FINAL DECISION
AusNet Services distribution determination
2016 to 2020

Attachment 2 – Regulatory asset base

May 2016

AUSTRALIAN ENERGY REGULATOR

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Note

This attachment forms part of the AER's final decision on AusNet Services' distribution determination for 2016–20. It should be read with all other parts of the final decision.

The final decision includes the following documents:

Overview

Attachment 1 – Annual revenue requirement

Attachment 2 – Regulatory asset base

Attachment 3 – Rate of return

Attachment 4 – Value of imputation credits

Attachment 5 – Regulatory depreciation

Attachment 6 – Capital expenditure

Attachment 7 – Operating expenditure

Attachment 8 – Corporate income tax

Attachment 9 – Efficiency benefit sharing scheme

Attachment 10 – Capital expenditure sharing scheme

Attachment 11 – Service target performance incentive scheme

Attachment 12 – Demand management incentive scheme

Attachment 13 – Classification of services

Attachment 14 – Control mechanisms

Attachment 15 – Pass through events

Attachment 16 – Alternative control services

Attachment 17 – Negotiated services framework and criteria

Attachment 18 – f-factor scheme

Contents

Shortened forms

Shortened form	Extended form
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AMI	Advanced metering infrastructure
augex	augmentation expenditure
capex	capital expenditure
CCP	Consumer Challenge Panel
CESS	capital expenditure sharing scheme
CPI	consumer price index
DRP	debt risk premium
DMIA	demand management innovation allowance
DMIS	demand management incentive scheme
distributor	distribution network service provider
DUoS	distribution use of system
EBSS	efficiency benefit sharing scheme
ERP	equity risk premium
Expenditure Assessment Guideline	Expenditure Forecast Assessment Guideline for Electricity Distribution
F&A	framework and approach
MRP	market risk premium
NEL	national electricity law
NEM	national electricity market
NEO	national electricity objective
NER	national electricity rules
NSP	network service provider
opex	operating expenditure
PPI	partial performance indicators
PTRM	post-tax revenue model
RAB	regulatory asset base
RBA	Reserve Bank of Australia
repex	replacement expenditure

Shortened form	Extended form
RFM	roll forward model
RIN	regulatory information notice
RPP	revenue and pricing principles
SAIDI	system average interruption duration index
SAIFI	system average interruption frequency index
SLCAPM	Sharpe-Lintner capital asset pricing model
STPIS	service target performance incentive scheme
WACC	weighted average cost of capital

2 Regulatory asset base

We are required to make a decision on AusNet Services' opening regulatory asset base (RAB) as at 1 January 2016.[1] We use the RAB at the start of each regulatory year to determine the return of capital (regulatory depreciation) and return on capital building block allowances. This attachment presents our final decision on the opening RAB value as at 1 January 2016 for AusNet Services and roll forward of the forecast RAB over the 2016–20 regulatory control period.

2.1 Final decision

We do not accept AusNet Services' revised proposed opening RAB value of $3444.6 million ($ nominal) as at 1 January 2016.[2] Instead, we determine an opening RAB value of $3442.1 million ($ nominal) as at 1 January 2016. This is a reduction of $2.5 million (or 0.1 per cent) compared to AusNet Services' revised proposed opening RAB. In coming to this decision:

- We accept AusNet Services' revised proposed approach to RAB indexation using annual (one-year lagged) actual inflation inputs.
- We used gross proceeds from asset sales instead of their written down values for the value of asset disposals in the RAB roll forward.
- We accept AusNet Services' amendment to the inflation adjustment for previous period capex.

Table 2.1 sets out our final decision on the roll forward of the RAB values for the 2011–15 regulatory control period.

We determine a forecast closing RAB value at 31 December 2020 of $4715.4 million ($ nominal). This is $130.2 million (or 2.7 per cent) lower than the amount of $4845.6 million ($ nominal) in AusNet Service' revised proposal. Our final decision on the forecast closing RAB reflects the amended opening RAB as at 1 January 2016, and our final decisions on the expected inflation rate (attachment 3), forecast capex (attachment 6) and forecast regulatory depreciation (attachment 5).

Our final decision also maintains our preliminary decision position on the use of forecast depreciation for establishing the RAB at the commencement of the regulatory control period from 1 January 2021.[3] We note AusNet Services' revised proposal did not discuss this issue.

Table 2.2 sets out our final decision on the forecast RAB values for AusNet Services over the 2016–20 regulatory control period.

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1 NER, cl. 6.12.1(6).

2 AusNet Services, *Revised regulatory proposal,* January 2016, p. 8–10.

3 NER, cl. 6.12.1(18).

Table 2.1 AER's final decision on AusNet Services' RAB for the 2011–15 regulatory control period ($ million, nominal)

	2011	2012	2013	2014	2015[a]
Opening RAB	2093.4	2278.1	2561.8	2858.3	3180.1
Capital expenditure[b]	273.6	318.4	379.4	400.7	366.1
Inflation indexation on opening RAB	58.4	80.2	51.3	61.8	73.4
Less: straight-line depreciation	147.4	114.9	134.2	140.7	146.2
Closing RAB	2278.1	2561.8	2858.3	3180.1	3473.4
Difference between estimated and actual 2010 capex (1 January 2010 to 31 December 2010)					–22.3
Return on difference for 2010 capex					–9.0
Closing RAB as at 31 December 2015					**3442.1**

Source: AER analysis.

(a) Based on estimated capex.

(b) Net of disposals and capital contributions, and adjusted for CPI.

Table 2.2 AER's final decision on AusNet Services' RAB for the 2016–20 regulatory control period ($ million, nominal)

	2016	2017	2018	2019	2020
Opening RAB	3442.1	3674.8	3957.8	4210.1	4471.8
Capital expenditure[a]	336.6	370.8	344.4	354.2	342.7
Inflation indexation on opening RAB	80.0	85.4	91.9	97.8	103.9
Less: straight-line depreciation	183.8	173.2	184.1	190.2	203.0
Closing RAB	**3674.8**	**3957.8**	**4210.1**	**4471.8**	**4715.4**

Source: AER analysis.

(a) Net of disposals and capital contributions. Inclusive of equity raising costs and the half-WACC to account for the timing assumptions in the PTRM.

2.2 AusNet Services' revised proposal

AusNet Services revised proposal used our RFM to establish an opening RAB as at 1 January 2016 and our PTRM to roll forward the RAB over the 2016–20 regulatory control period. Its revised proposal submitted an opening RAB value as at 1 January 2016 of $3444.6 million ($ nominal).[4] It adopted the preliminary decision's:[5]

[4] AusNet Services, *Revised regulatory proposal*, January 2016, p. 8–5.

[5] AusNet Services, *Revised regulatory proposal*, January 2016, p. 8–2.

- adjustment for removing the half-year WACC allowance for 2010 actual net capex
- removal of the proposed addition of Advanced Metering Infrastructure (AMI) IT and communication assets to the standard control services opening RAB at 1 January 2016, leaving these assets in the alternative control services asset base
- other minor amendments to the RFM to correct for errors.

However, it did not adopt the preliminary decision approach to indexing the RAB for actual inflation. AusNet Services' revised proposal applies a one-year lagged actual inflation rate across all components of the RAB roll forward.[6] AusNet Services also proposed to remove the inflation adjustment made in the 'Adjustment for previous period' worksheet of the RFM. This inflation adjustment related to calculating the difference between estimated and actual 2010 capex to be trued-up in this determination.

AusNet Services' revised proposal also did not adopt our preliminary decision to use the gross proceeds from asset sales for the value of asset disposal. AusNet Services instead maintained its initial proposal to use the written down value of the asset as an input for the value of asset disposal.[7] Table 2.3 presents AusNet Services' revised proposed roll forward of its RAB during the 2011–15 regulatory control period.

Table 2.3 AusNet Services' revised proposed RAB for the 2011–15 regulatory control period ($million, nominal)

	2011	2012	2013	2014	2015[a]
Opening RAB	2093.4	2278.3	2563.0	2858.9	3180.4
Capital expenditure[b]	273.8	319.5	379.1	400.5	366.1
Inflation indexation on opening RAB	58.4	80.2	51.4	61.8	73.4
Less: straight-line depreciation	147.4	114.9	134.5	140.9	146.4
Closing RAB	2278.3	2563.0	2858.9	3180.4	3473.5
Difference between estimated and actual 2010 capex (1 January 2010 to 31 December 2010)					–18.2
Return on difference for 2010 capex					–10.7
Closing RAB as at 31 December 2015					**3444.6**

Source: AusNet Services, *Revised regulatory proposal – Attachment 5–3*, January 2016, RAB RFM.

(a) Based on estimated capex.

(b) Net of disposals and capital contributions, and adjusted for CPI.

6 AusNet Services, *Revised regulatory proposal*, January 2016, p. 8–4.

7 AusNet Services, *Revised regulatory proposal*, January 2016, p. 8–2.

AusNet Services proposed a revised closing forecast RAB as at 31 December 2020 of $4845.6 million ($ nominal).[8] This value reflects its revised proposed opening RAB, forecast capex, expected inflation, and depreciation (based on forecast capex) over the 2016–20 regulatory control period. Its projected RAB over the 2016–20 regulatory control period is shown in Table 2.4.

Table 2.4 AusNet Services' revised proposed RAB for the 2016–20 regulatory control period ($million, nominal)

	2016	2017	2018	2019	2020
Opening RAB	3444.6	3706.7	4030.8	4301.5	4580.7
Capital expenditure[a]	371.2	418.3	372.6	382.4	375.6
Inflation indexation on opening RAB	75.4	81.2	88.3	94.2	100.3
Less: straight-line depreciation	184.5	175.5	190.1	197.5	211.0
Closing RAB	**3706.7**	**4030.8**	**4301.5**	**4580.7**	**4845.6**

Source: AusNet Services, *Revised regulatory proposal, PTRM 'AST Distribution PTRM Revised Proposal (Public).xls*', January 2016.

(a) Net of disposals and capital contributions. Inclusive of equity raising costs and the half-WACC to account for the timing assumptions in the PTRM

2.3 Assessment approach

Many aspects of our assessment approach for the RAB from our preliminary decision remain unchanged. Section 2.3 of our preliminary decision details the general approach.[9] However, we have accepted a change to the approach for indexation of the opening RAB for AusNet Services. Section 2.4.1 discusses this change as it affects AusNet Services.

2.4 Reasons for final decision

We determine an opening RAB value for AusNet Services of $3442.1 million ($ nominal) as at 1 January 2016, a reduction of $2.5 million ($ nominal) or 0.1 per cent from the revised proposed value. This difference is due to our use of gross proceeds from asset sales instead of their written down values for the value of asset disposals.

Based on the approved opening RAB at 1 January 2016 we forecast a closing RAB value of $4715.4 million by 31 December 2020. This represents a reduction of

8 AusNet Services, *Revised regulatory proposal, PTRM*, January 2016.

9 AER, *Preliminary decision, AusNet Services determination 2016 to 2020: Attachment 2 – Regulatory asset base*, October 2015, pp. 10–13.

$130.2 million, or 2.7 per cent compared to the revised proposal. The reasons for our decision are discussed below.

2.4.1 Opening RAB as at 1 January 2016

We determine AusNet Services' opening RAB value as at 1 January 2016 to be $3442.1 million ($ nominal). This amount is $2.5 million (or 0.1 per cent) lower than AusNet Services' value of $3444.6 million ($ nominal) in its revised proposal. Our final decision on AusNet Services' opening RAB as at 1 January 2016 reflects:

- the use of the gross proceeds from asset sales instead of their written down values for the value of asset disposals
- a change in approach from the preliminary decision to the indexation of the RAB for actual inflation. Our final decision is to accept the approach in AusNet Services' revised proposal, using a one-year lagged inflation series
- removal of the inflation adjustment to the previous period capex as set out in AusNet Services' revised proposal.

In the preliminary decision, we made certain amendments to AusNet Services' proposed roll forward of its RAB over the 2011–15 regulatory control period which AusNet Services adopted in its revised proposal. These amendments included:

- removing the half-year WACC allowance for 2010 actual net capex
- removing the proposed addition of AMI IT and communication assets transferred from alternative control services to the standard control services opening RAB at 1 January 2016
- other minor amendments to the RFM to correct for errors.

We also noted the roll forward of AusNet Services' RAB included an estimated capex value for 2015, because actual capex was not yet available.[10] We stated we would update the 2015 estimated capex value for the final decision. AusNet's revised proposal did not include an update for 2015 estimated capex. In response to an information request, AusNet Services advised that it has encountered a data migration issue arising from upgrades to its IT systems. It submitted that the 2015 capex estimate approved in the preliminary decision should continue to serve as the best estimate.[11] We note that the financial impact of any difference between actual and estimated capex for 2015 will be accounted for at the next reset.[12] We therefore accept retaining the preliminary decision 2015 capex estimate for use in this final decision.

AusNet Services' revised proposal did not adopt the preliminary decision approach to indexing the RAB for actual inflation and the use of the gross proceeds from asset

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10 NER, cl S6.2.1(e)(2).

11 AusNet Services, *RE: AER information request – Jemena - #030 – 2015 estimated capex update* [email to AER], 8 February 2016.

12 NER, cll. S6.2.1(e)(2)–(3).

sales for the value of asset disposals. It also removed the inflation adjustment to the previous period 2010 capex.

These issues are discussed in turn below.

We are required to consider the extent to which our roll forward of the RAB to 1 January 2016 contributes to the achievement of the capital expenditure incentive objective.[13] We note that under the transitional rules, in making this distribution determination we do not have the power to determine whether past capex should be excluded for inefficiency reasons.[14] Therefore, for the purposes of this final decision, we have included AusNet Services' actual or estimated capex in the 2011–15 regulatory control period when rolling forward the RAB to 1 January 2016. In future determinations, the NER allow us to review a service provider's past capex and exclude inefficient past capex from being rolled into the RAB.[15] Our RAB roll forward applies the incentive framework approved in the previous distribution determination, which included the use of an actual depreciation approach.[16] As such, we consider that it contributes to an opening RAB that includes capex that reflects prudent and efficient costs, in accordance with the capital expenditure criteria.[17]

Indexing the RAB for actual inflation inputs

Our final decision is to accept AusNet Services' revised proposed approach to RAB indexation, known as the 'all-lagged' approach. Under this approach, a one-year lagged inflation series is used to index all components of the RAB roll forward.[18] This is a departure from our preliminary decision, which used our standard 'partially-lagged' approach.[19]

We have had regard to the indexation approach used in previous Victorian distribution determinations, where the Essential Services Commission (ESC) applied the all-lagged approach prior to 2010.[20] Each of the five Victorian service providers, including AusNet

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13 NER, cl. 6.12.2(b).

14 NER, cl. 11.60.5.

15 Here, 'inefficient' past capex refers to three specific assessments (labelled the overspending, margin and capitalisation requirements) detailed in NER, cl. S6.2.2A. The details of our assessment approach for inefficient capex are set out in AER, *Capital expenditure incentive guideline*, November 2013, pp. 12–20.

16 See AER, *Final decision, Victorian electricity distribution network service providers, Distribution determination 2011–15*, October 2010, pp. 459–462.

17 NER, cll. 6.5.7(a) and (c).

18 Although we describe this as one-year lag (as does AusNet Services), the series is lagged by one year and three months. The additional three months reflects a practical delay to allow for the publication of CPI data and implementation in the annual pricing approval process. This additional three month delay is accepted by both parties and not considered contentious.

19 Under the partially lagged approach, two aspects of the RFM indexation use a one-year lagged inflation series (straight line depreciation and new capex), but one aspect uses the actual (non-lagged) inflation outcomes (opening RAB). Note that, as per the previous footnote, the actual (non-lagged) inflation series is lagged by three months to allow for publication of CPI data and pricing implementation.

20 In our 2010 determination for AusNet Services (then SP AusNet) we applied the RAB roll forward from 2006 to 2010 in accordance with the ESC approach under transitional rules. AER, *Final decision, Victorian electricity*

Services, submitted that we should apply the same unbroken inflation series to preserve the real value of its assets.[21] We agree that this consistency is desirable. To this end, the Victorian service providers' historical indexation differs from the standard approach applied to other non-Victorian networks in previous determinations.

More broadly, AusNet Services also submitted a number of reasons why the all-lagged approach should be used, regardless of the previous approach to indexation.[22] We have reviewed this material together with the submissions on this common issue from the four other Victorian service providers.[23] While we agree with elements of this reasoning, there are several areas where we disagree or where the available evidence is inconclusive. Our views have been informed by consideration of this issue in our recent update of the RFM template for transmission service providers.[24] In that update, we decided to maintain applying the partially-lagged approach for indexation. However, the Victorian service providers have raised several new issues that were not before us at that time.

These conceptual issues relating to indexation in the RAB roll forward are relevant for all distribution service providers, not just AusNet Services or the Victorian service providers as a group. We expect to commence a formal update of the AER's standard RFM template for distribution networks later this year.[25] That process will allow us to further evaluate the strengths and weaknesses of both indexation approaches (and any other alternatives). It will also allow affected stakeholders, including other service providers and consumers, to comment.[26]

Our decision to accept AusNet Services' revised proposed approach, therefore, reflects the specific history of the Victorian service providers and the current mixed state of evidence for the partially-lagged and all-lagged indexation approaches.[27] As part of this, we accept the RFM implementation in AusNet Services' revised proposal,

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distribution network service providers, Distribution determination 2011–2015, attachment 'SP AusNet RFM Final Decision.xls', October 2010.

21 AusNet Services, *Revised regulatory proposal*, 6 January 2016, pp. 8-7 to 8-8; CitiPower, *Revised regulatory proposal*, 6 January 2016, pp. 256–257; Jemena, *Revised regulatory proposal, Attachment 5-4 Asset base roll-forward and depreciation*, 6 January 2016, pp. 2–3; Powercor, *Revised regulatory proposal*, 6 January 2016, pp. 250–251; and United Energy, *Revised regulatory proposal*, 6 January 2016, pp. 72–73.

22 AusNet Services, *Revised regulatory proposal*, 6 January 2016, pp. 8-6 to 8-9.

23 CitiPower, *Revised regulatory proposal*, 6 January 2016, pp. 254–258; Jemena, *Revised regulatory proposal, Attachment 5-4 Asset base roll-forward and depreciation*, 6 January 2016, pp. 1–6; Powercor, *Revised regulatory proposal*, 6 January 2016, pp. 248–252; and United Energy, *Revised regulatory proposal*, 6 January 2016, pp. 72–73.

24 AER, *Final decision, Amendment, Electricity transmission network service providers, Roll forward model (version 3)*, 23 October 2015, p. 11–12.

25 NER, cl. 6.5.1(b)–(d).

26 We note that the AER's current approach had support from service providers when the current RFM template was developed in 2008. See the submissions available online at http://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/roll-forward-model-2008/draft-decision.

27 Further, it is likely that there would not be a material difference in revenue outcomes even if we were to change our final decision from all-lagged to the partially-lagged approach. This is because, when changing from one inflation series to another, we would give consideration to a transitional adjustment reflecting the impact of the change.

where the inflation inputs are lagged by one year and formulae in the RFM are adjusted so that this one-year lag then flows through to the inflation index construction.[28]

Value of asset disposals

Our final decision is to use the gross proceeds from asset sales for the disposal value of assets in the RFM. This approach is consistent with our preliminary decision.

Where the service provider has disposed of assets (that is, sold assets) the RAB must be adjusted in accordance with clause S6.2.1(e)(6) of the NER:

> The previous value of the regulatory asset base must be reduced by the disposal value of any asset where that asset has been disposed of during the previous regulatory control period.

The key point of contention is the interpretation of 'disposal value' in this clause.[29] In the preliminary decision, we did not accept AusNet Services' proposal to use the written down value of the assets (that is, the initial asset value less accumulated regulatory depreciation) as the disposal value in the RAB roll forward.[30] We considered this approach could result in over compensation for the service provider's investment if the proceeds from asset sales exceed their written down value. We therefore used the gross proceeds from asset sales for the disposal value of assets in the RFM.

AusNet Services' revised proposal did not adopt our preliminary decision on the disposal value of asset. It stated that the AER's approach of using gross proceeds:[31]

- was inconsistent with previous regulatory practice in Victoria
- was not consistent with clause 6.5.5(b)(2) of the NER, because it did not ensure that the sum of real value of depreciation was equal to the initial asset value
- had undesirable incentive effects, since service providers no longer stood to gain when they disposed of assets for more than their written down value.

Instead, AusNet Services maintained its initial proposal to use the written down value as the disposal value of assets in the RFM, although it did revise its amounts to correct a categorisation error.[32]

AusNet Services' first point is that using written down value is consistent with the treatment of disposals in previous distribution determinations.[33] While we agree that

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28 In contrast, AusNet Services' initial proposal used lagged inputs but did not adjust the formulae. This meant it applied a two-year lag to some RFM components. AusNet Services no longer proposes this approach.

29 The term 'disposal value' is not defined elsewhere in the NER.

30 AER, *Preliminary decision, AusNet Services determination 2016 to 2020: Attachment 2 – Regulatory asset base*, October 2015, p. 2-15.

31 AusNet Services *Revised regulatory proposal: Attachment 5–4*, January 2016, p. 8-10 and p. 8-11.

32 AusNet Services revised the disposal values for 2012 and 2013 because the values reported in the initial proposal represented the residual value of the assets retired and/or removed from service; rather than the residual values of the assets sold. AusNet Services, *Revised regulatory proposal*, January 2016, p. 8-11.

consistency with prior determinations is desirable, we consider the historical interpretation of disposals has always been to use gross proceeds from sales, not written down value:

- In the 2001–05 decision by the Office of the Regulator General (Victoria) covering the AusNet Services network (then owned by TXU), the decision stated that disposals meant proceeds from sales.[34]
- In the 2006–10 decision by the ESC for AusNet Services (then known as SP AusNet), it appears that gross proceeds were used. The final decision document does not make an explicit statement as to how disposals were to be defined.[35] In its revised proposal, AusNet Services referred to the RFM from this decision, and in particular referenced a tab in the spreadsheet which used the label 'Disposals'. We do not consider that this generic label provides support for either interpretation. However, there are two other locations in that spreadsheet which use the more explicit label 'Disposals - proceeds from sale of assets'.[36] This appears unambiguous.
- In our 2011–15 regulatory determination for AusNet Services (as SP AusNet), we rejected AusNet's proposed use of written down values, and required that it record disposals as proceeds from sales.[37]

Hence, consistency with prior determinations would lead to the adoption of gross proceeds, not written down values, as the relevant disposal value.

On AusNet Services' second point, we consider our approach is consistent with clause 6.5.5(b)(2) of the NER, which states:

> [The] sum of the real value of the depreciation that is attributable to any asset or category of assets over the economic life of that asset or category of assets (such real value being calculated as at the time the value of that asset or category of assets was first included in the regulatory asset base for the relevant distribution system) must be equivalent to the value at which that asset or category of assets was first included in the regulatory asset base for the relevant distribution system.

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33 AusNet Services, *Revised regulatory proposal*, January 2016, p. 8-11.

34 Office of the Regulator-General Victoria, *2001 Electricity distribution price review, Draft decision*, May 2000, p. 130. There was no commentary on the definition of disposals in the subsequent final decision, as it appears the issue was settled. See Office of the Regulator-General Victoria, *Electricity distribution price determination 2001–05, Volume 1 statement of purpose and reasons*, September 2000, p. 111.

35 ESC, *Final Decision, Electricity Distribution Price Review 2006–10, October 2005 Price Determination as amended in accordance with a decision of the Appeal Panel dated 17 February 2006, Final decision volume 1: Statement of purpose and reasons*, October 2006, p. 321.

36 ESC *Final decision, 2006–10 Electricity Distribution Final Determination, SP AusNet RFM Final Decision (2006–10) amended 20130718.xls*, tab 'EDPR 2006–10 Data Inputs July $, cell A69; and tab 'EDPR 2006–10 Data Inputs', cell A69.

37 AER, *Final decision, Victorian electricity distribution network service providers, Distribution determination 2011–2015*, October 2010, p. 450.

The import of this clause is that the service provider recovers exactly the same amount of capital as is initially invested in the business (in real terms). The depreciation schedule must not result in the service provider recovering more capital through depreciation than it initially invested (a windfall gain).[38] Conversely, the depreciation schedule must not result in the service provider recovering less capital than it initially invested (a windfall loss).

While clause 6.5.5(b)(2) of the NER does not refer explicitly to disposals, they are of the same nature as the return of capital through depreciation. When assets are sold, they exit the asset base, and the disposal value is deducted from the RAB reflecting the final return of capital.[39] Hence, we consider the interpretation of 'disposal value' should ensure the principle behind clause 6.5.5(b)(2) is preserved—the service provider always recovers the exact value of the initial capital investment.

This directly leads to AusNet Services' third point, which is that its proposed approach leads to desirable incentive effects:

- Using written down value will provide the businesses an incentive to dispose of assets because they retain the benefit where proceeds from sale are above the written down value.
- Customers benefit because the written down value is removed from the RAB.

We acknowledge that use of proceeds from sale removes the ability for service providers to make a gain when disposing of assets. We note that the effect is symmetrical, since it also removes the potential for losses when disposing of assets.[40] We consider that this is a preferable outcome, since it ensures that the service provider exactly recovers its initial capital investment.[41] This reflects the balancing of risk and return between customers (who must return the entire capital investment) and investors (who receive the appropriate rate of return on capital reflecting this regulatory certainty). As a result, the service provider's decision on when (or if) asset disposal should occur will not be influenced by the potential for windfall gain, but by consideration of asset specific characteristics (such as age and condition) and its remaining economic usefulness.

There is another potentially problematic aspect to the incentive effects arising under the written down value approach. For practical reasons, we track the regulatory

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38 The DNSP also recovers a return *on* capital for the time period where capital is invested, separate from the return *of* capital itself. Hence, the total amount recovered by the DNSP will be greater than the amount invested, if both the return on capital and the return of capital are summed. Clause 6.5.5(b)(5) only refers to the latter component.

39 NER, cl. S6.2.1(e)(6).

40 In the worked example above, if the service provider sold the asset for $10 (instead of $30), AusNet Services' approach (written down value) would result in a $10 capital loss on the initial $100 capital outlay. The AER approach (proceeds from sale) would still return exactly $100 to the service provider (there would be $10 depreciation in year 5).

41 As noted above, this is consistent with the principle behind NER cl. 6.5.5.(b)(2).

depreciation at the asset class level, not for individual assets.[42] Hence, when a specific asset is sold, the written down value (that is, the initial value less accumulated regulatory depreciation) must be estimated using a general formula based on the standard life of the asset class and the age of the asset.[43] Inevitably, there will be assets within the asset class whose individual condition means their market value is above or below the value calculated using the general formula.[44] As a result, there is the incentive for a service provider to:

- Dispose of assets in its RAB where the written down value is below the market value of the asset. These can be sold at market rates, and the service provider makes a gain by retaining the difference.
- Avoid disposing of assets where the written down value is above the market value. The service provider would otherwise make a loss from the difference.

In both cases, the incentive distorts the disposal decision that might otherwise have been made with regard to the ability of the assets to contribute to the provision of standard control services. In contrast, this incentive effect is not present under the gross proceeds from sale approach.

In this context, we are not satisfied that AusNet Services correctly described the 'benefit' to customers arising under its approach. Either approach results in a deduction from the RAB. This reflects the removal of the assets which were previously used to provide services to those customers.[45] The benefit to customers is properly viewed as the balancing of risk and return described above.

To illustrate the operation of the AER's approach, consider the following simplified example.

Assume that a new asset with a value of $100 is included in the RAB at the start of year 1. The asset has a standard (economic) life of 5 years. We assume no further capex is added to the asset base over its economic life, and present all figures in real terms for simplicity. The roll forward of the asset base each year uses the following formula:

$$Asset\ value^{end\ year} = Asset\ value^{start\ year} - depreciation + capex\ - disposal\ value$$

Table 2.5 shows scenario one, where no asset disposal occurs over the economic life of the asset.

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42 It would be prohibitively complex to individually track all assets in the RAB. Clause 6.5.5 of the NER explicitly recognises the use of assets grouped into categories,

43 For example, under straight-line depreciation, the simplified formula in real terms is:
Written down value = Initial asset value – [(Initial asset value / Standard asset life) x Asset age]

44 With a broad spread of asset conditions, the aggregate value of the asset class may be accurate even though the value of individual assets varies substantially.

45 However, only the proceeds from sale approach values these assets at market value.

Table 2.5 Scenario 1: No asset disposal ($ real)

Year	1	2	3	4	5	Total
Asset value (start of year)	100	80	60	40	20	n/a
– Depreciation	20	20	20	20	20	100
+ Capex	0	0	0	0	0	0
– Disposal value	0	0	0	0	0	0
= Asset value (end of year)	80	60	40	20	0	n/a
Service provider cash flow	20	20	20	20	20	100

Under the straight-line depreciation approach, the depreciation schedule (reflected in row three of Table 2.5) is $20 a year over the five year economic life of the asset. The remaining value of the asset measured at the end of each year is shown in the second last row of the table. Consistent with clause 6.5.5(b)(2) of the NER, the sum of the real value of the depreciation of the asset over its economic life is $100, equivalent to the real value of the asset when it is first introduced to the RAB.

The final row shows cash flow each year from the perspective of the service provider (but only in relation to capital inflows).[46] It spent $100 initially prior to the start of year 1, but does not immediately recover this amount from customers as revenue. Instead, each year from year 1 to year 5, it receives $20 in depreciation—that is, revenue from the return of capital building block. The net result is $100 in total expenditure matched by $100 in total revenue, and the exact return of all capital invested in the business.

Next, we alter the scenario so that the asset is sold during year 4. The written down value of the asset at this time is $20,[47] but we assume the proceeds from sale is $30—that is, the sale amount is higher than the written down value. Therefore, under AusNet Services' approach, the disposal value is $20, but under the AER's approach, the disposal value is $30.

Table 2.6 shows the calculations under the AER approach. Row five shows that the disposal value of $30 (proceeds from sale) is recorded in year 4. The asset value at the end of this year will therefore be negative.[48] Accordingly, the depreciation schedule will become negative in year 5, and $10 will be returned to consumers for that year.[49] The initial value of the asset ($100) is equal to the sum of depreciation ($70) and the

[46] Including other building block components (for example, return on capital, opex, and tax) would complicate the example but would not change the core result.

[47] The asset value at the start of year 4 was $40, but $20 of depreciation has been incurred during year 4.

[48] Calculated as: 40 –20 +0 –30 = –10 (Starting value – depreciation + capex –disposal value = Ending value).

[49] In this simplified example the entire asset class has negative value, and accordingly we set the remaining life to one year so that this amount is immediately returned to consumers. In practice, we would expect there to be other assets within the class with positive values and so the negative depreciation would be offset against ongoing positive capex.

disposal value adjustment ($30).[50] These calculations reflect the operation of clauses 6.5.5(b)(2) and S6.2.1(e)(6) of the NER.

Table 2.6 Scenario 2: Asset disposal using proceeds from sale ($ real)

Year	1	2	3	4	5	Total
Asset value (start of year)	100	80	60	40	–10	n/a
– Depreciation	20	20	20	20	–10	70
+ Capex	0	0	0	0	0	0
– Disposal value (proceeds from sale)	0	0	0	**30**	0	30
= Asset value (end of year)	80	60	40	–10	0	n/a
Service provider cash flow	20	20	20	**50**	**–10**	100

From the perspective of the service provider's cash flow, there is exact return of all capital invested in the entity. There is an initial outlay of $100 before the start of year 1, then recovery of $20 in the return of capital building block (depreciation) in year 1, year 2 and year 3. In year four, there is revenue of $50, comprising $20 return of capital and $30 proceeds from sale. Finally, the negative depreciation in year 5 represents a $10 outflow for the service provider.[51] Across the five years, the service provider will exactly recover its initial capital investment.

Table 2.7 shows the equivalent calculations under AusNet Services' proposed approach.

Table 2.7 Scenario 3: Asset disposal using written down value ($ real)

Year	1	2	3	4	5	Total
Asset value (start of year)	100	80	60	40	0	n/a
– Depreciation	20	20	20	20	0	80
+ Capex	0	0	0	0	0	0
– Disposal value (written down value)	0	0	0	**20**	0	20
= Asset value (end of year)	80	60	40	0	0	n/a
Service provider cash flow	20	20	20	**50**	**0**	110

Row five of Table 2.7 shows that the disposal value of $20 (written down value) is recorded in year 4, which is lower than the actual proceeds from sale of $30. The asset

[50] Alternatively, this is equivalent to stating that the initial value of the asset ($100) less the disposal value adjustment ($30) is equal to depreciation ($70).

[51] In this simplified example there is only one asset with negative depreciation. In practice, we would expect the service provider would have positive depreciation relating to other assets, so the negative depreciation would offset against this and result in a smaller (but still positive) return of capital building block.

value at the end of year 4 is therefore $0. In contrast to the AER approach, this means no depreciation occurs in year 5.

Analysis of the service provider's cash flow shows that it recovers more than initially invested in the business. There is expenditure of $100 initially before the start of year 1, and revenue of $20 in year 1, year 2 and year 3 reflecting the depreciation allowance in each of these years. In year 4, even though the RAB was adjusted by the written down value of $20, the business actually receives $30 proceeds from the sale. Hence, revenue for year 4 is $50, being the sum of depreciation ($20) and proceeds from sale ($30). Unlike the AER approach, there is no outflow in year 5. The total capital return is $110, $10 more than initially invested. Hence, the principle behind clause 6.5.5(b)(2) of the NER is not preserved.

Having reviewed all the material before us, we consider that using proceeds from sale:

- is consistent with past historical treatment for AusNet Services
- meets the requirements of clauses 6.5.5(b)(2) and S6.2.1(e)(6) of the NER
- provides appropriate incentives to the service provider.

Therefore, consistent with our preliminary decision, we consider the disposal value of assets should be the gross proceeds from sales.[52] We note the other Victorian service providers have adopted the use of gross proceeds for their disposal values in the RFM. Our final decision on the total value of AusNet Services' asset disposals for the 2011–15 regulatory control period is $6.1 million ($ nominal) as set out in Table 2.8.

Table 2.8 AER final decision on disposal value of assets for the 2011–15 regulatory control period, ($million, nominal)

	2011	2012	2013	2014	2015[a]	Total
Disposal value (proceeds from sale)	0.3	3.8	0.4	0.4	1.2	6.1

(a) Based on estimate.

Inflation adjustment to previous period capex

The template distribution RFM has an input in the 'Adjustment for previous period' worksheet for 2009 inflation. This inflation rate is used when calculating the difference between estimated and actual 2010 (previous period) capex to be trued-up in this determination. When this template RFM was developed, it was determined that an inflation adjustment was required to ensure that actual net capex is consistent in nominal terms with the forecast net capex rolled into the RAB as allowed in the

[52] We also accept AusNet Services' revised proposal that the assets reported under the asset disposal section of the RFM should only include retired assets that are sold rather than all retired assets. However, our use of proceeds from sale (instead of written down value) reduces the importance of this point, since the values for proceeds from sale only ever reflected sold assets.

previous decision RFM. In our recent review of the template transmission RFM, this same inflation adjustment was removed from the calculation, after further analysis determined that the adjustment was not required when comparing the capex values.[53]

We note AusNet Services' revised proposal removed this inflation adjustment from the RFM.[54] Our final decision is to accept AusNet Service's revised proposal to remove the inflation adjustment to the previous period capex, consistent with the template transmission RFM.

2.4.2 Forecast closing RAB as at 31 December 2020

We forecast a closing RAB value of $4715.4 million by 31 December 2020 for AusNet Services. This represents a reduction of $130.2 million, or 2.7 per cent to AusNet Services' revised proposal. This reduction reflects our final decision on the required inputs for determining the forecast RAB in the PTRM. To determine the forecast RAB value, we have amended the PTRM inputs as a result of the following changes:

- We reduced AusNet Services' revised proposed opening RAB as at 1 January 2016 by $2.5 million or 0.1 per cent (section 2.4.1).
- We reduced AusNet Services' revised proposed forecast capex for the 2016–20 regulatory control period by $171.6 million ($ 2015) or 8.9 per cent (attachment 6).
- We increased AusNet Services' revised proposed expected inflation rate from 2.19 per cent to 2.32 per cent (attachment 3). This results in an increase to the indexation of the RAB component for the 2015–20 regulatory control period by $19.6 million ($ nominal) or 4.4 per cent.
- We reduced AusNet Services' revised proposed forecast straight-line depreciation for the 2016–20 regulatory control period by $24.4 million ($ nominal) or 2.5 per cent (attachment 5).

2.4.3 Application of depreciation approach in RAB roll forward for next reset

Our final decision is to roll forward the RAB for the commencement of AusNet Services' 2021–25 regulatory control period using depreciation based on forecast capex (updated for actual inflation). This approach is consistent with our preliminary decision and the framework and approach.[55] We note AusNet Services' revised proposal did not discuss this issue.

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53 AER, *Final decision - Amendments to the electricity transmission roll forward model*, Appendix A - Transmission roll forward model - Version 3, October 2015.

54 AusNet Services, *Revised regulatory proposal*, January 2016, p. 8-2.

55 AER, *Preliminary decision AusNet Services distribution determination - Attachment 2 - Regulatory asset base*, October 2015, p. 16; AER, *Final Framework and Approach for the Victorian Electricity Distributors*, October 2014, pp. 121–126.