DRAFT DECISION
Murraylink transmission determination
2018 to 2023

Attachment 2 – Regulatory asset base

September 2017

AUSTRALIAN ENERGY REGULATOR

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Note

This attachment forms part of the AER's draft decision on Murraylink's transmission determination for 2018–23. It should be read with all 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

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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
DMIA	demand management innovation allowance
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
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

Shortened form	Extended form
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 Murraylink 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 2018–23 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 July 2018 for Murraylink. It also presents our forecast RAB values for Murraylink over the 2018–23 regulatory control period.

2.1 Draft decision

We do not accept Murraylink's proposed opening RAB of $114.2 million ($nominal) as at 1 July 2018.[5] We instead determine an opening RAB value of $114.3 million ($nominal) as at 1 July 2018. This is because we made the following amendments to the inputs of Murraylink's proposed roll forward model (RFM):

- applied the depreciation values based on actual capex rather than forecast capex, to be consistent with our final decision for Murraylink's 2013–18 regulatory control period
- changed the standard asset life for the 'Test equipment' asset class from 10 years to 'not applicable', to be consistent with our final decision for Murraylink's 2013–18 regulatory control period
- corrected the actual capex allocation for 2013–14 from the 'Switchyard' asset class to 'Other operating assets' asset class, to be consistent with Murraylink's regulatory accounts for 2013–14
- updated Murraylink's estimate of inflation for 2016–17 with actual CPI, as it is now available.

These amendments increased the opening RAB as at 1 July 2018 by $0.2 million (or 0.05 per cent) compared with the proposal.

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1 NER, cll. 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.

To determine the opening RAB as at 1 July 2018, we have rolled forward the RAB over the 2013–18 regulatory control period to determine a closing RAB value at 30 June 2018. This roll forward includes an adjustment at the end of the 2013–18 regulatory control period to account for the difference between actual 2012–13 capex and the estimate approved at the 2013–18 determination.[6]

Table 2.1 sets out our draft decision on the roll forward of the RAB values for Murraylink over the 2013–18 regulatory control period.

Table 2.1 AER's draft decision on Murraylink's RAB for the 2013–18 regulatory control period ($million, nominal)

	2013–14	2014–15	2015–16	2016–17 [a]	2017–18 [b]
Opening RAB	106.7	106.7	105.3	103.9	110.0
Capital expenditure [c]	0.3	0.7	0.9	7.7	7.5
Inflation indexation on opening RAB [d]	3.1	1.4	1.4	2.2	2.2
Less: straight-line depreciation [e]	3.4	3.6	3.7	3.8	4.0
Closing RAB	106.7	105.3	103.9	110.0	115.7
Difference between estimated and actual capex (1 July 2012 to 30 June 2013)					–1.0
Return on difference for 2012–13 capex					–0.4
Opening RAB as at 1 July 2018					**114.3**

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 Murraylink. We expect to update the RAB roll forward with 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 2017–18 in the final decision.

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

We determine a forecast closing RAB value at 30 June 2023 of $119.8 million ($nominal). This is $3.9 million (or 3.2 per cent) lower than the amount of $123.8 million ($nominal) proposed by Murraylink. Our draft decision on the forecast closing RAB reflects the amended opening RAB as at 1 July 2018, 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 Murraylink over the 2018–23 regulatory control period.

[6] The end of period adjustment will be positive (negative) if actual capex is higher (lower) than the estimate approved at the 2013–18 determination.

Table 2.2 AER's draft decision on Murraylink's RAB for the 2018–23 regulatory control period ($million, nominal)

	2018–19	2019–20	2020–21	2021–22	2022–23
Opening RAB	114.3	114.6	122.3	127.6	125.4
Capital expenditure[a]	4.2	11.8	9.6	2.2	0.9
Inflation indexation on opening RAB	2.9	2.9	3.1	3.2	3.1
Less: straight-line depreciation[b]	6.7	7.0	7.3	7.7	9.5
Closing RAB	114.6	122.3	127.6	125.4	119.8

Source: AER analysis.

(a) As-incurred. In accordance with the timing assumptions of the post-tax revenue model (PTRM), the capex includes a half-WACC allowance to compensate for the six month period before capex is added to the RAB for revenue modelling.

(b) Based on as-commissioned capex.

We determine that the forecast depreciation approach is to be used to establish the opening RAB at the commencement of the 2023–28 regulatory control period for Murraylink.[7] We consider this approach will provide sufficient incentives for Murraylink to achieve capex efficiency gains over the 2018–23 regulatory control period.

2.2 Murraylink's proposal

Murraylink used our RFM to establish an opening RAB as at 1 July 2018 and our post-tax revenue model (PTRM) to roll forward the RAB over the 2018–23 regulatory control period.

Murraylink proposed an opening RAB value as at 1 July 2013 of 106.7 million ($nominal).[8] Rolling forward this RAB and using depreciation based on forecast capex (approved for the 2013–18 regulatory control period, Murraylink proposed a closing RAB as at 30 June 2018 of $114.2 million ($nominal). Table 2.3 presents Murraylink's proposed roll forward of its RAB during the 2013–18 regulatory control period.

7 NER, cl. S6A.2.2B(a).

8 Murraylink, *Revenue proposal*, 31 January 2017, p. 25.

Table 2.3 Murraylink's proposed RAB for the 2013–18 regulatory control period ($million, nominal)

	2013–14	2014–15	2015–16	2016–17[a]	2017–18[a]
Opening RAB	106.7	106.7	105.3	103.9	109.9
Capital expenditure[b]	0.3	0.7	0.9	7.7	7.5
CPI indexation on opening RAB	3.1	1.4	1.4	2.1	2.2
Less: Straight-line depreciation[c]	3.4	3.6	3.7	3.8	3.9
Closing RAB	106.7	105.3	103.9	109.9	115.6
Difference between estimated and actual capex (1 July 2012 to 30 June 2013)					–1.0
Return on difference for 2012–13 capex					–0.4
Opening RAB as at 1 July 2018					**114.2**

Source: Murraylink, *Revenue proposal Attachment 5.1 – RAB roll forward model,* 31 January 2017.

(a) Based on estimated capex.

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

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

Murraylink proposed a closing forecast RAB as at 30 June 2023 of $123.8 million ($nominal). This value reflects its proposed opening RAB, forecast capex, expected inflation, and depreciation (based on forecast capex) over the 2018–23 regulatory control period. Its projected RAB over the 2018–23 regulatory control period is shown in Table 2.4.

Table 2.4 Murraylink's proposed RAB for the 2018–23 regulatory control period ($million, nominal)

	2018–19	2019–20	2020–21	2021–22	2022–23
Opening RAB	114.2	115.8	125.8	132.6	130.1
Capital expenditure[a]	6.0	14.7	11.8	2.6	1.1
Inflation indexation on opening RAB	2.3	2.3	2.5	2.7	2.6
Less: straight-line depreciation[b]	6.7	7.1	7.5	7.8	10.0
Closing RAB	**115.8**	**125.8**	**132.6**	**130.1**	**123.8**

Source: Murraylink, *Revenue proposal Attachment 10.1 – PTRM,* 31 January 2017.

(a) As-incurred, inclusive of the half-WACC to account for the timing assumptions in the PTRM.

(b) Based on as-commissioned capex.

2.3 Assessment approach

We roll forward Murraylink's RAB during the 2013–18 regulatory control period to establish the opening RAB at 1 July 2018. This value can be adjusted for any

differences in forecast and actual capex, and disposals.[9] 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.[10]

To determine the opening RAB, we developed an asset base RFM that a TNSP must use in preparing its revenue proposal.[11] The RFM rolls forward Murraylink's RAB from the beginning of the final year of the 2008–13 regulatory control period,[12] through the 2013–18 regulatory control period, to the beginning of the 2018–23 regulatory control period. The roll forward occurs for each year by:

- Adding an inflation (indexation) adjustment to the opening RAB for the relevant year. This adjustment is consistent with the inflation factor used in the annual indexation of the maximum allowed revenue (MAR).[13]
- Adding actual or estimated capex to the RAB for the relevant year.[14] We review a TNSP's past capex and may exclude past capex from being rolled into the RAB where total capex exceeds the regulatory allowance.[15] The details of our assessment approach for capex overspend are set out in the *Capital expenditure incentive guideline*.[16] Under the transitional rules, our review of past capex does not apply to Murraylink prior to 1 July 2014.[17] Also, the review of past capex does not include the last two years of the 2013–18 regulatory control period—these will instead be reviewed at the next reset.[18] We check actual capex amounts against audited regulatory accounts data and generally accept the capex reported in those accounts in rolling forward the RAB.[19] However, there may be instances where adjustments are required to the annual regulatory accounts data.[20]
- 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 Murraylink's 2013–18 regulatory control period.[21] Depreciation

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9 NER, cll. S6A.2.1(f)(3) and (6).

10 NER, cll. S6A.2.1(f)(8) and S6A.2.3.

11 NER, cll. 6A.6.1(b), 6A.6.1(e) and S6A.1.3(5).

12 The roll forward commences in the final year of the 2008–13 regulatory control period to allow us to adjust for the difference between actual 2012–13 capex and the estimated 2012–13 capex used in our 2013 transmission determination. See NER, cl. S6A.2.1(f)(3).

13 NER, cl. 6A.6.1(e)(3).

14 NER, cl. S6A.2.1(f)(4).

15 NER, cl. S6A.2.2A.

16 AER, *Capital expenditure incentive guideline for electricity network service providers*, November 2013, pp. 12–20. Under the NER, cl S6A.2.2A(b), the exclusion of inefficient capex could only come from three areas: overspend in capex, margin paid to third party and capitalisation of opex as defined in cll. S6A.2.2A (c), (d) and (e) of the NER.

17 NER, cl. 11.63.

18 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.

19 We will update any estimated capex with actual capex at the time of the next reset.

20 For example, we may make adjustment for movements in provisions if the actual capex amounts reported in the RIN include capitalised provisions.

21 NER, cl. S6A.2.1(f)(5).

based on forecast or actual capex can be used to roll forward the RAB.[22] For this draft decision, we use depreciation based on actual capex for rolling forward the RAB for Murraylink's 2013–18 regulatory control period.[23]

- Subtracting any gross proceeds for asset disposals for the relevant year from capex to be added to the RAB.[24] 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 2013–18 regulatory control period. The PTRM used to calculate the annual building block revenue requirement for the 2018–23 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.

We also decide whether depreciation for establishing Murraylink's RAB as at the commencement of the 2023–28 regulatory control period is to be based on actual or forecast capex.[25]

The opening RAB for the 2023–28 regulatory control period can be determined using depreciation based either on forecast or actual capex incurred during the 2018–23 regulatory control period. To roll forward the RAB using depreciation based on forecast capex, we would use the forecast depreciation contained in the PTRM for the 2018–23 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 2018–23 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:[26]

- 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

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22 NER, cl. 6A 4.2(a1).

23 The use of actual depreciation is consistent with the depreciation approach established in the 2013–18 transmission determination for Murraylink, which reflected the rules at the time. AER, *Final Decision Murraylink Transmission determination 2013–2014 to 2017–2018*, April 2013, p. 42, footnote 144.

24 NER, cl. S6A.2.1(f)(6).

25 NER, cl. S6A.2.2B(a).

26 NER, cl. S6A.2.2B(c).

- 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.[27] 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[28]
- 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 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 WACC, 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.[29] A nominal rate of return (WACC) is multiplied by the opening RAB to produce the return on capital building block.[30] To prevent the double counting of inflation through the nominal WACC and

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27 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.

28 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.

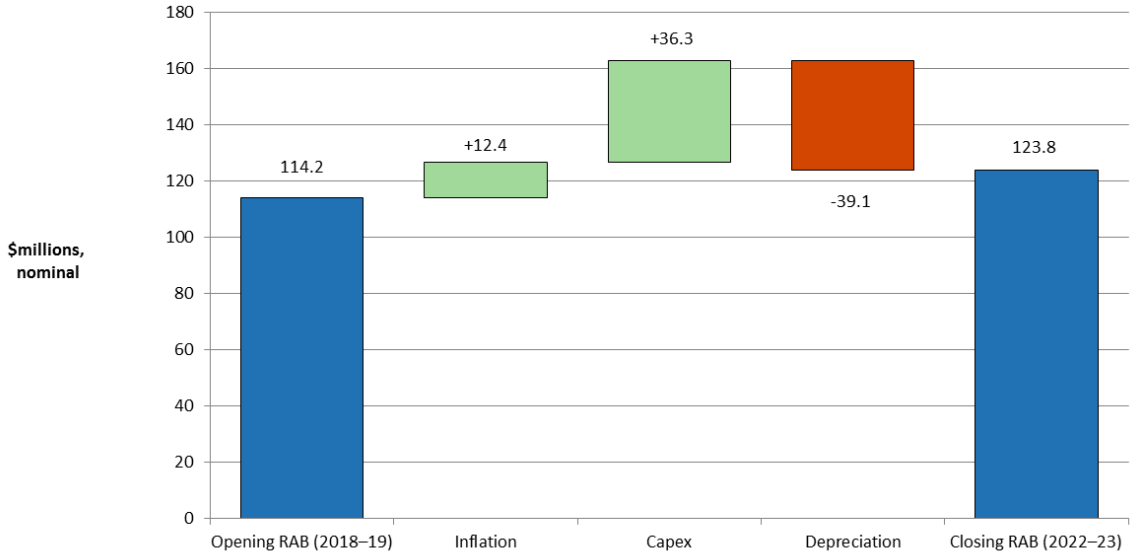
29 NER, cll. 6A.5.4(b)(1) and 6A.6.1(e)(3).

30 NER, cll. 6A.6.2(a) and 6A.6.2(d)(2).

indexed RAB,[31] the regulatory depreciation building block has an offsetting reduction for indexation of the RAB.[32] 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.[33] The implications of an un-indexed RAB are discussed further in attachment 5.

Figure 2.1 shows the key drivers of the change in the RAB over the 2018–23 regulatory control period as proposed by Murraylink. Overall, the closing RAB at the end of the 2018–23 regulatory control period would be 8.3 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 31.7 per cent, while expected inflation increases it by 10.8 per cent. Forecast depreciation, on the other hand, reduces the RAB by 34.2 per cent.

Figure 2.1 Key drivers of changes in the RAB ($million, nominal)



Source: Murraylink – *Attachment 10.1 – PTRM* – 20170131.

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

[32] 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. Please also refer to section 5.3.1 of attachment 5 of this draft decision for further explanation of the offsetting adjustment to the depreciation.

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

Murraylink's proposed forecast depreciation for the 2018–23 regulatory control period is $39.1 million ($nominal). We have largely accepted Murraylink's depreciation proposal, subject to some updates, as it satisfies the requirements of the NER in terms of the assigned asset lives for existing asset classes. This is discussed in attachment 5. The depreciation amount largely depends on the opening RAB, which in turn depends on capex in the past.[34]

Forecast net capex is also a significant driver of the increase in the RAB. We are not satisfied Murraylink's proposed total forecast capex of $36.3 million ($nominal) for the 2018–23 regulatory control period reasonably reflects the capex criteria. We have therefore rejected Murraylink's proposed capex and have substituted our estimate of $28.7 million ($nominal) for the 2018–23 regulatory control period.[35] 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 7.4 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.[36]

2.4 Reasons for draft decision

We determine an opening RAB value for Murraylink of $114.3 million ($nominal) as at 1 July 2018, an increase of $0.1 million ($nominal) or 0.05 per cent from the proposed value. We forecast a closing RAB value of $119.8 million by 30 June 2023. This represents a reduction of $3.9 million, or 3.2 per cent compared to Murraylink's proposal. The reasons for our draft decision are discussed below.

2.4.1 Opening RAB at 1 July 2018

We do not accept Murraylink's proposed opening RAB of $114.2 million ($nominal) as at 1 July 2018.[37] We instead determine an opening RAB value of $114.3 million ($nominal) as at 1 July 2018. This represents an increase of $0.1 million (or 0.05 per cent).

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34 For this draft decision, we have included Murraylink's estimated capex in 2016–17 and 2017–18 in the RAB roll forward to 1 July 2018. At the next reset, the 2016–17 and 2017–18 capex will form part of the review period for whether past capex should be excluded for inefficiency reasons.

35 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.

36 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 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 forecast inflation rate.

37 This RAB value is based on as-incurred capex.

To determine the opening RAB as at 1 July 2018 we have rolled forward the RAB over the 2013–18 regulatory control period to determine a closing RAB value as at 30 June 2018. In doing so we reviewed the key inputs of Murraylink's proposed RFM, such as actual inflation, rate of return, gross capex values and asset lives. While we found that the majority of the inputs in the proposed RFM are correct, some proposed inputs do not reconcile with relevant data sources such as regulatory accounts and the 2013–18 decision models.[38] Therefore, we made the following amendments to Murraylink's proposed RFM inputs:

- applied the depreciation values based on actual capex rather than forecast capex, which is consistent with our final decision for Murraylink's 2013–18 regulatory control period[39]
- changed the standard asset life for the 'Test equipment' asset class from 10 years to 'not applicable', which is consistent with our final decision for Murraylink's 2013–18 regulatory control period
- corrected the actual capex allocation for 2013–14 from the 'Switchyard' asset class to 'Other operating assets' asset class, to be consistent with Murraylink's regulatory accounts for 2013–14
- updated Murraylink's estimate of inflation for 2016–17 with actual CPI, as it is now available.[40]

The reasons for our decision are discussed below.

2.4.1.1 Depreciation approach for establishing the opening RAB

We do not accept Murraylink's proposal to apply depreciation values that are based on forecast capex in rolling forward the RAB over the 2013–18 regulatory control period. We consider that the depreciation values should be based on actual capex, not the forecast approved for the 2013–18 regulatory control period. This is consistent with our final decision for Murraylink's 2013–18 regulatory control period.[41]

The final decision for Murraylink's 2013–18 regulatory control period was made prior to the *Capital expenditure incentive guideline*.[42] The rules applied at the time of the 2013 decision required actual depreciation values to be used for establishing the opening RAB as at 1 July 2018.[43] We have therefore applied the actual depreciation amount based on actual capex commissioned during the 2013–18 regulatory control period in

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38 At the time of this draft decision, the roll forward of Murraylink's RAB includes estimated capex values for 2016–17 and 2017–18. We will update the 2016–17 estimated capex with actuals in the final decision. We may also update the 2017–18 estimated capex with a revised estimate in the final decision.

39 This results in an upward adjustment of around $0.2million to the opening RAB at 1 July 2018, based on Murraylink's proposal.

40 In our final decision we will update the estimate for 2017–18 expected inflation with actual CPI. The March quarter CPI is used as a proxy for the June financial year in Murraylink's 2013–18 regulatory control period.

41 AER, *Final Decision: Murraylink Transmission Determination 2013–18,* April 2013, p. 42.

42 AER, *Capital expenditure incentive guideline for electricity network service providers*, November 2013.

43 NER, cl.11.63.

establishing the opening RAB as at 1 July 2018. This amendment will slightly increase the opening RAB as at 1 July 2018 by about $0.2 million.[44]

2.4.1.2 Test equipment asset class

We do not accept Murraylink's proposal to apply a standard asset life of 10 years to the 'Test equipment' asset class in rolling forward its RAB over the 2013–18 regulatory control period. This is because this standard asset life was not approved in our 2013 final decision for Murraylink's 2013–18 regulatory control period.[45]

In our 2013 decision, we did not approve a standard asset life for Murraylink's proposed 'Test equipment' asset class because Murraylink did not propose any forecast capex for this asset class. Therefore, we were not required to assess the proposed standard asset life at the time, nor approve the proposed standard asset life for this asset class.[46]

The depreciation values used for establishing Murraylink's opening RAB as at 1 July 2018 should be based on the rates and methods allowed in the transmission determination for the 2013–18 regulatory control period.[47] Therefore, we cannot retrospectively apply a new asset class or asset life for the purposes of rolling forward the RAB during the 2013–18 regulatory control period. We have therefore changed the standard asset life for the 'Test equipment' asset class to 'not applicable' in the RFM to be consistent with the 2013 final decision. Accordingly, there is no depreciation for the 'Test equipment' asset class over the 2013–18 regulatory control period.

Murraylink has allocated $0.03 million actual capex to the 'Test equipment' asset class in 2015–16. We have reallocated this actual capex to an approved asset class which has a similar standard asset life to the proposed 10 year life for test equipment in the RFM.[48] This amendment allows the actual depreciation value applied for the purposes of rolling forward the RAB to be based on the standard asset lives approved in the 2013 final decision.

In attachment 5, we discuss Murraylink's proposed standard asset life of 10 years for the 'Test equipment' asset class for the 2018–23 regulatory control period. We did not retain this asset class and the proposed standard asset life in the PTRM because we did not accept the proposed forecast capex allocated to this asset class for the 2018–23 regulatory control period.

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44 The increase is based on Murraylink's proposed RFM.

45 NER, S6A.2.1(f)(5).

46 Murraylink proposed to apply a standard asset life of 10 years for the 'Test equipment' asset class for depreciation purposes for the 2018–23 regulatory control period. We set out our consideration of this in the depreciation attachment 5.

47 NER, S6A.2.1(f)(5).

48 This actual capex has been allocated to the 'Ancillary 7 - pressure vessel testing and inspection' asset class which has a standard asset life of 7 years.

2.4.1.3 Other minor input amendments

We corrected the actual capex allocation for 2013–14 from the 'Switchyard' asset class to 'Other operating assets' asset class, to be consistent with Murraylink's regulatory accounts for 2013–14. We identified this input error when reconciling Murraylink's proposed RFM with the actual capex values in the regulatory accounts for 2013–14. We have clarified this error with Murraylink via an information request and have amended the RFM accordingly.[49]

We also updated the inflation input for 2016–17 in the RFM to reflect the March Quarter 2017 CPI as it has since become available after Murraylink submitted its proposal.

2.4.1.4 Review of past capital expenditure

We consider the extent to which our roll forward of the RAB to 1 July 2018 contributes to the achievement of the capital expenditure incentive objective.[50] Under the transitional rules, in making this transmission determination, the review of past capex does not apply to Murraylink prior to 1 July 2014.[51] Given this, the review period for this transmission determination is limited to 2014–15 and 2015–16 capex.[52] Murraylink's actual capex incurred in 2014–15 and 2015–16 are below the forecast allowance set at the previous transmission determination. Therefore, the overspending requirement for an efficiency review of past capex is not satisfied.[53] Accordingly, the capex incurred in those years are regarded as prudent and efficient, and included in the RAB—this is discussed further in attachment 6.

Further, for the purposes of this draft decision, we have included Murraylink's estimated capex in 2016–17 and 2017–18 in the RAB roll forward to 1 July 2018. At the next reset, the 2016–17 and 2017–18 capex will form part of the review period for whether past capex should be excluded for inefficiency reasons.[54] Our RAB roll forward applies the incentive framework approved in the previous transmission determination, which included the use of an actual depreciation approach.[55] As such, we consider that the 2013–18 RAB roll forward contributes to an opening RAB (as at 1 July 2018) that includes capex that reflects prudent and efficient costs, in accordance with the capital expenditure criteria.[56]

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49 Murraylink, *Response to information request # 003 – Test Equipment Asset Class questions,* 24 March 2017.

50 NER, cl. 6A.14.2(b).

51 NER, cl. 11.63.

52 NER, cl. S6A.2.2A(a1).

53 NER, cl. S6A.2.2A(c).

54 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 ex post assessment approach for capex are set out in AER, *Capital expenditure incentive guideline for electricity network service providers*, November 2013, pp. 12–20.

55 The use of actual depreciation is consistent with the depreciation approach established in the 2013–18 transmission determination for Murraylink, which reflected the rules at the time.

56 NER, cll. 6A.5A(a), 6A.6.7(a), 6A.6.7(c) and 6A.14.2(b).

However, we do have concerns with the size of the forecast capex, the largest driver of the increase in the RAB over the 2018–23 regulatory control period, proposed by Murraylink. Submissions from Central Irrigation Trust, Business SA, Department of the Premier and Cabinet South Australia, and the Consumer Challenge Panel Sub-Panel 9 all raised concerns over the size of the proposed forecast capex.[57] In this draft decision we have reduced Murraylink's proposed forecast capex by $7.5 million ($nominal), or 20.8 per cent over the 2018–23 regulatory control period. Attachment 6 discusses our draft decision on forecast capex.

2.4.2 Forecast closing RAB at 30 June 2023

We forecast a closing RAB value of $119.8 million by 30 June 2023 for Murraylink, which represents a reduction of $3.9 million (or 3.2 per cent) to Murraylink's proposal. This reduction reflects our draft decision on the inputs for determining the forecast RAB in the PTRM.

The submission from Central Irrigation Trust on the proposal raised concerns with the increase to the size of Murraylink's RAB over the 2018–23 regulatory control period.[58] The change in the size of the RAB depends on our assessment of its various components. Inflation and capex increase the RAB, while depreciation reduces it. To determine the forecast RAB value for Murraylink, we amended the following PTRM inputs:

- We increased Murraylink's proposed opening RAB as at 1 July 2018 by $0.1 million ($nominal) or 0.05 per cent (section 2.4.1).
- We reduced Murraylink's proposed forecast capex for the 2018–23 regulatory control period by $7.5 million ($nominal) or 20.8 per cent (attachment 6).
- We reduced Murraylink's proposed forecast depreciation for the 2018–23 regulatory control period by $0.8 million or 2.1 per cent (attachment 5).
- We increased the proposed expected inflation rate which increased the forecast RAB value by $2.7 million or 22.1 per cent (attachment 3).

Figure 2.2 shows the key drivers of the change in Murraylink's RAB over the 2018–23 regulatory control period for this draft decision. Overall, the closing RAB at the end of the 2018–23 regulatory control period is forecast to be 4.8 per cent higher than the opening RAB at the start of that period, in nominal terms. The approved forecast net capex increases the RAB by 25.1 per cent, while expected inflation increases it by 13.2 per cent. Forecast depreciation, on the other hand, reduces the RAB by 33.5 per cent.

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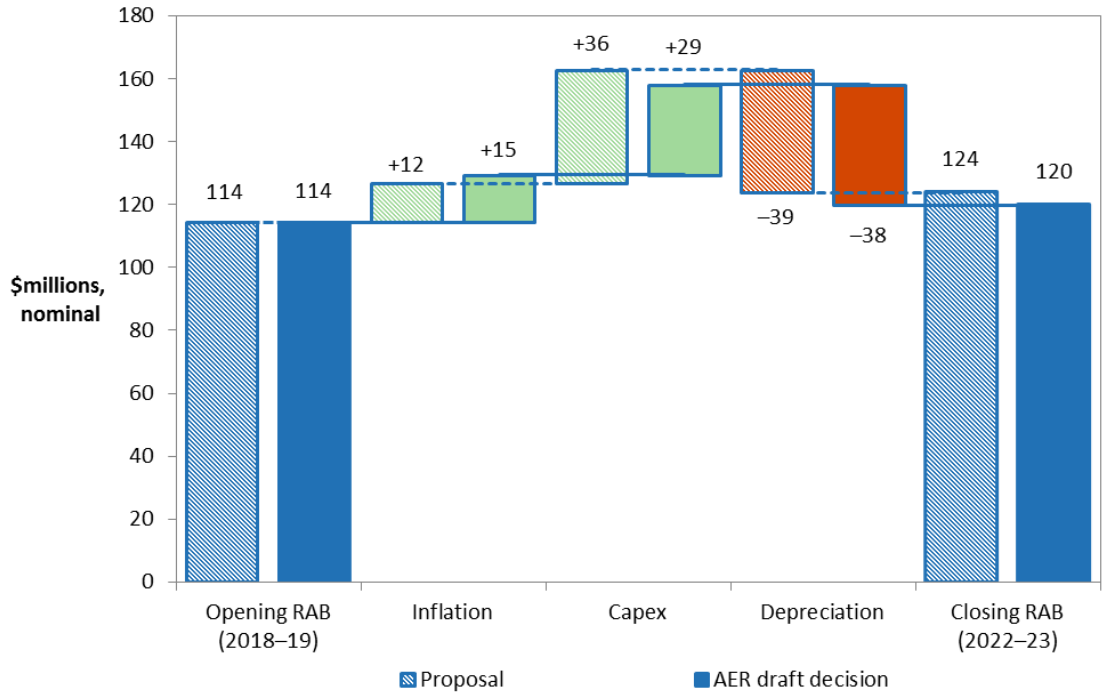
[57] Central Irrigation Trust, *CIT Submission to Murraylink Revenue Proposal 2018–2023,* 2 March 2017, p. 2. Business SA, *Submission on Murraylink's Revenue Proposal for the regulatory period 2018–23,* 12 May 2017, pp. 2–3. Department of the Premier and Cabinet South Australia, *Murraylink electricity transmission revenue proposal for 1 July 2018 - 30 June 2023,* 17 May 2017, p. 1. Consumer Challenge Panel Sub-Panel 9, *Response to proposals from Murraylink for a revenue reset for the 2018–23 regulatory period,* 12 May 2017, pp. 9–11.

[58] Central Irrigation Trust, *CIT Submission to Murraylink revenue proposal 2018–2023*, 2 March 2017, p. 2.

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

We determine that the depreciation approach to be applied to establish Murraylink's RAB at the commencement of the 2023–28 regulatory control period will be based on the depreciation schedules (straight-line) using forecast capex at the asset class level approved for the 2018–23 regulatory control period. We consider this approach will provide sufficient incentives for Murraylink to achieve capex efficiency gains over the 2018–23 regulatory control period.

The use of forecast depreciation to establish the opening RAB at the commencement of the 2023–28 regulatory control period represents a change of approach from the 2013 decision for Murraylink. As discussed in section 2.4.1, we used actual depreciation to establish Murraylink's opening RAB as at 1 July 2018. This approach is consistent with the final decision for Murraylink's 2013–18 regulatory control period. The rules applied at the time of the 2013 decision required actual depreciation values to be used for establishing the opening RAB as at 1 July 2018.[59]

[59] *AER, Final Decision Murraylink Transmission determination 2013–2014 to 2017–2018*, April 2013, pp. 42, footnote 144.

Since the 2013 decision, we developed the *Capital expenditure incentives guideline* which included the capital expenditure sharing scheme (CESS).[60] The depreciation approach is one part of the overall capex incentive framework. The objective in deciding whether to use depreciation based on forecast capex or actual capex is to ensure that the overall ex ante incentives are appropriate for a TNSP to undertake efficient capex. Where a CESS is applied, using forecast depreciation maintains the incentives for a TNSP to pursue capex efficiencies, whereas using actual depreciation would increase these incentives. There is more information on depreciation as part of the overall capex incentive framework in our capex incentives guideline.[61]

Murraylink did not propose a depreciation approach to roll forward the RAB for the commencement of its 2023–28 regulatory control period. However, we consider that the forecast depreciation approach should be used to established the opening RAB as at 1 July 2023. This approach is consistent with the AER's *Framework and approach*.[62] As discussed in attachment 10, while Murraylink is not currently subject to the CESS, we will apply the CESS to Murraylink over the 2018–23 regulatory control period. We consider that the CESS will provide sufficient incentives for Murraylink 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.[63]

60 AER, *Capital expenditure incentive guideline for electricity network service providers*, November 2013.

61 AER, *Capital expenditure incentive guideline for electricity network service providers*, November 2013, pp. 10–12.

62 AER, *Final decision: Framework and approach for Murraylink*, July 2016, pp. 24–26.

63 Our ex post capex measures are set out in the capex incentives guideline, AER, *Capital expenditure incentive guideline for electricity network service providers*, 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.