DRAFT DECISION
AusNet Services transmission determination
2017−18 to 2021−22

Attachment 2 – Regulatory asset base

July 2016

Note

This attachment forms part of the AER's draft decision on AusNet Services' revenue proposal 2017–22. It should be read with other parts of the draft decision.

The draft decision includes the following documents:

Overview

Attachment 1 – maximum allowed revenue

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 – pricing methodology

Attachment 13 – pass through events

Attachment 14 – negotiated services

Contents

Shortened forms

Shortened form	Extended form
AARR	aggregate annual revenue requirement
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
ASRR	annual service revenue requirement
augex	augmentation expenditure
capex	capital expenditure
CCP	Consumer Challenge Panel
CESS	capital expenditure sharing scheme
CPI	consumer price index
DRP	debt risk premium
EBSS	efficiency benefit sharing scheme
ERP	equity risk premium
MAR	maximum allowed revenue
MRP	market risk premium
NEL	national electricity law
NEM	national electricity market
NEO	national electricity objective
NER	national electricity rules
NSP	network service provider

Shortened form	Extended form
NTSC	negotiated transmission service criteria
opex	operating expenditure
PPI	partial performance indicators
PTRM	post-tax revenue model
RAB	regulatory asset base
RBA	Reserve Bank of Australia
repex	replacement expenditure
RFM	roll forward model
RIN	regulatory information notice
RPP	revenue and pricing principles
SLCAPM	Sharpe-Lintner capital asset pricing model
STPIS	service target performance incentive scheme
TNSP	transmission network service provider
TUoS	transmission use of system
WACC	weighted average cost of capital

2 Regulatory asset base

The regulatory asset base (RAB) is the value of the assets used by AusNet Services to provide prescribed transmission services.[1] Our revenue determination specifies the RAB as at the commencement of the regulatory control period and the appropriate method for the indexation of the RAB.[2] The indexation of the RAB is one of the building blocks that form the annual building block revenue requirement for each year of the 2017–22 regulatory control period.[3] We set the RAB as the foundation for determining a TNSP's revenue requirements, and use the opening RAB for each regulatory year to determine the return on capital and return of capital (regulatory depreciation) building block allowances.[4]

This attachment presents our draft decision on the opening RAB value as at 1 April 2017 for AusNet Services. It also presents our forecast RAB values for AusNet Services over the 2017–22 regulatory control period.

2.1 Draft decision

We do not accept AusNet Services' proposed opening RAB of $3228.7 million ($ nominal) as at 1 April 2017.[5] We instead determine an opening RAB value of $3194.7 million ($ nominal) as at 1 April 2017. This is because we have amended AusNet Services' proposed roll forward model (RFM) to correct a number of input errors and other adjustments. These amendments include:

- applying the standard partially-lagged inflation approach for RFM indexation

- adjusting for the movements in capitalised provisions when adding actual capex to the RAB

- amending the asset class allocation of as-commissioned capex for 2013–14 and 2014–15

- accounting for asset disposal values based on gross proceeds.

These amendments reduced the opening RAB as at 1 April 2017 by $34.1 million (or 1.1 per cent) compared to the proposal.

To determine the opening RAB as at 1 April 2017, we have rolled forward the RAB over the 2014–17 regulatory control period to determine a closing RAB value at 31 March 2017. This roll forward includes an adjustment at the end of the 2014–17 regulatory control period to account for the difference between actual 2013–14 capex

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[1]   NER, cl. 6A.6.1.
[2]   NER, cll. 6A.4.2(3A) and (4).
[3]   NER, cll. 6A.5.4(a)(1) and (b)(1).
[4]   NER, cll. 6A.5.4(a)(2) and (3).
[5]   This RAB value is based on as-incurred capex.

and the estimate approved at the 2014–17 determination.[6] The roll forward also includes an adjustment for new assets—labelled 'Group 3 assets'—added to the opening RAB at 1 April 2017 and a true-up for the difference between actual and forecast Group 3 assets rolled in at the 2014–17 determination.[7] Expenditure on Group 3 assets occurs throughout the regulatory control period, but this capex is not added to the RAB each year (as is usually the case). Instead, these assets are added to the RAB at the commencement of each regulatory control period.[8]

Table 2.1 sets out our draft decision on the roll forward of the RAB values for AusNet Services over the 2014–17 regulatory control period.

We determine a forecast closing RAB value at 31 March 2022 of $3295.7 million ($ nominal). This is $145.5 million (or 4.2 per cent) lower than the amount of $3441.2 million ($ nominal) proposed by AusNet Services. Our draft decision on the forecast closing RAB reflects the amended opening RAB as at 1 April 2017, and our draft decisions on the expected inflation rate (attachment 3), forecast capex (attachment 6) and forecast depreciation (attachment 5).

Table 2.2 sets out our draft decision on the forecast RAB values for AusNet Services over the 2017–22 regulatory control period. The forecast RAB does not include any Group 3 assets, which may be commissioned during the 2017–22 regulatory control period. These assets would be added to the RAB at the next reset.

We accept AusNet Services' proposal that the forecast depreciation approach (instead of an actual depreciation approach) is to be used to establish the opening RAB at the commencement of the 2022–27 regulatory control period for AusNet Services.[9] We consider this approach will provide sufficient incentives for AusNet Services to achieve capex efficiency gains over the 2017–22 regulatory control period.

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[6] The end of period adjustment will be positive (negative) if actual capex is higher (lower) than the estimate approved at the 2014–17 determination.

[7] During a regulatory control period, AEMO or a distribution business may request AusNet Services to provide augmentations to the transmission network or distribution connection services. While the assets constructed due to these requests provide prescribed transmission services, the forecast capex associated with these assets sit outside of the revenue determination. This is because AusNet Services is not responsible for the planning of these capex. AusNet Services and AEMO refer to the assets that provide these services as 'Group 3' assets. Group 3 assets sit outside of the RAB and are governed by commercial contracts until such time as they are rolled into the RAB, usually at the next revenue reset. See: AusNet Services, *Revenue proposal*, October 2015, p. 23.

[8] As noted above, this adjustment includes estimated expenditure where actual expenditure is not yet known; so there is an additional true-up required at the next revenue determination.

[9] NER, cl. S6A.2.2B(a).

Table 2.1 AER's draft decision on AusNet Services' RAB for the 2014–17 regulatory control period ($ million, nominal)

	2014–15	2015–16[a]	2016–17[b]
Opening RAB	2876.0	2944.9	2984.7
Capital expenditure[c]	149.0	150.0	182.3
Inflation indexation on opening RAB[d]	66.4	44.3	70.1
Less: straight-line depreciation[e]	146.5	154.5	165.7
Closing RAB	2944.9	2984.7	3071.4
Difference between estimated and actual capex (1 April 2013 to 31 March 2014)			19.4
Return on difference for 2013–14 capex			4.7
Group 3 assets adjustments[f]			99.2
Opening RAB as at 1 April 2017			**3194.7**

Source: AER analysis.

(a)   Based on estimated capex. We will update the RAB roll forward for actual capex in the final decision.

(b)   Based on estimated capex provided by AusNet Services, adjusted for actual CPI. We expect to update the RAB roll forward for a revised capex estimate in the final decision, and true-up the RAB for actual capex at the next reset.

(c)   As incurred, net of disposals, and adjusted for actual CPI.

(d)   We will update the RAB roll forward for actual CPI for 2016–17 in the final decision.

(e)   Adjusted for actual CPI. Based on as-commissioned capex.

(f)   Roll in of Group 3 assets at 1 April 2017, and true-up for difference between actual and forecast Group 3 assets rolled in at the 2014–17 determination.

Table 2.2 AER's draft decision on AusNet Services' RAB for the 2017–22 regulatory control period ($ million, nominal)

	2017–18	2018–19	2019–20	2020–21	2021–22
Opening RAB	3194.7	3255.6	3283.2	3289.8	3288.4
Capital expenditure[a]	163.0	130.0	116.1	110.8	102.5
Inflation indexation on opening RAB	78.1	79.6	80.3	80.4	80.4
Less: straight-line depreciation[b]	180.2	182.1	189.7	192.6	175.6
Closing RAB	3255.6	3283.2	3289.8	3288.4	3295.7

Source: AER analysis.

(a)   As incurred and net of disposals. Inclusive of equity raising costs and the half-WACC to account for the timing assumptions in the PTRM.

(b)   Based on as-commissioned capex.

2.2 AusNet Services' proposal

Besides changes to the depreciation calculations, AusNet Services used our RFM to establish an opening RAB as at 1 April 2017 and our post-tax revenue model (PTRM) to roll forward the RAB over the 2017–22 regulatory control period.

AusNet Services proposed an opening RAB value as at 1 April 2014 of $2876.0 million ($ nominal).[10] Rolling forward this RAB and using depreciation based on actual capex, AusNet Services proposed a closing RAB as at 31 March 2017 of $3228.7 million ($ nominal). Table 2.3 presents AusNet Services' proposed roll forward of its RAB during the 2014–17 regulatory control period.

Table 2.3   AusNet Services' proposed RAB for the 2014–17 regulatory control period ($ million, nominal)

	2014–15	2015–16[a]	2016–17[a]
Opening RAB	2876.0	2949.4	3015.5
Capital expenditure[b]	156.8	150.6	183.8
Inflation indexation on opening RAB	62.2	68.1	70.9
Less: straight-line depreciation[c]	145.6	152.5	165.1
Closing RAB	2949.4	3015.5	3105.0
Difference between estimated and actual capex (1 April 2013 to 31 March 2014)			19.6
Return on difference for 2013–14 capex			4.9
Group 3 assets adjustments[d]			99.2
Opening RAB as at 1 April 2017			**3228.7**

Source: AusNet Services, *Revenue proposal*, October 2015, pp. 173–174.

(a)   Based on estimated capex.

(b)   As incurred, net of any disposals, and adjusted for actual CPI.

(c)   Adjusted for actual CPI. Based on as-commissioned capex.

(d)   Roll in of Group 3 assets at 1 April 2017, and true-up for difference between actual and forecast Group 3 assets rolled in at the 2014–17 determination.

AusNet Services proposed a closing forecast RAB as at 31 March 2022 of $3441.2 million ($ nominal). This value reflects its proposed opening RAB, forecast capex, expected inflation, and depreciation (based on forecast capex) over the 2017–22 regulatory control period. Its projected RAB over the 2017–22 regulatory control period is shown in Table 2.4.

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[10]   AusNet Services, *Revenue proposal*, October 2015, p. 173.

Table 2.4   AusNet Services' proposed RAB for the 2017–22 regulatory control period ($ million, nominal)

	2017–18	2018–19	2019–20	2020–21	2021–22
Opening RAB[a]	3228.7	3312.7	3362.2	3398.7	3422.8
Capital expenditure[b]	187.4	166.5	166.4	157.8	137.1
Inflation indexation on opening RAB	75.9	77.8	79.0	79.9	80.4
Less: RAB depreciation[c]	179.4	194.8	208.9	213.5	199.1
Closing RAB	3312.7	3362.2	3398.7	3422.8	3441.2

Source: AusNet Services, *Revenue proposal*, October 2015, p. 174.

(a)   Includes the roll-in of Group 3 assets acquired during the 2014–17 regulatory control period.

(b)   As incurred, and net of any disposals. Inclusive of equity raising costs and the half-WACC to account for the timing assumptions in the PTRM.

(c)   Based on as-commissioned capex and AusNet Services' proposal regarding depreciation, see attachment 5.

AusNet Services proposed to apply the forecast depreciation approach to establish the opening RAB at the commencement of the 2022–27 regulatory control period, consistent with the approach set out in our *Framework and approach* paper.[11]

2.3 AER's assessment approach

We roll forward the TNSP's RAB during the 2014–17 regulatory control period to establish the opening RAB at 1 April 2017. This value can be adjusted for any differences in the forecast and actual capex, and disposals.[12] It may also be adjusted to reflect any changes in the use of the assets, with only assets used to provide prescribed transmission services to be included in the RAB.[13]

To determine the opening RAB, we developed an asset base RFM thata TNSP must use in preparing its revenue proposal.[14] The RFM rolls forward the RAB from the beginning of the final year of the 2008–14 regulatory control period,[15] through the 2014–17 regulatory control period, to the beginning of the 2017–22 regulatory control period. The roll forward occurs for each year by:

* Adding an inflation (indexation) adjustment for the relevant year. This adjustment is consistent with the inflation factor used in the annual indexation of the maximum allowed revenue (MAR).[16]

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[11]   AusNet Services, *Revenue proposal*, October 2015, p. 174.

[12]   NER, cll. S6A.2.1(f)(3) and (6).

[13]   NER, cll. S6A.2.1(f)(8) and S6A.2.3.

[14]   NER, cll. 6A.6.1(b), 6A.6.1(b)(e) and S6A.1.3(5).

[15]   The roll forward commences in the final year of the 2008–14 regulatory control period to allow us to adjust for the difference between actual 2013–14 capex and the estimated 2013–14 capex used in our 2013 transmission determination. See NER, cl. S6A.2.1(f)(3).

[16]   NER, cl. 6A.6.1(e)(3).

- Adding actual or estimated capex to the RAB for the relevant year.[17] We review a TNSP's past capex and may exclude inefficient past capex from being rolled into the RAB where total capex exceeds the regulatory allowance.[18] The details of our assessment approach for inefficient capex are set out in the *Capital expenditure incentive guideline*.[19] We note that under the transitional rules, our review of past capex does not apply to AusNet Services' prior to 1 April 2014.[20] Also, the review of past capex does not include the last two years of the 2014–17 regulatory control period—these will instead be reviewed at the next reset.[21] We check actual capex amounts against audited regulatory accounts data and generally accept the capex reported in those accounts in rolling forward the RAB.[22] However, there may be instances where adjustments are required to the annual regulatory accounts data. This would include where it is not fit for purpose.

- Subtracting depreciation from the RAB for the relevant year, calculated in accordance with the rates and methodologies allowed (if any) in the transmission determination for the TNSP's 2014–17 regulatory control period.[23] Depreciation based on forecast or actual capex can be used to roll forward the RAB.[24] For this draft decision, we use depreciation based on actual capex for rolling forward the RAB for AusNet Services' 2014–17 regulatory control period.[25]

- Subtracting any gross proceeds for asset disposals for the relevant year, by way of netting from capex to be added to the RAB.[26] We check these amounts against audited regulatory accounts data.

These annual adjustments give the closing RAB for any particular year, which then becomes the opening RAB for the following year. Through this process, the RFM rolls forward the RAB to the end of the 2014–17 regulatory control period. The PTRM used to calculate the annual building block revenue requirement for the 2017–22 regulatory control period generally adopts the same RAB roll forward approach as the RFM although the adjustments to the RAB are based on forecasts, rather than actual amounts.

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[17] NER, cl. S6A.2.1(f)(4).

[18] NER, cl. S6A.2.2A.

[19] AER, *Capital expenditure incentive guideline*, November 2013, pp. 12–20.
Under the NER, cl S6.2.2A(b), the exclusion of inefficient capex could only come from three areas including overspend in capex , margin paid to third party and capitalisation of opex as defined in cll. S6.2.2A (c), (d) and (e) of the NER.

[20] NER, cl. 11.63.

[21] NER, cl. S6A.2.2(a1). The two year lag ensures that actual capex (instead of estimated capex) is available when the review of past capex commences.

[22] We will update any estimated capex with actual capex at the time of the next reset.

[23] NER, cl. S6A.2.1(f)(5).

[24] NER, cl. 6A 4.2(a1).

[25] The use of actual depreciation is consistent with the depreciation approach established in the 2014–17 transmission determination for AusNet Services. See: AER, *Final decision, SP AusNet transmission determination 2014–15 to 2016–17*, January 2014, p. 20.

[26] NER, cl. S6A.2.1(f)(6).

We also decide whether depreciation for establishing the TNSP's RAB as at the commencement of the 2022–27 regulatory control period is to be based on actual or forecast capex.[27]

The opening RAB for the 2022–27 regulatory control period can be determined using depreciation based either on forecast or actual capex incurred during the 2017–22 period. To roll forward the RAB using depreciation based on forecast capex, we would use the forecast depreciation contained in the PTRM for the 2017–22 regulatory control period, adjusted for actual inflation. If the approach to roll forward the RAB using depreciation based on actual capex was adopted, we would recalculate the depreciation based on actual capex incurred during the 2017–22 regulatory control period.

Our decision on whether to use actual or forecast depreciation must be consistent with the capex incentive objective. We have regard to:[28]

- the incentives the service provider has to undertake efficient capex

- substitution possibilities between assets with different lives and the relative benefits of each

- the extent of overspending and inefficient overspending relative to the allowed forecast

- the capex incentive guideline

- the capital expenditure factors.

2.3.1 Interrelationships

The RAB is an input into the determination of the return on capital and depreciation (return of capital) building block allowances.[29] Factors that influence the RAB will therefore flow through to these building block components and the annual building block revenue requirement. Other things being equal, a higher RAB increases both the return on capital and depreciation allowances.

The RAB is determined by various factors, including:

- the opening RAB (meaning the value of existing assets at the beginning of the regulatory control period)

- net capex[30]

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[27] NER, cl. S6A.2.2B(a).

[28] NER, cl. S6A.2.2B(c).

[29] The size of the RAB also impacts the benchmark debt raising cost allowance. However, this amount is usually relatively small and therefore not a significant determinant of revenues overall.

[30] Net capex is gross capex less disposals. The rate of return or WACC also influences the size of the capex. This is because capex is not depreciated in the year it is first incurred, but added to the RAB at the end of the year. Instead, the capex amount is escalated by half a WACC to arrive at an end of year value. It then begins depreciating the following year.

- depreciation

- indexation adjustment – so the RAB is presented in nominal terms, consistent with the rate of return.

The opening RAB depends on the value of existing assets and will depend on actual net capex, actual inflation outcomes and depreciation in the past.

The RAB when projected to the end of the regulatory control period increases due to both forecast new capex and the indexation adjustment. The size of the indexation adjustment depends on expected inflation (which also affects the nominal rate of return or WACC) and the size of the RAB at the start of each year.

Depreciation reduces the RAB. The depreciation allowance depends on the size of the opening RAB, the forecast net capex and the depreciation schedules applied to the assets. By convention, the indexation adjustment is also offset against depreciation to prevent double counting of inflation in the RAB and rate of return, which are both presented in nominal terms. This reduces the depreciation building block that feeds into the annual building block revenue requirement.

We maintain the RAB in real terms by indexing for inflation.[31] A nominal rate of return (WACC) is multiplied by the opening RAB to produce the return on capital building block.[32] To prevent double counting of inflation through the nominal WACC and indexed RAB,[33] the regulatory depreciation building block also has an offsetting reduction for indexation of the RAB.[34] Indexation of the RAB and the offsetting adjustment made to depreciation results in smoother revenue recovery profile over the life of an asset than if the RAB was un-indexed. If the RAB was un-indexed, there would be no need for an offsetting adjustment to the depreciation calculation of total revenue. This alternative approach provides for overall revenues being higher early in the asset's life (as a result of more depreciation being returned to the TNSP) and lower in the future—producing a steeper downward sloping profile of total revenue.[35] The implications of an unindexed RAB are discussed further in appendix A of attachment 5.

Figure 2.1 shows the key drivers of the change in the RAB over the 2017–22 regulatory control period as proposed by AusNet Services. Overall, the closing RAB at the end of the 2017–22 regulatory control period would be 6.6 per cent higher than the opening RAB at the start of that period based on the proposal, in nominal terms. The proposed forecast net capex increases the RAB by about 25 per cent, while expected

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[31] NER, cll. 6A.5.4(b)(1) and 6A.6.1(e)(3).

[32] NER, cll. 6A.6.2(a) and 6A.6.2(d)(2).

[33] NER, cl. 6A.5.4(b)(1)(ii).

[34] If the asset lives are extremely long, such that the RAB depreciation rate is lower than the inflation rate, then negative regulatory depreciation can emerge. The indexation adjustment is greater than the RAB depreciation in such circumstances

[35] A change of approach from an indexed RAB to an unindexed RAB would result in an initial step change increase in revenues to preserve NPV neutrality.

inflation increases it by about 12 per cent. Forecast depreciation, on the other hand, reduces the RAB by about 31 per cent.

Figure 2.1   Key drivers of changes in the RAB ($ million, nominal)
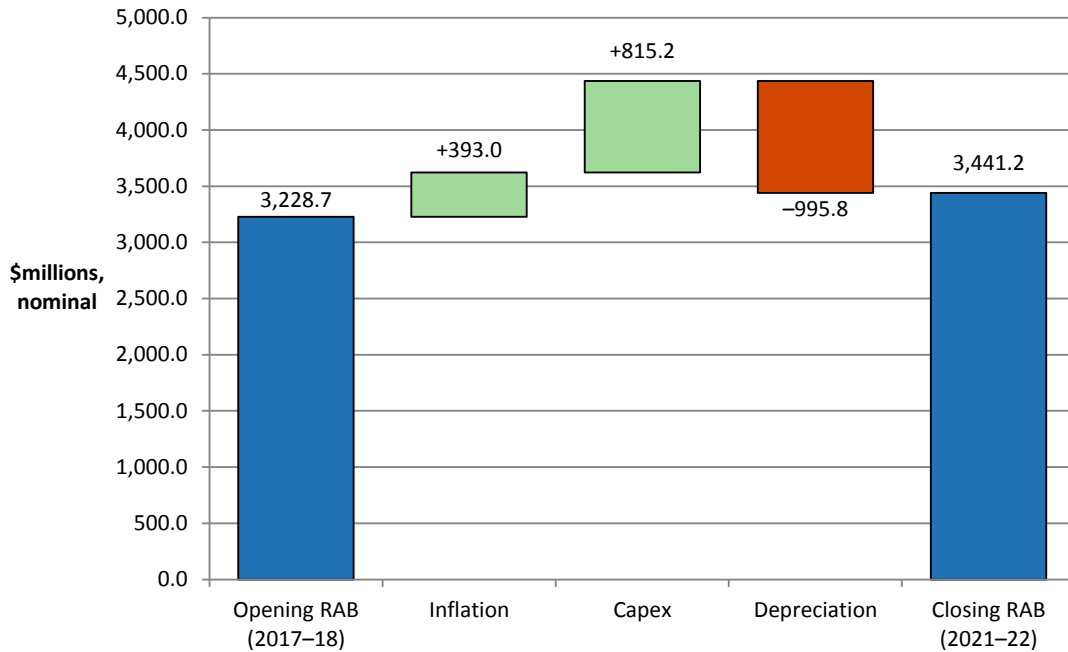
Source: AusNet Services, *Revenue proposal*, October 2015, PTRM.

AusNet Services forecast depreciation of $995.8 million ($ nominal). We have rejected AusNet Services depreciation proposal. This is discussed in attachment 5. The depreciation amount largely depends on the opening RAB (which in turn depends on capex in the past), although the impact of AusNet Services' proposed change in depreciation method for new capex is also significant. Forecast net capex is a significant driver of the increase in the RAB. We are not satisfied AusNet Services' proposed total forecast capex of $815.2 ($ nominal) for the 2017–22 regulatory control period reasonably reflects the capex criteria. We have therefore rejected AusNet Services' proposed capex and have substituted our estimate of $622.4 ($ nominal) for the 2017–22 regulatory control period.[36] Refer to attachment 6 for the discussion on forecast capex.

A ten per cent increase in the opening RAB causes revenues to increase by about three per cent. However, the impact on revenues of the annual change in RAB depends on the source of the RAB change, as some drivers affect more than one building block cost.[37]

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[36]   These capex values are consistent with those used for the RAB roll forward and include a half-WACC adjustment to take the values to end of year terms.

[37]   If capex causes the RAB increase—return on capital, depreciation, and debt raising costs all increase too. If a reduction in depreciation causes the RAB increase—revenue could increase or decrease. In this case, the higher

2.4 Reasons for draft decision

We determine an opening RAB value for AusNet Services of $3194.7 million ($ nominal) as at 1 April 2017, a reduction of $34.1 million ($ nominal) or 1.1 per cent from the proposed value. We forecast a closing RAB value of $3295.7 million by 31 March 2022. This represents a reduction of $145.5 million, or 4.2 per cent compared to AusNet Services' proposal. The reasons for our decision are discussed below.

2.4.1 Opening RAB at 1 April 2017

We do not accept AusNet Services' proposed opening RAB of $3228.7 million ($ nominal) as at 1 April 2017.[38] We instead determine an opening RAB value of $3194.7 million ($ nominal) as at 1 April 2017. This represents a reduction of $34.1 million (or 1.1 per cent).

To determine the opening RAB as at 1 April 2017 we have rolled forward the RAB over the 2014–17 regulatory control period to determine a closing RAB value as at 31 March 2017. In doing so we reviewed the key inputs of AusNet Services' proposed RFM—such as inflation based on available CPI values, rate of return, gross capex values and asset lives—and the coding (that is, spreadsheet formulas) within the model. We found these were generally correct and they reconcile with relevant data sources such as ABS data, regulatory accounts and the 2014–17 decision models.[39] However, we consider there should be adjustments made to AusNet Services' proposed RFM inputs for actual gross capex and asset disposal values.[40] We also consider that there should be adjustments to the RFM inputs and coding that deal with inflation indexation, in order to apply the standard partially-lagged approach. These changes are discussed in turn below.

We accept AusNet Services' proposed Group 3 assets roll-in of $99.2 million as at 1 April 2017. We selected five projects of the proposed Group 3 assets and reviewed AusNet Services' calculation of the roll-in value for these projects. The contracts for these five projects represent about 83 per cent of the total proposed roll-in value. Based on this assessment, we consider the method applied by AusNet Services' to

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return on capital is offset (perhaps more than offset) by the reduction in depreciation allowance. Inflation naturally increases the RAB in nominal terms. However, the real impact from changing the inflation forecast is inconsequential as revenues are updated annually by actual inflation and the X factor, which is generally unaffected by the assumed expected inflation rate.

38   This RAB value is based on a partially as-incurred approach to capex.

39   At the time of this draft decision, the roll forward of AusNet Services' RAB includes estimated capex values for 2015–16 and 2016–17. We will update the 2015–16 estimated capex with actuals in the final decision. We may also update the 2016–17 estimated capex with a revised estimate in the final decision.

40   The adjustments to actual gross capex are to account for the movements in capitalised provisions and asset class allocation.

calculate the roll-in values is consistent with the NER. It is also consistent with the method approved for AusNet Services' 2014–17 transmission determination.[41]

We also consider the extent to which our roll forward of the RAB to 1 April 2017 contributes to the achievement of the capital expenditure incentive objective.[42] We note that under the transitional rules, in making this transmission determination, the review of past capex does not apply to AusNet Services prior to 1 April 2014.[43] Given this, the review period for this transmission determination is limited to 2014–15 capex.[44] AusNet Services' actual capex incurred in 2014–15 is below the forecast allowance set at the previous transmission determination. Therefore, the overspending requirement for an efficiency review of past capex is not satisfied.[45] Accordingly, the capex incurred in that year is regarded as likely to be prudent and efficient, and included in the RAB—this is discussed further in appendix E of capex attachment 6.[46] Further, for the purposes of this draft decision, we have included AusNet Services' estimated capex in 2015–16 and 2016–17 in the RAB roll forward to 1 April 2017. At the next reset, the 2015–16 and 2016–17 capex will form part of the review period for whether past capex should be excluded for inefficiency reasons.[47] Our RAB roll forward applies the incentive framework approved in the previous transmission determination, which included the use of an actual depreciation approach.[48] As such, we consider that the 2014–17 RAB roll forward contributes to an opening RAB (as at 1 April 2017) that includes capex that reflects prudent and efficient costs, in accordance with the capital expenditure criteria.[49]

RFM indexation approach

Our draft decision is to apply the standard partially-lagged approach to inflation indexation (based on available CPI values) in the RAB roll forward. This is consistent with our template RFM and AusNet Services' previous determinations.[50] We consider

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[41] AER, *Draft decision SP AusNet transmission determination*, August 2013, p. 137.

[42] NER, cl. 6A.14.2(b).

[43] NER, cl. 11.63.

[44] NER, cl. S6A.2.2A(a1).

[45] NER, cl. S6A.2.2A(c).

[46] This is subject to an adjustment for the movement in capitalised provisions discussed below.

[47] Here, 'inefficiency' of past capex refers to three specific assessments (labelled the overspending, margin and capitalisation requirements) detailed in NER, cl. S6A.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.

[48] AER, *Final decision, SP AusNet transmission determination 2014–15 to 2016–17*, January 2014, p. 20.

[49] NER, cll. 6A.5A(a), 6A.6.7(a), 6A.6.7(c) and 6A.14.2(b)

[50] In the 2008–14 regulatory control period, the partially lagged approach was applied using the yearly change in CPI ending in the December quarter for a given financial year (in other words, a three month implementation lag). In our decision for the 2014–17 regulatory control period, we increased the implementation lag to six months and so used the September quarter CPI instead of December. We reflect the relevant historical series in our roll forward, in keeping with these past regulatory decisions. This means the change in CPI in the December 2013 quarter is included twice (once in the calculation of 2013–14 CPI using year-ending-December data; and once in the calculation of 2014–15 CPI using year-ending September data. AER, *SP AusNet Transmission determination, 2014–15 to 2016–17*, January 2014, p. 5; see also AER, *TransGrid transmission determination, 2015–2018*, April 2015, page 9 (footnote 6).

that consistency with prior regulatory treatment is desirable, particularly when there is currently mixed evidence for and against the alternative approaches.[51] We expect that the upcoming update of the distribution RFM template will provide an appropriate forum to fully evaluate the different RFM indexation approaches, and we will be able to update AusNet Services' final decision accordingly.[52] We consider that the partially-lagged approach is consistent with the NER.[53]

AusNet Services did not directly discuss RFM indexation in its revenue proposal, but the proposed RFM deviated in several areas from the standard approach. We have made changes to AusNet Services' proposed RFM inputs and coding (that is, spreadsheet formulae) in order to implement the partially lagged approach. Below we describe this approach, two alternative approaches, and the reasons for our decision.

There are a number of alternative approaches to the treatment of inflation in the RFM. They can be distinguished by the degree of lag applied to the inflation series used to convert to nominal values within the RFM:[54]

- The 'partially-lagged' approach uses inflation lagged by one year for some elements within the RFM, and un-lagged inflation (actual inflation) for others. This is as set out in our template RFM.[55]

- The 'all-lagged' approach uses inflation lagged by one year for all elements within the RFM.

- The 'un-lagged' approach uses un-lagged inflation (actual inflation) for all elements within the RFM.

The partially-lagged approach was applied to AusNet Services' RAB roll forward in the 2014–17 regulatory control period.[56] The un-lagged (actual) inflation rate for each year is applied to two elements within the RFM—indexing the opening RAB each year and

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[51] Although we reach a different end point, we follow the same reasoning as in our final decisions for the Victorian distributors—the distinguishing feature is the specific historical treatment for each network. The five Victorian distributors previously used the all-lagged approach, and so we maintained the all-lagged approach for them. AusNet Services previously used the partially-lagged approach, and so we maintain the partially-lagged approach for it. However, should the detailed analysis (as part of the update of our distribution RFM template) identify a clearly preferable approach, we would seek to move all networks to that approach.

[52] The underlying conceptual issues are applicable to both distribution and transmission networks. Hence, while the update of the distribution RFM template will explicitly consider the distribution framework, we expect the reasoning to be applicable to AusNet Services' transmission network.

[53] NER, cl. 6A.6.1(e) and cl. S6A.2.4(c)(4).

[54] Although we describe the delay on the inflation series as being zero, one or two years, there is an additional six month implementation lag on top of the base figure. This additional lag reflects a practical delay to allow for the publication of CPI data and implementation in the annual pricing approval process. We do not consider that this additional six month delay is contentious. In AusNet Services' 2014–17 regulatory control period, unlagged inflation means we use the change in CPI from the September quarter to the next September quarter as the proxy for inflation in the overlapping April-to-March financial year.

[55] Model published at: http://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/roll-forward-model-transmission-october-2015-amendment.

[56] AER, *Final decision – SP AusNet 2014-17 regulatory control period roll forward model (RFM)*, January 2014.

moving new capex from mid-year to end-year terms.[57] However, a one year lagged inflation rate is applied to two other elements within the RFM—converting net capex and RAB depreciation between real and nominal terms—consistent with the method of indexation used in the control mechanism.[58] In order to do this, the RFM requires each actual CPI rate measured for a year to be recorded in that specific year (un-lagged).[59] These inputs are directly used when indexing the opening RAB and moving new capex from mid-year to end-year terms. These actual observations are converted as part of coding within the RFM into a one year lagged index, which is used when indexing net capex and RAB depreciation. This approach is consistent with the current RFM template developed in accordance with the NER and applied for other transmission network service providers.[60]

The inflation approach in AusNet Services' proposed RFM differs from the standard partially-lagged approach, and is therefore inconsistent with the approach to RFM indexation that has been applied to AusNet Services in previous transmission determinations.[61] Elements of AusNet Services' proposed RFM match the all-lagged approach, but it differs from this approach as well, in several ways. Specifically, AusNet Services used one-year lagged inflation figures instead of un-lagged inflation figures as the initial inputs to the RFM.[62] The inflation series constructed from these inputs adds another year of lag, for two years of lag in total (double lagged). However, coding within the RFM is altered in several places, creating a separate one year lagged inflation series. The overall effect of this appears to be that:

- One year lagged inflation is applied when moving new capex from mid-year to end-year terms.[63] This matches the RFM template.

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[57]   NER, cl. S6A.2.4(c)(4). For the second element, we assume capex is incurred evenly throughout the year, which means capex is spent in the middle of the year on average. However, the RFM (and PTRM) model all cash flows as at the end of each year. To adjust capex values from mid -year to end-year terms, we capitalise (add) six months WACC to new capex, which represents the value of the half a year of delay. This is sometimes labelled the 'half WACC adjustment'.

[58]   NER, cl. 6A.6.1(e)(3). Note that the capex conversion is separate to the half WACC adjustment in the previous footnote. Capex enters the RFM in mid-year nominal terms. It is converted to real terms using lagged inflation, and moved to end-year terms using actual inflation. It is then converted back to nominal terms using lagged inflation.

[59]   AER, *Transmission determination for SP AusNet's 2014-17 regulatory control period*, 31 January 2014, p. 5. As noted above, although we describe this as actual inflation, there is still a small implementation lag such that the inflation measure is taken before the end of the relevant financial year. For AusNet Services, the September quarter CPI is used as a proxy in the 2014–17 regulatory control period, and the December quarter CPI is used as a proxy in the 2008–14 regulatory control period.

[60]   NER, cl. 6A.6.1(b)–(d). Model published at: http://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/roll-forward-model-transmission-october-2015-amendment.

[61]   AER, *Final decision – SP AusNet 2014-17 regulatory control period roll forward model (RFM)*, January 2014; AER, *Final decision - SP AusNet 2008-14 - roll forward model*, January 2008.

[62]   However, the 2013–14 inflation input was not lagged (2.75%, which is inflation from December 2012 to December 2013, as per the CPI basis used in the 2008–14 regulatory determination).

[63]   For instance, when making the half WACC adjustment to 2015–16 new capex, the calculation reflects inflation from September 2013 to September 2014. This is a one year lag from actual inflation (September 2014 to September 2015), noting that this proxy reflects the additional six month implementation lag (from September 2015 to March 2016, which is the end of AusNet Services' 2015–16 April-to-March financial year).

- One year lagged inflation is applied when indexing the opening RAB.[64] The RFM template uses unlagged inflation for this element.

- One year lagged inflation is applied when converting RAB depreciation between real and nominal terms. However, there appears to be a coding error when AusNet Services constructs this one year lagged index, such that the 2013–14 inflation measure is not correctly referenced when calculating the 2014–15 index figure.[65] The RFM template uses one year lagged inflation for this element.

- Two year lagged inflation is applied when converting new capex between real and nominal terms.[66] The RFM template uses one year lagged inflation for this element.

Hence, AusNet Services' proposed RFM is implementing neither the partially-lagged nor the all-lagged indexation approach. It appears to be internally inconsistent, since there are two versions of the one year lagged indexation series, and they do not align. Further, applying the two year lagged inflation index appears to double count the 2012–13 inflation outcome, as it will be used to adjust new capex in both 2013–14 and 2014–15. For these reasons, we do not accept the indexation approach in AusNet Services' proposed RFM.

We recently accepted proposals by the five Victorian distribution networks to use the all-lagged approach.[67] We applied the all-lagged approach for these five networks because it was consistent with the historical treatment of these networks.[68] That is, although AusNet Services previously had the partially-lagged approach, the Victorian distributors previously had the all-lagged approach.[69] In our final decisions for the Victorian distributors, we had regard to the new material they submitted on this issue which contended for the all-lagged approach over our standard partially lagged approach.[70] While we did not consider that this material was conclusive, we did note

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[64] For instance, when indexing the 2015–16 opening RAB, the calculation reflects inflation from September 2013 to September 2014.

[65] The coding error appears to have arisen because of the change in the timing of the underlying CPI series. In line with the relevant regulatory determinations, December quarter CPI should be used for the 2008–14 regulatory control period but September quarter CPI should be used for the 2014–17 regulatory control period. Hence, when constructing a one year lagged index, the 2014–15 index calculation should have regard to the year-to-December 2013 inflation outcome. The 2015–16 index calculation should have regard to the year-to-September 2014 inflation measure.

[66] For instance, when converting 2015–16 capex from nominal to real terms, inflation from September 2012 to September 2013 is used.

[67] See for example AER, *Final decision, Jemena distribution determination 2016 to 2020, Attachment 2 – Regulatory asset base*, May 2016, pp. 2-11 to 2-12.

[68] The five Victorian distributors were originally placed on an all-lagged approach when first regulated by the Essential Services Commission of Victoria, and we had maintained this approach in our previous determinations for them.

[69] AusNet Services also owns one of the five Victorian distribution networks; but the RFM indexation differs between the two networks. That is, the AusNet Services distribution network used (and continues to use) the all-lagged approach; the AusNet Services transmission network used (and in this decision continues to use) the partially-lagged approach.

[70] In particular, this material was not put before us when we published the updated transmission RFM template in October 2015. See AusNet Services (distribution), *Electricity distribution price review 2016–20, Revised regulatory proposal*, 6 January 2016, pp. 8-6 to 8-9; CitiPower, *Revised regulatory proposal 2016–2020*, 6 January 2016,

the mixed evidence for and against each of the alternative approaches. In this context, we considered that consistency with prior regulatory decisions was desirable and so maintained applying the all-lagged approach for the five Victorian distributors.

We note that the conceptual issues raised by the five Victorian distributors are relevant for all service providers using our RFM templates, both distribution and transmission. We will shortly commence a formal update of the AER's standard RFM template for distribution networks later this year.[71] That process will allow us to further evaluate the strengths and weaknesses of each indexation approach (including the un-lagged approach, which has not been applied in any recent regulatory decisions). It will also allow affected stakeholders, including other service providers and consumers, to comment. If the distribution RFM template is updated to a different approach, we would then consider the extent to which the underlying reasoning should also apply to the transmission RFM template and AusNet Services' specific circumstances. We expect that this process will be completed in time to consider the outcomes for AusNet Services' final decision.

As such, we have applied the partially-lagged indexation approach in our draft decision RFM for AusNet Services. We have replaced AusNet Services' one year lagged CPI observations so that they are recorded in the year related to their measure in the draft decision RFM. Further, we have amended the coding in the RFM to implement the same partially lagged outcomes as the RFM template. We have also updated AusNet Services' estimate of inflation for 2015–16 with actual CPI for this period, as it is now available.[72]

Capitalised provisions

AusNet Services' proposed gross capex for 2013–14 and 2014–15 in the RFM included capitalised provisions.[73] Provisions are expenditures that AusNet Services anticipates, but has not yet paid (incurred). Examples of provisions include environmental provisions, superannuation and other employment entitlements such as annual leave and long service leave.

We consider that the movement in capitalised provisions during the regulatory control period should be adjusted from capex inputs to the RFM. This approach means capitalised costs related to these provisions are only included in the RAB when they

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pp. 254–258; Jemena Electricity Networks, *2016–20 Electricity distribution price review regulatory proposal, Revocation and substitution submission*, *Attachment 5-4 Asset base roll-forward and depreciation,* 6 January 2016, pp. 1–6; Powercor, *Revised regulatory proposal 2016–2020*, 6 January 2016, pp. 248–252; and United Energy, *2016 to 2020 Revised regulatory proposal*, 6 January 2016, pp. 72–73.

[71] NER, cl. 6.5.1(b)–(d).

[72] In our final decision we will update the estimate for 2016–17 expected inflation with actual CPI. The September quarter CPI is used as a proxy for the April financial year in AusNet Services' 2014–17 regulatory control period.

[73] AusNet Services, *Response to IR004*, 18 December 2015.

are paid out (incurred) by the business.[74] This approach is consistent with adding capex as incurred and has been applied in other AER decisions.[75]

AusNet Services' proposed RFM did not account for the movement in these capitalised provisions by adjusting the value from its capex entering the RAB. The movement in capitalised provisions for 2013–14 and 2014–15 largely offset each other—the net movement in capitalised provisions is –$222,470 in 2013–14 and $225,900 in 2014–15[76]—although individual asset classes are affected differently. Our draft decision is to adjust the 2013–14 and 2014–15 gross capex in the RFM for the movement in capitalised provisions.

As-commissioned capex allocation

AusNet Services allocated $11.4 million ($ nominal) in as-commissioned capex to its 'Inventory' asset class for 2013–14 and 2014–15 in its proposed RFM. This allocation is inconsistent with the reported capex allocation in its annual regulatory accounts and the allocation of its incurred capex. In both these sources no capex was allocated to the 'Inventory' asset class. In the annual regulatory accounts this capex value was allocated to the 'Non-system – other' asset class. Following an information request to clarify this issue, AusNet Services noted a potential allocation issue with respect to 'Inventory' in its historical regulatory accounts.[77] Due to the complexity of the issue and the need to verify items in the regulatory accounts AusNet Services was unable to confirm the appropriate allocation of as-commissioned capex in time for the draft decision. It noted that any revisions would be provided as part of its revised proposal.

For this draft decision we have reallocated the proposed as-commissioned 'Inventory' capex to the 'Non-system – other' asset class, consistent with the regulatory accounts and as-incurred capex. We will revisit this issue in the final decision following further clarification from AusNet Services.

Asset disposals

AusNet Services' proposed RFM did not include any values for asset disposals. However, AusNet Services' annual regulatory accounts data reported asset disposal values for 2013–14 and 2014–15. Following an information request, AusNet Services confirmed the asset disposal values based on gross proceeds to be included in the RFM.[78] Our draft decision therefore includes asset disposal values for 2013–14 ($0.4 million) and 2014–15 ($7.4 million), consistent with the values provided by AusNet Services.

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[74] NER, cl. S6A.2.1(f)(1).

[75] See for example: AER, *Preliminary decision Ergon Energy - Attachment 2 - Regulatory asset base*, April 2015, p. 16.

[76] AusNet Services, *Response to IR004*, 18 December 2015.

[77] AusNet Services, *Response to IR017*, 03 June 2016.

[78] AusNet Services, *Response to IR004*, 18 December 2015.

2.4.2 Forecast closing RAB at 31 March 2022

We forecast a closing RAB value of $3295.7 million by 31 March 2022 for AusNet Services, which represents a reduction of $145.5 million (or 4.2 per cent) to AusNet Service' proposal. This reduction reflects our draft decision on the required inputs for determining the forecast RAB in the PTRM. To determine the forecast RAB value, we amended the following PTRM inputs:

- We reduced the opening RAB at 1 April 2017 by $34.1 million or 1.1 per cent (section 2.4.1).

- We increased the proposed expected inflation rate of 2.35 per cent per annum to 2.44 per cent per annum (attachment 3). This results in an increase to the indexation of the RAB component for the 2017–22 regulatory control period by $5.8 million ($ nominal) or 1.5 per cent.

- We reduced AusNet Services' proposed forecast capex for the 2017–22 regulatory control period by $192.8 million ($ nominal) or 23.7 per cent (attachment 6).

- We reduced AusNet Services' proposed forecast depreciation for the 2017–22 regulatory control period by $75.6 million ($ nominal) or 7.6 per cent (attachment 5).

Figure 2.2 shows the key drivers of the change in AusNet Services' RAB over the 2017–22 regulatory control period for this draft decision. Overall, the closing RAB at the end of the 2017–22 regulatory control period is forecast to be 3.2 per cent higher than the opening RAB at the start of that period, in nominal terms.[79] The approved forecast net capex increases the RAB by about 19 per cent, while expected inflation increases it by about 12 per cent. Forecast depreciation, on the other hand, reduces the RAB by about 29 per cent.

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[79] However, the RAB value will further increase when Group 3 assets are rolled in at the commencement of the 2022–27 regulatory control period.

Figure 2.2   Key drivers of changes in the RAB ($ million, nominal)
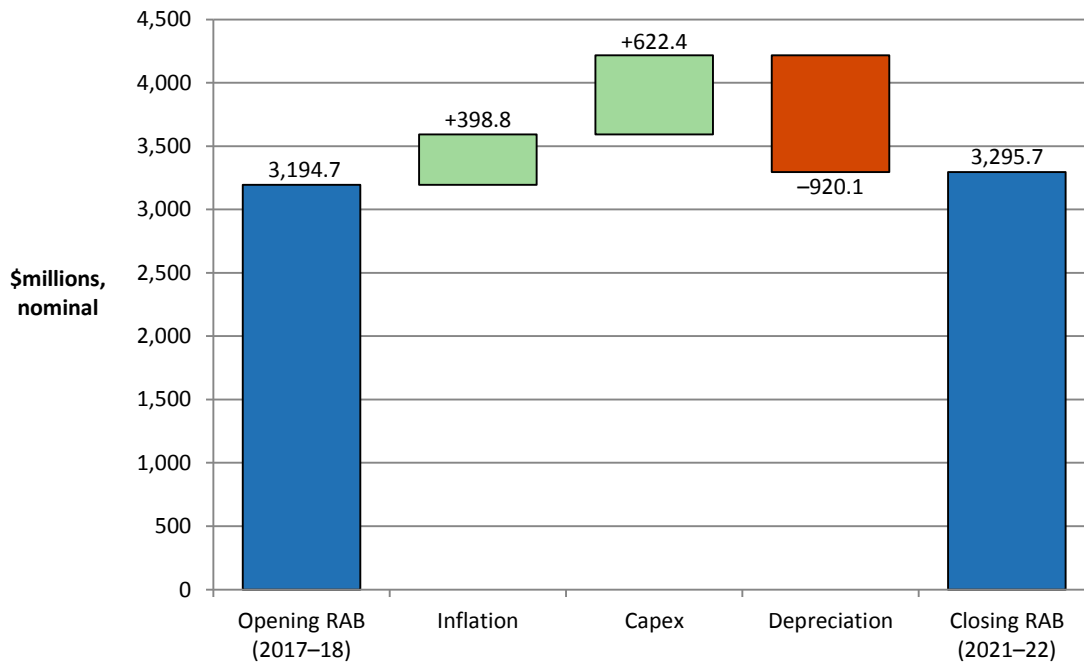
Source: AER analysis.

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

AusNet Services proposed to use the forecast depreciation approach to roll forward the RAB for the commencement of its 2022–27 regulatory control period, consistent with our *Framework and approach*.[80]

We accept AusNet Services' forecast depreciation approach to roll forward the RAB for the commencement of its 2022–27 regulatory control period.[81] This approach was signalled in the AER's *Framework and approach*. As discussed in attachment 10, AusNet Services is not currently subject to a capital expenditure sharing scheme (CESS) but we will apply the CESS to AusNet Services over the 2017–22 regulatory control period. We consider this scheme will provide sufficient incentives for AusNet Services to achieve capex efficiency gains over that period. We are satisfied that the use of a forecast depreciation approach in combination with the application of the CESS and our other ex post capex measures are sufficient to achieve the capex incentive objective.[82]

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[80]   AER, *Final decision: Framework and approach paper for AusNet Services – Regulatory control period commencing 1 April 2017*, pp. 27–29.

[81]   AusNet Services, *Revenue proposal*, October 2015, p. 174.

[82]   Our ex post capex measures are set out in the capex incentives guideline: AER, *Capex incentives guideline*, November 2013, pp. 13–19, 20–21. The guideline also sets out how all our capex incentive measures are consistent with the capex incentive objective.