# Final decision

## Amendment

## Electricity distribution network service providers

## Roll forward model (version 2)

15 December 2016

AUSTRALIAN ENERGY REGULATOR

Inquiries about this publication should be addressed to:

Australian Energy Regulator
GPO Box 520
Melbourne Vic 3001

Tel: (03) 9290 1444
Fax: (03) 9290 1457

Email: AERInquiry@aer.gov.au
AER Reference: 58930

# Contents

# Shortened forms

| Shortened form | Extended form |
|---|---|
| AER | Australian Energy Regulator |
| Capex | capital expenditure |
| CESS | capital expenditure sharing scheme |
| CPI | consumer price index |
| DMS | data management system |
| DNSP | distribution network service provider |
| NEM | National Electricity Market |
| NER | National Electricity Rules |
| NPV | net present value |
| PTRM | post-tax revenue model |
| RAB | regulatory asset base |
| RFM | roll forward model |
| TAB | tax asset base |
| TNSP | transmission network service provider |
| WACC | weighted average cost of capital |
| WARL | weighted average remaining lives |

# 1 Introduction

The Australian Energy Regulator (AER) is responsible for the economic regulation of direct control services provided by distribution network service providers (DNSPs) in the National Electricity Market (NEM), in accordance with the National Electricity Rules (NER). We make a building block determination for each DNSP that sets out its annual revenue requirement for each regulatory year within a regulatory control period.[1]

The regulatory asset base (RAB) is a key determinant of revenue under the building block approach.[2] We prepare and publish a roll forward model (RFM) for the RAB of DNSPs.[3]

The first version of the RFM for DNSPs was published in June 2008.[4] To ensure that the RFM remains fit for purpose, we amend or replace the DNSP RFM when necessary.[5] In August 2016 we commenced consultation on several proposed amendments to the DNSP RFM, in response to changes in the regulatory framework.[6] This decision explains our final position on the amendments that have been adopted for the new DNSP RFM, which is labelled version 2.

There is a separate version of the RFM for transmission network service providers (TNSPs). Our amendments to the DNSP RFM bring it into close alignment with the most recent version of the TNSP RFM, which is version 3 of that model. The two RFMs (distribution and transmission) are designed to work in conjunction with the relevant post-tax revenue models (PTRMs). The publication dates and version numbers for each of the four key models are shown in Table 1.

### Table 1 Current published electricity models as at December 2016

| Model | Sector | Publication date | Version number |
|---|---|---|---|
| Post-tax revenue model | Transmission | January 2015 | Version 3 |
| Post-tax revenue model | Distribution | January 2015 | Version 3 |
| Roll forward model | Transmission | October 2015 | Version 3 |
| **Roll forward model** | **Distribution** | **December 2016** | **Version 2** |

1 NER, cll. 6.4.1, 6.4.3..
2 NER, cll. 6.4.3(a)(1), 6.5.1(a).
3 NER, cl. 6.5.1(b).
4 AER, *Final decision, Electricity distribution network service providers, Roll forward model*, 26 June 2008; available at http://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/roll-forward-model-2008.
5 NER, cl. 6.5.1(c).
6 Available at http://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/roll-forward-model-distribution-2016-proposed-amendments/initiation.

We will commence a new review of the distribution and transmission PTRMs in respect of the method for estimating expected inflation. This will involve a separate consultation process in accordance with the relevant rules.[7]

## 1.1 What does the RFM do?

This RFM establishes the method used to roll forward the RAB—that is, increase or decrease from the previous value:[8]

- from one regulatory control period to the next regulatory control period
- from one regulatory year to the next regulatory year in the same regulatory control period.

The closing RAB value for a regulatory control period as calculated by the RFM becomes the opening RAB to be used for the purposes of making a building block determination for the next regulatory control period.

The RAB values from the RFM are inputs into the PTRM, where they are rolled forward from one regulatory year to the next regulatory year on a forecast indicative basis. They are used in the PTRM as part of the calculation of the annual revenue requirements.

The RFM deals with many aspects of RAB estimation, including:[9]

- establishment of the opening RAB for a regulatory control period
- adjustments for prudent and efficient capital expenditure (capex)
- the depreciation approach based on forecast or actual capex
- how the (forecast) roll forward should occur within the regulatory control period.

The roll forward of the RAB from year-to-year will reflect:

- additions for actual capex, net of customer contributions
- reductions for the disposal value of assets
- reductions for depreciation
- indexation for actual inflation
- adjustment for the difference between estimated and actual capex for a previous regulatory control period
- other adjustments for removal or addition of assets made under certain circumstances (such as a change in service classification) in accordance with the NER.

7 NER, cl.6.4.1(b).
8 NER, cl. 6.5.1(e).
9 NER, cl. S6.2.

## 1.2 How was the amended RFM developed?

We wanted all stakeholders to have opportunity to consider our proposed changes to the RFM and make written comments in response. On 31 August 2016, we commenced the consultation process by publishing:[10]

- the proposed amended model
- a handbook to accompany the proposed amended model
- an explanatory statement, setting out the provision of the NER under which the model was proposed to be prepared, and the reasons for the proposed amended model.[11]

We asked stakeholders to make submissions on the proposed amendments on or before 13 October 2016.[12] We received four written submissions by this date, from:

- AusNet Services[13]
- Australian Gas Networks (AGN)[14]
- Jemena Electricity Networks (JEN)[15]
- SA Power Networks, CitiPower and Powercor (SCP) as a joint submission.[16]

We also received one late submission from the Energy Networks Association (ENA).[17] We have carefully evaluated the contents of those submissions as part of finalising the amendments to the RFM.

The amended RFM is published with this decision, in accordance with clause 6.5.1 of the NER.[18] This final decision sets out our reasons for adopting these amendments, including the changes made since the August draft version in response to submissions.

Version 2 of the DNSP RFM will therefore be the template for all subsequent regulatory determinations for electricity DNSPs.

---

10 NER, cl. 6.16(b).

11 AER, *Explanatory statement, Proposed amendment: Electricity distribution network services providers, Roll forward model (version 2)*, 31 August 2016.

12 This was a submission period of 30 business days. See NER, cl. 6.16(c).

13 AusNet Services, *Letter re: Proposed amendments to the electricity distribution roll forward model (RFM)*, 13 October 2016.

14 Australian Gas Networks, *Untitled letter*, 13 October 2016.

15 Jemena Electricity Networks, *Letter re: Response to proposed amendments to the distribution roll forward model*, 13 October 2016.

16 SA Power Networks/CitiPower/Powercor, *Letter re: Proposed amendment to the roll forward model*, 13 October 2016.

17 Energy Networks Association, *Letter re: Roll forward model (distribution) - 2016 proposed amendments - Proposal for future collaborative work on treatment of inflation*, 25 October 2016; and the attached report Frontier Economics, *Comment on treatment of inflation in the AER's PTRM and the RFM, A report prepared for the Energy Networks Association*, October 2016.

18 The period between publication of the proposed amended model and final amended model has been less than 80 business days. See NER, cl. 6.16(e).

## 1.3 Why are we updating the RFM?

Version 2 of the DNSP RFM is necessary to provide flexibility to implement recent changes to the regulatory framework.

First, the amendments reflect the AER's new *Capital expenditure incentive guideline*, which sets out the use of forecast depreciation (based on forecast capex) to roll forward the RAB in conjunction with the application of a capital expenditure sharing scheme (CESS).[19] Version 1 of the DNSP RFM used only an actual depreciation approach (based on actual capex) to roll forward the RAB. Under this approach the depreciation deducted from the RAB depended on the actual capex incurred and rolled into the RAB during the regulatory control period, rather than that forecast at the time of the reset. The actual depreciation approach reflected, in part, the fact that there was no capex incentive scheme. Version 2 of the DNSP RFM has been modified to allow a forecast or actual depreciation approach to be used to roll forward the RAB. The forecast depreciation approach deducts the real forecast depreciation approved at the time of the previous reset from the RAB, and does not adjust for actual capex. This matches what the DNSP received in real depreciation allowed during the regulatory control period.

This policy change also has consequential impacts on the way remaining asset lives are calculated in the RFM. The amendments to the RFM implement our preferred approach to calculating remaining asset lives, known as weighted average remaining lives (WARL).

Second, the amendments reflect the AER's *Rate of return guideline*, which allows for an annual update of the return on debt.[20] Version 2 of the DNSP RFM has been modified to accommodate inputs for different annual rates of return.

Version 2 of the DNSP RFM also allows us to make changes to the spreadsheet so that it can be automatically integrated into the AER's data management system (DMS). The DMS allows us to centrally store and easily retrieve data from all our regulatory processes. These changes do not affect the functionality of the spreadsheet.

## 1.4 What are the key changes?

Section 2 explains in detail the changes made in the final amended RFM:

- Forecast or actual depreciation in the RAB roll forward (section 2.1)
- Remaining asset lives (section 2.2)
- End of period adjustments (section 2.3)
- Annual weighted average cost of capital (WACC) updates (section 2.4)
- Input worksheet for the AER DMS (section 2.5)
- Use of actual inflation (section 2.6)
- Presentational and other functional improvements (section 2.7).

19 AER, *Better regulation, Capital expenditure incentive guideline*, November 2013, pp. 21–22.
20 AER, *Better regulation, Rate of return guideline*, December 2013, p. 19.

Section 3 discusses two issues mentioned in our August 2016 *Explanatory statement* and submissions from stakeholders, but which have not resulted in changes to the final amended RFM:

- Expected inflation (section 3.1)
- Exclusion of inefficient capex (section 3.2).

# 2 Amendments

This section sets out our amendments to the DNSP RFM and the associated handbook. Table 2 shows which worksheets have been amended or added.[21]

A summary of changes is provided in the *'Intro'* worksheet to the RFM.

### Table 2 Changes to the distribution RFM worksheets

| Old RFM worksheets | Status | New RFM worksheets |
|---|---|---|
| Intro | Minor changes only | Intro |
| N/a | Added | DMS input |
| Input | Amended | RFM input |
| Adjustment for previous period | Amended | Adjustment for previous period |
| Actual RAB roll forward | Amended | RAB roll forward |
| Total actual RAB roll forward | Amended | Total RAB roll forward |
| Tax value roll forward | Amended | TAB roll forward |
| N/a | Added | RAB remaining lives |
| N/a | Added | TAB remaining lives |
| N/a | Added | PTRM input summary |

The final amended RFM and handbook are at appendices A and B respectively. To assist stakeholders to identify all changes from the previous version, there is detailed change log at appendix C.

The changes are now discussed in more detail.

## 2.1 Forecast or actual depreciation in RAB roll forward

Version 1 of the DNSP RFM calculated depreciation based on actual capex for use in the RAB roll forward. This approach is referred to as an 'actual depreciation' approach. The use of actual depreciation reflected in part that there was no capex incentive schemes applied in the past. Under an actual depreciation approach the DNSP keeps the difference between actual and forecast depreciation over the regulatory control period if it can reduce its actual capex below the amount that was forecast.[22]

21 Minor changes relate to formatting, labelling or formula updates which, while noted for completeness, are not consequential to the operation of the RFM.

22 The effect is symmetrical, so if actual capex is above forecast capex the DNSP will be worse off by the difference between actual and forecast depreciation.

However, in recent decisions and based on the development of our *Capital expenditure incentive guideline*, we applied the CESS and decided that in future a 'forecast depreciation' approach—where the real forecast depreciation amount (based on forecast capex) approved at the last reset for the DNSP—be used to roll forward the RAB.[23] Using the forecast depreciation amount to roll forward the RAB means a service provider does not receive any windfall gain/loss in terms of depreciation from actual capex being different from that forecast.[24] The forecast depreciation subtracted from the RAB therefore reflects the amount that was recovered by the DNSP during the regulatory control period.

Accordingly, we have created a section for recording forecast depreciation inputs in the *'RFM input'* worksheet of the amended RFM. The formulae in the *'RAB roll forward'* and *'Total RAB roll forward'* worksheets have also been amended to allow either the forecast depreciation approach or actual depreciation approach to be used to roll forward the RAB. The forecast depreciation amounts are entered in real terms, so that actual inflation is applied as part of the RAB roll forward, consistent with other components of the RAB.

We have also preserved the actual depreciation approach in the RFM. This is because the NER requires that the decision about whether to use forecast or actual depreciation in establishing the regulatory asset base be made at a later stage—that is, as a constituent decision in the relevant regulatory determination.[25]

The implementation of forecast depreciation in the amended DNSP RFM aligns with the most recent version of the TNSP RFM (version 3).

These modifications were already included in the proposed RFM we published for consultation in August 2016. The submission from JEN was the only one to directly address this issue and it was supportive of our proposed changes.[26] No additional modifications have been made for this issue in the final amended RFM.

## 2.2 Remaining asset lives

Version 1 of the DNSP RFM took as an input the remaining asset life for each different asset class as at the start of the regulatory control period.[27] These remaining asset lives are used

23 For example, see the discussion on the choice of depreciation approach for the Victorian DNSPs in AER, *Final framework and approach for the Victorian electricity distributors, Regulatory control period commencing 1 January 2016*, 24 October 2014, pp. 121–126; AER, AER, *Preliminary decision, United Energy distribution determination, 2016 to 2020, Attachment 2 – Regulatory asset base*, October 2015, pp. 2-17 to 2-18; and AER, *Final decision, United Energy distribution determination, 2016 to 2020, Attachment 2 – Regulatory asset base*, May 2016, p. 2-13.

24 The tax asset base is rolled forward using depreciation based on actual capex, consistent with the tax framework.

25 NER, cl. 6.12.1(18).

26 JEN, *Letter re: Response to proposed amendments to the distribution roll forward model*, 13 October 2016, p. 2.

27 For each asset class, the remaining asset life is the time left until the asset is no longer economically viable (or alternatively, when the return of capital is complete). When capex is first incurred—that is, when an asset is new—the remaining asset life is equal to the standard asset life. With each passing year, the remaining life will also decrease by one year. However, since each asset class will generally include capex incurred in many different years—that is, a mixture of assets with different ages—the calculation of average remaining asset life can be complex, and there are a number of different approaches available.

to calculate straight-line depreciation of existing assets and then the return of capital (depreciation) building block.[28] These inputs remain in the final amended model.

However, the previous version of the DNSP RFM did not calculate the remaining asset lives as at the end of the regulatory control period. These values are needed in order to populate the inputs for the PTRM reflecting the start of the next regulatory control period. In practice, because these calculations were already included in the TNSP RFM, many DNSPs would insert the relevant worksheet from the TNSP RFM into the DNSP RFM.

Accordingly, we addressed the calculation of remaining asset lives in the proposed RFM we published in August 2016. We inserted two new worksheets, '*RAB remaining lives*' and '*TAB remaining lives*' for this purpose. The underlying calculations used our standard approach, known as weighted average remaining lives (WARL), to produce remaining asset lives for each asset class at the end of the regulatory control period.[29] These worksheets align with those in the most recent version of the TNSP RFM (version 3).[30]

The two submissions that directly addressed this issue, from SCP and JEN, did not agree with our proposed changes. These submissions expressed a preference for an alternative approach to calculating depreciation of existing assets, known as year-by-year tracking.[31] SCP noted that a DNSP has flexibility to propose its preferred depreciation schedule (incorporating the calculation of remaining asset lives) when it lodges its regulatory proposal, and the AER's discretion to overrule this approach is limited.[32] They submitted that the new worksheets might be left in the RFM as largely blank templates, where the service provider would insert calculations using their preferred approach to estimating depreciation of existing assets. JEN submitted that the RFM should include calculations for implementing the year-by-year tracking approach to depreciation, noting that its preferred approach to year-by-year tracking bypasses the need for remaining asset life calculations entirely.

We accept that a DNSP may propose their preferred depreciation schedule, and that this may not incorporate the use of WARL to calculate remaining asset lives. If the proposed depreciation schedule meets the relevant rule requirements, we would accept it, in

---

28 The remaining lives also have indirect effects on other building blocks, such as the return on capital and corporate income tax building blocks.

29 The exact form of WARL applied in the proposed RFM is more disaggregated than the WARL previously applied to some NSPs. It preserves the historical record of capex by year (for all expenditure after the adoption of this approach) so that WARL calculations in subsequent regulatory periods can make use of this expenditure profile.

30 See AER, *Final decision, Amendment: Electricity transmission network service providers, Roll forward model (version 3)*, 23 October 2015, pp. 7–9.

31 In recent decisions for these networks the AER accepted proposals to use the year-by-year tracking method (and not WARL) to calculate depreciation of existing assets. See AER, *Final Decision, SA Power Networks determination 2015−16 to 2019−20, Attachment 5 − Regulatory depreciation*, October 2015, pp. 5-10 to 5-17; AER, *Final Decision, CitiPower distribution determination 2016 to 2020, Attachment 5 – Regulatory depreciation*, May 2016, pp. 5-12 to 5-15; AER, *Final Decision: Powercor distribution determination 2016 to 2020, Attachment 5 – Regulatory depreciation*, May 2016, pp. 5-12 to 5-15.

32 NER, cl. 6.5.5(a)(2). SAPN/CitiPower/Powercor, *Letter re: proposed amendment to the Roll Forward Model*, 13 October 2016, pp. 2–3. The same general point is made in the JEN submission.

accordance with clause 6.5.5(a)(2)(i) of the NER.[33] As suggested in the SCP submission, we have included a statement on this in the RFM handbook.

Even with this background, we consider that it is appropriate for the final amended RFM to include the WARL calculation of remaining asset lives. This is because:

- it provides a default option for those DNSPs who wish to use it, thereby minimising regulatory compliance costs and the associated risk of implementation errors[34]
- it prevents a gap in the published regulatory models, since this is a necessary step for populating the PTRM and RFM for the subsequent regulatory control period
- WARL remains our preferred approach to calculating remaining asset lives[35]
- it provides certainty around the exact depreciation approach that will be used by the AER in the event that a DNSP proposal does not meet the rule requirements.

We considered whether it might be possible to include multiple depreciation approaches in the RFM, with the DNSP selecting its chosen approach from a menu of options. Given that both WARL and year-by-year tracking approaches have been approved in recent regulatory determinations, it might be desirable to include inbuilt RFM calculations for at least these two approaches. However, this would increase the complexity of the spreadsheet in proportion to the number of additional options.[36] Further, there is no consensus around a specific year-by-year tracking depreciation model as the optimal implementation of this approach.[37] As noted above, DNSPs would not be constrained to choose from the menu of options, however extensive it might be. On balance, we do not consider that the extra utility would justify the additional complexity at this stage. We may consider the possibility of including alternative NER compliant depreciation approaches in future RFM/PTRM amendment reviews.

Therefore, we have retained the modifications relating to the calculation of remaining asset lives, as per the proposed RFM we published for consultation in August 2016. No additional modifications have been made for this issue in the final amended RFM.

## 2.3 End of period adjustments

The amended RFM includes a new input section in the '*RFM input'* worksheet where end of period adjustments are made. This allows additions to or deductions from specific asset classes at the end of a regulatory control period. As an example, if assets were reclassified

33 NER, cl. 6.5.5.

34 SCP stated that the absence of remaining asset life calculations had not caused problems for DNSPs when using version 1 of the DNSP RFM. However, most DNSPs using this version resolve d the absence by inserting the remaining asset lives worksheets (which used WARL) from the TNSP RFM into the DNSP RFM. Hence, this argument from status quo supports the inclusion of these calculations in the base template, noting that doing so further reduces the risk of implementation error relative to each DNSP doing it separately.

35 For a discussion of why WARL remains our preferred approach, see AER, *Preliminary decision, United Energy determination 2016 to 2020, Attachment 5 – Regulatory depreciation*, October 2015, pp. 5-14 to 5-15.

36 Implementing the option for the year-by-year tracking approach in the RFM may also involve further consequential changes to the PTRM.

37 For example, although AusNet Services, JEN and SA Power Networks/CitiPower/Powercor advocate year-by-year tracking, they implement it in slightly different ways.

from standard control services to alternative control services, an end of period deduction could be used to remove the value of the reclassified assets from the relevant asset class in the RFM. Such an adjustment was not possible in the previous version of the RFM, and so an ad-hoc modification to the base template was required on occasion.

To ensure that the adjustment is accurate, the inputs separately record the value of the asset for RAB and TAB purposes, and the associated remaining life in each case (RAB and TAB).[38] The amended RFM provides for each asset class to have a single remaining asset life for all end of period adjustments.[39] When a new end of period adjustment is made, the RFM calculates the WARL of the end of period adjustment and the residual value (if any) of earlier end of period adjustments. Given the infrequency of these adjustments (at most once per regulatory control period) this provides a reasonable balance between complexity and accuracy.

The treatment of end of period adjustments in the amended DNSP RFM aligns with the most recent version of the TNSP RFM (version 3).

These modifications were already included in the proposed RFM we published for consultation in August 2016. The JEN submission was the only one to directly address this issue and was supportive of our proposed changes.[40] No additional modifications have been made for this issue in the final amended RFM.

## 2.4 Annual WACC updates

The WACC is used as an input to the RFM to:

- account for the timing assumption of capex being rolled into the RAB
- calculate the accumulated return on capital associated with the difference between actual and estimated capex used in the previous regulatory control period.

The amended RFM has been modified so that it can accommodate different annual WACCs over the regulatory control period in the *'RFM input'* worksheet. This change is a consequence of changes to the DNSP PTRM (version 3) in January 2015 providing for annual WACC updates during the regulatory control period.[41] Consistent with the changes to the PTRM, the amended RFM gives effect to the AER's *Rate of return guideline*, which allows for an annual update for the return on debt.[42]

The treatment of WACC in the amended DNSP RFM aligns with the most recent version of the TNSP RFM (version 3).

---

38 The need to specify a remaining asset life is linked to the WARL implementation. See AER, *Final decision: Amendment, Electricity transmission network service providers, Roll forward model (version 3)*, 23 October 2015, p. 8.

39 The amended RFM does not track the remaining asset life of each end of period adjustment separately, as it does for each year of capex.

40 JEN, *Letter re: Response to proposed amendments to the distribution roll forward model*, 13 October 2016, p. 3.

41 Refer to the explanatory statement for the PTRM amendment for background on this change. See AER, *Explanatory statement: Proposed amendment, Electricity transmission and distribution network service providers, Post-tax revenue models (version 3)*, 3 October 2014, pp. 10–11.

42 AER, *Better regulation, Rate of return guideline*, December 2013, p. 19.

These modifications were already included in the proposed RFM we published for consultation in August 2016. The JEN submission was the only one to directly address this issue and was supportive of our proposed changes.[43] No additional modifications have been made for this issue in the final amended RFM.

## 2.5 Input worksheet for AER data management system

We have developed a data management system (DMS) to collect data from regulatory information notices and from the various regulatory models. We have added a new *'DMS input'* worksheet to help our system ingest the relevant data from the RFM. This worksheet has no impact on the operation of the RFM. The worksheet previously labelled *'Input'* has been renamed *'RFM input'* to distinguish the two input worksheets. The DNSP will need to complete both input worksheets when submitting the RFM with its regulatory proposal. The additional information required is minimal (contact details and a few cells identifying the context for the RFM submission).

This worksheet aligns with the most recent version of the TNSP RFM (version 3).

These modifications were already included in the proposed RFM we published for consultation in August 2016. There were no comments on these changes, and no additional modifications have been made for this issue in the final amended RFM.

## 2.6 Use of actual inflation

There are a number of alternative approaches to the treatment of actual inflation in the RFM. Our amended RFM maintains the AER's standard approach (the 'partially-lagged' approach), as used in the previous version of the DNSP RFM and in the current TNSP RFM (version 3). The amended RFM has been modified to add an alternative, the 'all-lagged' approach, so that it can be applied to particular DNSPs where it aligns with their previous historical treatment. In practice, this will allow the five Victorian electricity DNSPs to remain on the all-lagged approach, while all other DNSPs use the partially-lagged approach. The choice of approach is set within the RFM using a drop down function.

We consider that our standard partially-lagged approach meets the requirements of the NER.[44] Modelling of inflation impacts across the entire regulatory process shows that it avoids any systematic bias (under-compensation or over-compensation) in total revenue when actual inflation outcomes differ from expectations. Relative to known alternatives, the partially-lagged approach performs reasonably well at mitigating the magnitude of revenue impacts when inflation outcomes differ from expectations.

In our August 2016 *Explanatory statement*, we highlighted this issue and asked for stakeholder comments.[45] We described three approaches (the partially-lagged, all-lagged and 'un-lagged' approaches) and provided modelling that assessed the overall revenue

43 JEN, *Letter re: Response to proposed amendments to the distribution roll forward model*, 13 October 2016, p. 3.

44 NER, cll. 6.5.1(e)(3) and S6.2.3(c)(4).

45 AER, *Explanatory statement, Proposed amendment: Electricity distribution network services providers, Roll forward model (version 2)*, 31 August 2016, pp. 10–19.

impact when actual inflation outcomes differed from expected inflation. When modelling overall revenue, we looked at the major inflation interactions across the three regulatory elements (PTRM, annual revenue adjustments and RFM). We noted the limitations and assumptions underlying this modelling. In particular, it assumed that the initial expected inflation was consistent with the nominal WACC used in the PTRM. The revenue difference between the approaches did not appear to be large.

In the proposed amended RFM we released with the *Explanatory statement*, we only implemented the partially-lagged approach, but stated that the Victorian DNSPs should be allowed to stay on the all-lagged approach. Our assessment was that the benefit of consistency with past treatment outweighed the detriment of potential greater revenue variation.

Two submissions directly addressed this choice between the partially-lagged, all-lagged and un-lagged approaches. The SCP submission stated that, so long as those networks which were currently on the all-lagged inflation approach were able to stay on this approach, the AER's position was appropriate.[46] The AusNet Services submission stated that the all-lagged approach should be used in the RFM, instead of the partially-lagged approach.[47] To support this claim AusNet Services referenced material it submitted to the AER in July 2015 and January 2016 as part of other regulatory decisions.[48] The AusNet Services submission did not engage with the new evidence in our August 2016 *Explanatory statement.* We consider that the *Explanatory statement* has already dealt with the material referenced by AusNet Services, and sets out why we have not decided to move the RFM template to an exclusively all-lagged approach and apply it to all DNSPs.

However, the AusNet Services submission then appears to endorse the AER's position in the *Explanatory statement*, which provides for the Victorian DNSPs that have historically been on the all-lagged approach to maintain that approach. To give effect to this, AusNet Services stated that the AER should publish two versions of the RFM, one using the partially-lagged approach and the other using the all-lagged approach.[49]

We consider that the NER allows for only one current version of the distribution RFM at any point in time.[50] We have instead included both the partially-lagged and all-lagged approaches in the final amended RFM, with the selection of the relevant approach available within the model. This accommodates our position on preserving the use of all-lagged inflation for the Victorian electricity DNSPs, whilst applying the standard partially-lagged approach for all other DNSPs.[51]

---

46 SCP, *Letter re: Proposed amendment to the roll forward model*, 13 October 2016, p. 4.

47 AusNet Services, *Letter re: Proposed amendments to the electricity distribution roll forward model (RFM)*, 13 October 2016, p. 2.

48 The July 2015 submission occurred as part of consultation on updates to the transmission version of the RFM. The January 2016 submission occurred as part of AusNet Services' electricity distribution regulatory determination.

49 AusNet Services, *Letter re: Proposed amendments to the electricity distribution roll forward model (RFM)*, 13 October 2016, p. 3.

50 NER, cl. 6.5.1.

51 The un-lagged approach has not been included in the RFM. The inflation approaches included in the drop down function is intended to allow the DNSP to maintain the relevant historical approach applicable to it, rather than to allow switching from

The implementation of the partially-lagged approach in the amended DNSP RFM aligns with the most recent version of the TNSP RFM (version 3).[52]

## 2.7 Other minor improvements

We have taken the opportunity to improve the presentation and functionality of some calculations in the RFM by making a few minor presentational and operational changes. The changes include:

- adjusting the minimum supported regulatory control period length from five years to two years for displaying RAB roll forward outputs
- removing sections that were made redundant or replicated in other worksheets
- removing the CPI input (in *'Adjustment for previous period'* worksheet) for the penultimate year of the previous regulatory control period, as this value is no longer required for use in the RAB roll forward process
- removing some redundant input data on the *'TAB remaining lives'* worksheet.[53]

This also includes some updates to the handbook to improve clarity on several issues.

These changes are similar to those made in the most recent version of the TNSP RFM (version 3).

52 one approach to another.
The TNSP RFM does not offer the option to apply the all-lagged approach because all TNSPs have historically applied the partially-lagged approach.

53 JEN, *Letter re: Response to proposed amendments to the distribution roll forward model*, 13 October 2016, p. 4.

# 3 Other issues

This section highlights two issues arising from our *Explanatory statement* and subsequent stakeholder submissions. The first relates to the treatment of inflation, and the second relates to capex excluded from the RAB after an *ex post* review. Below we summarise each issue and set out the reasons for why we have not made consequential changes to the RFM in response to these issues.

## 3.1 Expected inflation

This final decision concerns changes to the RFM, not other components of the regulatory process. In the RFM we use actual inflation outcomes across the entire regulatory control period, instead of the expected inflation that was necessarily used in earlier steps. There are a number of alternative approaches that might be used when updating for actual inflation. Section 2.6 sets out why we have adopted our chosen approach to actual inflation in the final amended RFM.

Nonetheless, in our August 2016 *Explanatory statement*, we assessed inflation in the RFM with regard to inflation treatment across other components of the regulatory process—specifically, the PTRM and the annual revenue adjustment (sometimes called the annual pricing process). This holistic assessment allowed us to consider the overall revenue impact of differences between expected and actual inflation.[54] In other words, we contemplated what inflation treatment was appropriate in the RFM, taking as fixed the inflation treatment in other components of the regulatory process.

The submissions we received supported this overarching framework for assessing inflation, rather than looking at the RFM inflation in isolation.[55] They stated that this holistic assessment demonstrated that the AER's treatment of inflation was inappropriate, in that it exposed the service providers to material revenue shortfalls in current inflation conditions. However, all five submissions focused on the AER's expected inflation as the principal cause for this revenue shortfall.[56] For example, the ENA submitted a report by Frontier Economics which stated:[57]

> Thus, the main issue that we consider in this report is the prospect that the AER's approach to forecasting expected inflation over the regulatory control period is not the best unbiased forecast commensurate with the prevailing conditions in the market.

54 We also had regard to interactions across multiple regulatory control periods.

55 However, in some cases the submissions considered only the interactions between the PTRM and RFM, rather than PTRM, RFM and annual revenue adjustments.

56 AusNet Services, *Letter re: Proposed amendments to the electricity distribution roll forward model (RFM)*, 13 October 2016, p. 4; AGN, *Untitled letter*, 13 October 2016, p. 1 ; JEN, *Letter re: Response to proposed amendments to the distribution roll forward model*, 13 October 2016, p. 4; SCP, *Letter re: Proposed amendment to the roll forward model*, 13 October 2016, p. 8; ENA, *Letter re: Roll forward model (distribution) - 2016 proposed amendments - Proposal for future collaborative work on treatment of inflation*, 25 October 2016, p. 1.

57 Frontier Economics, *Comment on treatment of inflation in the AER's PTRM and the RFM, A report prepared for the Energy Networks Association*, October 2016, p. 1.

The AER's method for estimating expected inflation is specified in the PTRM, not the RFM.[58] This was acknowledged submissions by AusNet Services, AGN, ENA and SCP, who explicitly noted that changes to the approach for estimating expected inflation might be beyond the scope of this RFM update.[59] For example, the ENA stated:[60]

> ENA and its members are keen to collaboratively engage with the AER to more fully consider the issues raised in this note beyond the RFM review, and would value further broader discussions with AER and other stakeholders on potential options to address them in future determination processes.

The submissions we received supported the AER's proposed approach to updating actual inflation in the RFM.[61] It appears that these stakeholders would not seek to amend any aspect of the RFM to account for this issue.[62] In other words, they agree with the current treatment of inflation in the RFM, but want us to consider changing the expected inflation treatment in other components of the regulatory process. Hence, we have not made any change to the amended RFM in response to this issue.

Evaluating the method for estimating expected inflation as an input to the PTRM is out of scope for this RFM amendment. The method for estimating expected inflation would necessarily fall within the scope of a PTRM review undertaken in accordance with the relevant rules.[63] We have noted the submissions on expected inflation received in this process and will engage with stakeholders on this issue in a separate consultation process.

## 3.2 Exclusion of inefficient capex

We assess the prudency and efficiency of past capex at each distribution determination.[64] If past capex was not prudent and efficient, we may exclude it from being added to the RAB.[65]

---

58 See AER, *Final decision: Amendment, Electricity transmission and distribution network service providers, Post-tax revenue models (version 3)*, 29 January 2015, *Appendix B: Distribution PTRM*; AER, *Draft decision, AusNet Services transmission determination, 2017–18 to 2021–22, Attachment 3 – Rate of return*, July 2016, pp. 3-129 to 3-138 (expected inflation is a common issue between distribution and transmission); and AER, *Better regulation, Explanatory statement, Rate of return guideline*, December 2013, p. 47.

59 AusNet Services, *Letter re: Proposed amendments to the electricity distribution roll forward model (RFM)*, 13 October 2016, p. 8; AGN, *Untitled letter*, 13 October 2016, p. 1; and SCP, *Letter re: Proposed amendment to the roll forward model*, 13 October 2016, pp. 6–8.

60 ENA, *Letter re: Roll forward model (distribution) - 2016 proposed amendments - Proposal for future collaborative work on treatment of inflation*, 25 October 2016, p. 1.

61 Only two submissions (AusNet Services and SCP) directly addressed the choice between all-lagged and partially-lagged inflation approach when updating for actual inflation outcomes, as set out in section 3.1. The other three submissions addressed the use of actual inflation outcomes in the RFM without commenting specifically on the lag that should be used.

62 There is one exception. The SA Power Networks/CitiPower/Powercor submission identifies several potential options for dealing with the issue. One of these options entails an adjustment to the RAB to offset the claimed residual impact of the difference between expected and actual inflation over the previous regulatory control period. This might be implemented in the RFM. However, the submission noted that it would likely require changes to the NER, and so it is also beyond the scope of this RFM update. SA Power Networks/CitiPower/Powercor, *Letter re: Proposed amendment to the roll forward model*, 13 October 2016, p. 7.

63 NER, cl. 6.4.1(b).

64 NER, cl. S6.2.2A. See also AER, *Better Regulation, Capital expenditure incentive guideline for electricity network service providers*, November 2013, pp. 9–10, 13–22.

65 We assess prudency and efficiency of capex with regard to three specific tests set out in the NER, known as the overspending requirement, margin requirement and capitalisation requirement. See NER, cll. S6.2.2A (c)–(e).

The JEN submission noted that there was no separate section in the proposed amended RFM to deal with the exclusion of this capex.[66]

We consider that the available inputs in the RFM will be appropriate to handle the exclusion of past capex, if this occurs for a particular DNSP. The excluded capex would result in changes to the input values on the '*RFM input'* worksheet, either to opening RAB values or the yearly capex values.[67] We consider that adding a dedicated section to separately deal with excluded capex would entail additional complexity without corresponding gain in utility. We note that our decision document setting out our capex assessment will provide a transparent calculation of any excluded capex amounts, separate from the RFM itself. Accordingly, no modifications have been made for this issue in the final amended RFM.

66 JEN, *Letter re: Response to proposed amendments to the distribution roll forward model*, 13 October 2016, p. 4.

67 The input values that are adjusted will depend on when the excluded capex occurred. The capex assessment window is offset from the regulatory control period by two years. For example, assuming regulatory control periods are five years in length, the assessment is for years one, two and three of the regulatory control period, and years four and five of the regulatory control period before that. Excluded capex falling within the regulatory control period will require changes in the yearly capex inputs. Excluded capex from the previous regulatory control period will require changes to the opening RAB inputs, and corresponding changes to the *RAB remaining life* and *TAB remaining life* sheets as well.

# Appendices

The appendices include the final amended model (appendix A) and handbook (appendix B). There is a high level summary of changes for version 2 in the *'Intro'* worksheet of the RFM and a detailed list of changes (appendix C).

## Appendix A: Roll forward model version 2 (distribution)

## Appendix B: Roll forward model handbook (distribution)

## Appendix C: List of changes from previous version of RFM