of the PTRM (such as corrections to spelling or grammatical errors in cell notes).

The submission from CPUE also noted that the instruction comment/note accompanying the tax loss carried forward input cell did not reflect the tax review final report.[73] We have amended this instruction in the 'PTRM input' worksheet and handbook to reflect that this input should be sourced from the approved PTRM for the previous regulatory control period.

Jemena and ENA's submissions both noted some minor formulae errors and inconsistencies in the proposed amended PTRMs.[74] We have corrected these formulae where relevant. Both submissions also recommended that the AER consider developing a financeability framework with stakeholders.[75] We note that the recent final decision on our *Rate of return* review discussed the issue of financeability. We consider that review provided the appropriate context to consider a financeability framework, instead of this model amendment process for implementing the tax review findings. Our rate of return final decision maintained the draft decision not to use financeability assessments to inform our rate of return, noting that there is no clear guidance on the assumptions that should be used in any financeability assessment as a cross check on the benchmark parameters.

Jemena also submitted that the revenue cap X-factors should be linked to the price-cap X-factors, as this was the case for its Victorian DNSP determination.[76] The equalisation of smoothed revenues for some of the Victorian DNSPs was done on an ad-hoc basis for additional clarity as all tariff inputs for a functioning weighted average price cap control mechanism was provided—even though the DNSPs were subject to a revenue cap control mechanism. This approach is generally not the case, as under a revenue cap, this tariff detail is not required in the PTRM. We do not consider it necessary to link the X-factors for both control mechanisms. Revenue equalisation between mechanisms can be done for presentational purposes where appropriate and where relevant data has been provided.

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72 AER, *Rate of Return Instrument*, December 2018, p. 19.

73 CitiPower, Powercor and United Energy, *Submission: Post-tax revenue models consultation*, 12 March 2019, p. 2.

74 ENA, *Submission to post-tax revenue model - proposed amendments*, 12 March 2019, p. 5; Jemena, *Feedback on Proposed Amendments to the Post Tax Revenue Model*, 12 March 2019, p. 2.

75 ENA, *Submission to post-tax revenue model - proposed amendments*, 12 March 2019, pp. 3-4; Jemena, *Feedback on Proposed Amendments to the Post Tax Revenue Model*, 12 March 2019, p. 2.

76 Jemena, *Feedback on Proposed Amendments to the Post Tax Revenue Model*, 12 March 2019, p. 2.

Appendices

The appendices include the final amended PTRMs and handbooks. There is a high level summary of changes for the version 4 PTRMs in the '*Intro*' worksheet and a detailed list of changes.

Appendix A: Post-tax revenue model (distribution)

Appendix B: Post-tax revenue model (transmission)

Appendix C: Post-tax revenue model handbook (distribution)

Appendix D: Post-tax revenue model handbook (transmission)

Appendix E: List of changes from previous post-tax revenue models