



DRAFT DECISION

Directlink

Transmission Determination

2020 to 2025

Attachment 4

Regulatory depreciation

October 2019

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Note

This attachment forms part of the AER's draft decision on Directlink's 2020–25 transmission determination. It should be read with all other parts of the draft decision.

The draft decision includes the following attachments:

Overview

Attachment 1 – Maximum allowed revenue

Attachment 2 – Regulatory asset base

Attachment 3 – Rate of return

Attachment 4 – Regulatory depreciation

Attachment 5 – Capital expenditure

Attachment 6 – Operating expenditure

Attachment 7 – Corporate income tax

Attachment 8 – Efficiency benefit sharing scheme

Attachment 9 – Capital expenditure sharing scheme

Attachment 10 – Service target performance incentive scheme

Attachment 11 – Pricing methodology

Attachment 12 – Pass through events

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Shortened forms

Shortened form	Extended form
AER	Australian Energy Regulator
capex	capital expenditure
NER	national electricity rules
NPV	net present value
opex	operating expenditure
PTRM	post-tax revenue model
RAB	regulatory asset base
RFM	roll forward model
SL	straight-line
TNSP	transmission network service provider
WACC	weighted average cost of capital
WARL	weighted average remaining lives

4 Regulatory depreciation

Regulatory depreciation is the allowance provided so capital investors recover their investment over the economic life of the asset (return of capital). In deciding whether to approve the depreciation schedules submitted by Directlink, we make determinations on the indexation of the regulatory asset base (RAB) and depreciation building blocks for Directlink's 2020–25 regulatory control period.¹ The regulatory depreciation allowance is the net total of the straight-line (SL) depreciation less the indexation of the RAB.

This attachment sets out our draft decision on Directlink's regulatory depreciation allowance. It also presents our draft decision on the proposed depreciation schedules, including an assessment of the proposed standard and remaining asset lives used for calculating the SL depreciation.

4.1 Draft decision

We determine a regulatory depreciation allowance of \$21.5 million (\$nominal) for Directlink for the 2020–25 regulatory control period. Directlink proposed a regulatory depreciation allowance of \$22.9 million (\$nominal).² Our draft decision represents a decrease of \$1.5 million (or 6.5 per cent) on the proposed amount. This decrease occurs mainly as a consequence of our determinations on other components of Directlink's proposal that affect the forecast regulatory depreciation allowance. Specifically, they relate to:

- the opening RAB as at 1 July 2020 (attachment 2)
- the expected inflation rate (attachment 3)
- forecast capital expenditure (attachment 5) including its effect on the projected RAB over the 2020–25 regulatory control period.³

For our draft decision on Directlink's regulatory depreciation:

- we accept Directlink's proposed SL depreciation method used to calculate the regulatory depreciation allowance
- we accept Directlink's proposed asset classes and standard asset lives, with the following exceptions:
 - we largely accept Directlink's proposal to merge its current asset classes into a new single asset class labelled 'Transmission assets.' However, we have separated out land and easements assets into new asset classes labelled 'Land' and 'Easements' respectively (section 4.4.1)

¹ NER, cl. 6A.5.4 and 6A.14.1.

² Directlink, *Revenue Proposal 2020-25, Attachment 12-1 - Post Tax Revenue Model*, 31 January 2019.

³ Capex enters the RAB net of forecast disposals. It includes equity raising costs (where relevant) and the half-year WACC to account for the timing assumptions in the PTRM. Our draft decision on the RAB (attachment 2) also reflects our updates to the WACC for the 2020–25 regulatory control period.

- we do not accept the proposed new 'Restoration and rectification' asset class and its associated standard asset life of 21.2 years. This is because we do not approve the proposed forecast capex associated with this asset class (section 4.4.1 and attachment 5)
- we have included a new 'Buildings' asset class to the post-tax revenue model (PTRM) to implement the changes arising from the tax review (section 4.4.1 and attachment 7). We have assigned a standard asset life of 21.2 years to this asset class, consistent with the remaining technical life of Directlink (section 4.4.2)
- we accept Directlink's proposed remaining asset life as at 1 July 2020 for depreciating its existing assets. This is because the remaining asset life reflects the remaining technical life of Directlink. This approach is the same as that approved in our previous determination (section 4.4.2).

Table 4-1 sets out our draft decision on the annual regulatory depreciation allowance for Directlink's 2020–25 regulatory control period.

Table 4-1 AER's draft decision on Directlink's depreciation allowance for the 2020–25 regulatory control period (\$million, nominal)

	2020–21	2021–22	2022–23	2023–24	2024–25	Total
Straight-line depreciation	6.9	7.6	8.1	8.6	9.0	40.3
Less: inflation indexation on opening RAB	3.6	3.7	3.8	3.8	3.9	18.8
Regulatory depreciation	3.4	3.9	4.3	4.7	5.2	21.5

Source: AER analysis.

4.2 Directlink's proposal

For the 2020–25 regulatory control period, Directlink proposed a total forecast regulatory depreciation allowance of \$22.9 million (\$nominal). To calculate the depreciation allowance, Directlink proposed to use:⁴

- the SL depreciation method employed in the Australian Energy Regulator's (AER's) PTRM
- the closing RAB value at 30 June 2020 derived from the AER's roll forward model (RFM)
- the proposed forecast capital expenditure (capex) for the 2020–25 regulatory control period
- an expected inflation rate of 2.41 per cent per annum for the 2020–25 regulatory control period

⁴ Directlink, *Revenue proposal 2020-25, Attachment 12-1 - Post Tax Revenue Model*, 31 January 2019; Directlink, *Revenue proposal 2020-25, Attachment 7-1 - Transmission roll forward model*, 31 January 2019.

- a new asset class labelled 'Transmission assets' that merges together its existing 'Converter stations', 'Transmission lines', and 'Easements' asset classes
- remaining asset life at 1 July 2020 that aligns with the remaining technical life of Directlink, as approved in our 2015–20 transmission determination for Directlink
- a new asset class labelled 'Restoration and rectification' proposed for allocating certain works in its forecast capex for the 2020–25 regulatory control period
- standard asset lives, which align with the remaining technical life of Directlink, for depreciating its forecast capex for the 2020–25 regulatory control period. This approach is also consistent with that approved in our 2015–20 transmission determination for Directlink.

Table 4-2 sets out Directlink's proposed depreciation allowance for the 2020–25 regulatory control period.

Table 4-2 Directlink's proposed depreciation allowance for the 2020–25 regulatory control period (\$million, nominal)

	2020–21	2021–22	2022–23	2023–24	2024–25	Total
Straight-line depreciation	7.1	7.9	8.5	9.1	9.7	42.3
Less: inflation indexation on opening RAB	3.6	3.8	3.9	4.0	4.1	19.3
Regulatory depreciation	3.5	4.1	4.6	5.1	5.7	22.9

Source: Directlink, *Revenue proposal 2020-25, Attachment 12-1 - Post Tax Revenue Model*, 31 January 2019.

4.3 Assessment approach

We determine the regulatory depreciation allowance using the PTRM as a part of a transmission network service provider's (TNSP's) annual building block revenue requirement.⁵ The calculation of depreciation in each year is governed by the value of assets included in the RAB at the beginning of the regulatory year, and by the depreciation schedules.⁶

Our standard approach to calculating depreciation is to employ the SL method set out in the PTRM. Regulatory practice has been to assign a standard asset life to each category of assets that represents the economic or technical life of the asset or asset class.⁷ We must consider whether the proposed depreciation schedules conform to the following key requirements:

⁵ NER, cl. 6A.5.4(a)(3) and 6A.5.4(b)(3).

⁶ NER, cl. 6A.6.3(a).

⁷ This is the standard practice for the AER, as well as other jurisdictional regulators. See for example, IPART, *Cost building block model template*, 20 June 2014, Table 1; ERAWA, *Final Decision on Proposed Revisions to the Access Arrangement for the Western Power Network*, September 2012, Appendix 2: Target Revenue Calculation (Revenue Model).

- the schedules depreciate using a profile that reflects the nature of the assets or category of assets over the economic life of that asset or category of assets⁸
- the sum of the real value of the depreciation that is attributable to any asset or category of assets must be equivalent to the value at which that asset or category of assets was first included in the RAB for the relevant transmission system.⁹

To the extent that a TNSP's revenue proposal does not comply with the above requirements, we must determine the depreciation schedules for calculating the depreciation for each regulatory year.¹⁰

The regulatory depreciation allowance is an output of the PTRM. We therefore assess Directlink's proposed regulatory depreciation allowance by analysing the proposed inputs to the PTRM for calculating that allowance. The key inputs include:

- the opening RAB at 1 July 2020
- the forecast net capex in the 2020–25 regulatory control period¹¹
- the expected inflation rate for the above period
- the standard asset life for each asset class—used for calculating the depreciation of new assets associated with forecast net capex in the above period
- the remaining asset life for each asset class—used for calculating the depreciation of existing assets.

Our draft decision on Directlink's regulatory depreciation allowance reflects our determinations on the opening RAB as at 1 July 2020, expected inflation and forecast capex (the first three building block components in the above list).¹² Our determinations on these components of Directlink's proposal are discussed in attachments 2, 3 and 5 respectively.

We usually depreciate a TNSP's existing assets in the PTRM by using the remaining asset lives at the start of a regulatory control period. Our preferred method to establish a remaining asset life for each asset class is the weighted average remaining life (WARL) approach.¹³ The WARL method rolls forward the remaining asset life for an asset class from the beginning of the previous regulatory control period. This method reflects the mix of assets within the asset class. It also reflects when the assets were acquired over that period and the remaining asset lives of existing assets at the end of that period. The

⁸ NER, cl. 6A.6.3(b)(1).

⁹ NER, cl. 6A.6.3(b)(2).

¹⁰ NER, cl. 6A.6.3(a)(2)(ii).

¹¹ Capex enters the RAB net of forecast disposals. It includes equity raising costs (where relevant) and the half-year WACC to account for the timing assumptions in the PTRM. Our draft decision on the RAB (attachment 2) also reflects our updates to the WACC for the 2020–25 regulatory control period.

¹² Our final decision will update the opening RAB as at 1 July 2020 for revised estimates of actual capex and inflation.

¹³ We consider this depreciation method to be a generally superior approach. The reasons are outlined in our decision on the roll forward model for electricity transmission network service providers. See AER, *Explanatory statement, Proposed amendment, Electricity transmission network service providers, Roll forward model*, August 2010, pp. 5–6.

remaining values of all assets are used as weights to calculate the remaining lives at the end of the period.

However, unlike other TNSPs, Directlink has a finite technical life and it will cease to operate by 2041–42.¹⁴ Therefore, consistent with the 2015–20 transmission determination, Directlink's proposed approach is to align its remaining asset life for its existing assets at the start of each regulatory control period with the remaining technical life of Directlink. For the same reason, Directlink has also proposed to align the standard asset lives with the remaining life of its existing assets for the purpose of depreciating new capex for the 2020–25 regulatory control period. Our draft decision on Directlink's remaining and standard asset lives is discussed in section 4.4.2.

4.3.1 Interrelationships

The regulatory depreciation allowance is a building block component of the annual building block revenue requirement.¹⁵ Higher (or quicker) depreciation leads to higher revenues over the regulatory control period. It also causes the RAB to reduce more quickly (excluding the impact of further capex). This reduces the return on capital allowance, although this impact is usually smaller than the increased depreciation allowance in the short to medium term.¹⁶

Ultimately, however, a TNSP can only recover the capex that it incurred on assets once. The depreciation allowance reflects how quickly the RAB is being recovered, and it is based on the remaining and standard asset lives used in the depreciation calculation. It also depends on the level of the opening RAB and the forecast capex. Any increase in these factors also increases the depreciation allowance.

The RAB has to be maintained in real terms, meaning the RAB must be indexed for expected inflation.¹⁷ The return on capital building block has to be calculated using a nominal rate of return (WACC) applied to the opening RAB.¹⁸ As noted in attachment 1, the total annual building block revenue requirement is calculated by adding up the return on capital, depreciation, opex, tax and revenue adjustments building blocks. Because inflation on the RAB is accounted for in both the return on capital—based on a nominal rate—and the depreciation calculations—based on an indexed RAB—an adjustment must be made to the revenue requirement to prevent compensating twice for inflation.

To avoid this double compensation, we make an adjustment by subtracting the annual indexation gain on the RAB from the calculation of total revenue.¹⁹ Our standard approach is to subtract the indexation of the opening RAB—the opening RAB multiplied

¹⁴ Directlink, *Revenue proposal 2020-25*, 31 January 2019, p. 87.

¹⁵ The PTRM distinguishes between straight-line depreciation and regulatory depreciation, the difference being that regulatory depreciation is the straight-line depreciation minus the indexation adjustment.

¹⁶ This is generally the case because the reduction in the RAB amount feeds into the higher depreciation building block, whereas the reduced return on capital building block is proportionate to the lower RAB multiplied by the WACC.

¹⁷ NER, cl. 6A.5.4(b)(1) and 6A.6.1(e)(3).

¹⁸ AER, *Rate of return instrument*, cl. 1, 3(a) and 36(c), December 2018.

¹⁹ NER, cl. 6A.5.4(b)(1)(ii).

by the expected inflation for the year—from the RAB depreciation. The net result of this calculation is referred to as regulatory depreciation.²⁰ Regulatory depreciation is the amount used in the building block calculation of total revenue to ensure that the revenue equation is consistent with the use of a RAB, which is indexed for inflation annually.

This approach produces the same total revenue requirement and RAB as if a real rate of return had been used in combination with an indexed RAB. Under an alternative approach where a nominal rate of return was used in combination with an un-indexed (historical cost) RAB, no adjustment to the depreciation calculation of total revenue would be required. This alternative approach produces a different time path of total revenue compared to our standard approach. In particular, overall revenues would be 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.²¹ Under both approaches, the total revenues being recovered are in present value neutral terms—that is, returning the initial cost of the RAB.

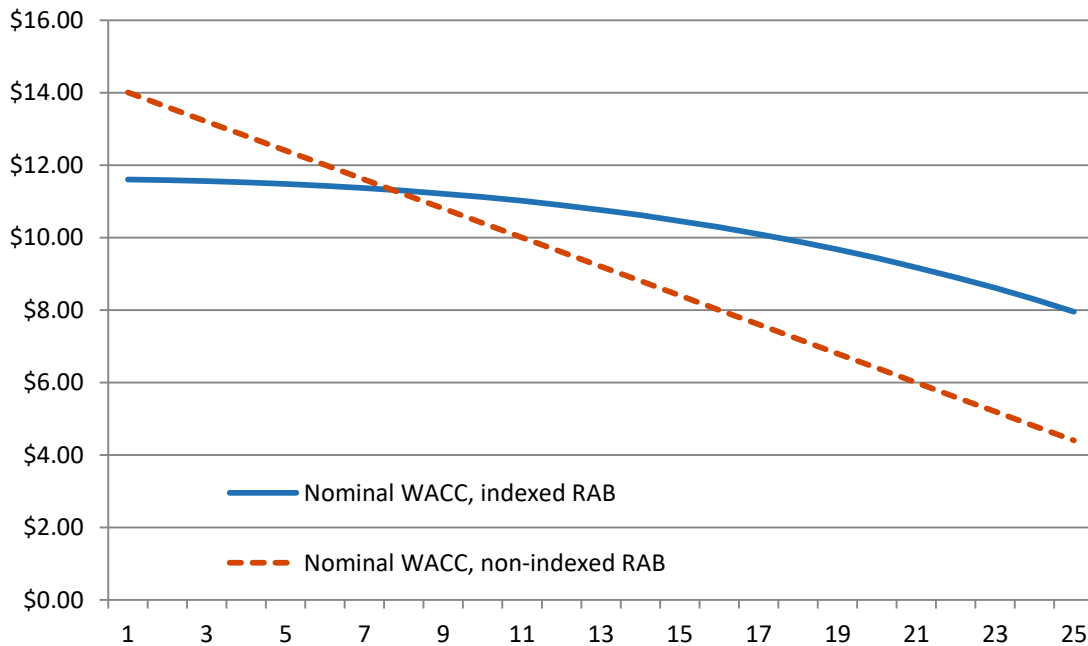
Figure 4-1 shows the recovery of revenue under both approaches using a simplified example.²² Indexation of the RAB and the offsetting adjustment made to depreciation results in smoother revenue recovery profile over the life of an asset than if the RAB was un-indexed.

²⁰ 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.

²¹ 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.

²² The example is based on the initial cost of an asset of \$100, a standard economic life of 25 years, a real WACC of 7.32%, expected inflation of 2.5% and nominal WACC of 10%. Other building block components such as opex, tax and capex are ignored for simplicity as they would affect both approaches equally.

Figure 4-1 Revenue path example – indexed vs un-indexed RAB (\$nominal)



Source: AER analysis.

Figure 2-1 (in attachment 2) shows the relative size of the inflation and straight-line depreciation, and their impact on the RAB based on Directlink's proposal. A 10 per cent increase in the straight-line depreciation causes revenues to increase by about 5.1 per cent.²³

4.4 Reasons for draft decision

We accept Directlink's proposed SL depreciation method for calculating the regulatory depreciation allowance as set out in the PTRM. However, we reduced Directlink's proposed forecast regulatory depreciation allowance for the 2020–25 regulatory control period by \$1.5 million (or 6.5 per cent) to \$21.5 million (\$nominal). This reduction mainly reflects our determinations regarding other components of Directlink's revenue proposal that affect the forecast regulatory depreciation allowance—the opening RAB as at 1 July 2020 (attachment 2), the expected inflation rate (attachment 3), and the forecast capital expenditure (attachment 5) including its effect on the projected RAB over the 2020–25 regulatory control period.²⁴

Our assessment of Directlink's asset classes, and its proposed standard and remaining asset lives, are discussed in the following subsections.

²³ We have analysed the sensitivity of straight-line depreciation relative to total revenue based on input data provided in Directlink's proposal PTRM.

²⁴ Capex enters the RAB net of forecast disposals and capital contributions. It includes equity raising costs (where relevant) and the half-year WACC to account for the timing assumptions in the PTRM. Our draft decision on the RAB (attachment 2) also reflects our updates to the WACC for the 2020–25 regulatory control period.

4.4.1 Asset classes

Directlink proposed a number of changes to its asset classes for the 2020–25 regulatory control period. Our draft decision is to amend Directlink's proposed asset classes in the PTRM by retaining the 'Easements' asset class, and adding two new asset classes labelled 'Land' and 'Buildings.' Further, our draft decision is not to accept Directlink's proposed new 'Restoration and rectification' asset class for allocating certain works in its forecast capex for the 2020–25 regulatory control period.

Transmission assets

Directlink proposed to merge its current asset classes—'Converter stations', 'Transmission lines' and 'Easements'—into a new single asset class labelled 'Transmission assets.' Directlink submitted that a distinction between its asset classes is not required because the finite technical life of Directlink means that all of its assets will need to be fully recovered by 2041–42, and hence the assets all have the same lives.²⁵

We consider that the proposal to combine the existing 'Converter stations' and 'Transmission lines' asset classes into one asset class is reasonable. This asset class change does not affect the regulatory depreciation allowance of the opening RAB values and forecast capex because it does not affect the remaining and standard asset lives.

However, we do not accept Directlink's proposal to merge its existing 'Easements' asset class into the new 'Transmission assets' asset class. This is because the 'Easements' asset class comprises of assets related to both land and easements, which we consider to be non-depreciating assets for calculating the return of capital and corporate income tax building blocks. Therefore, we have created a new asset class labelled 'Land' and retained the 'Easements' asset class to allow for the different depreciation treatment for Directlink's land and easements assets.

Easements

We have separated the value of Directlink's easements assets and allocated to the existing 'Easements' assets class. We generally consider easements to be non-depreciating assets due to their perpetual nature. We raised this issue with Directlink in an information request²⁶ and in response Directlink explained that the treatment for easements should be different for a finite interconnector such as themselves compared to other ongoing networks. This is because easements are a limited bundle of rights that apply to the use of land such as the right to construct an electricity cable across the land.²⁷ As such, these rights would only have value to the landholder or an electricity network. Based on this, Directlink submitted that it is highly probable that its easements will have no value when the interconnector ceases to operate in 2041–42 and therefore the costs of its easements should be recovered over the remaining life of the interconnector.

²⁵ Directlink, *Revenue proposal 2020-25*, 31 January 2019, p. 87.

²⁶ AER, *Request to Directlink Information Request #001 – Initial proposed modelling issues*, 15 February 2019.

²⁷ Including any subsequent access rights for safety and maintenance purposes.

We consider this approach to be reasonable and agree that Directlink's easements are tied to its operations, and would not have any value when Directlink ceases to operate. Therefore, due to Directlink's unique circumstances, we consider it is appropriate to depreciate its easements costs of \$0.2 million in order for Directlink to recover the value of this investment.²⁸ For this draft decision, we have separated Directlink's easements and allocated the value to its existing 'Easements' asset class for RAB depreciation purposes. Directlink has confirmed that it doesn't have any concerns with this approach.²⁹

Land

We have separated the value of Directlink's land assets from its existing 'Easements' asset class and allocated it to a new non-depreciating asset class labelled 'Land'. This is because we consider that land has an infinite useful life and Directlink will be compensated for the sale of land when it ceases to use it in 2041–42. Directlink has confirmed that it does not have any concerns with this approach.³⁰

Buildings

We have reallocated Directlink's forecast capex related to buildings for the 2020–25 regulatory control period into a new asset class labelled 'Buildings' to implement the changes arising from the tax review. Discussed further in attachment 7, the tax review change relates to different methods of calculation of tax depreciation for different asset classes, which resulted in the addition of a new 'Buildings' asset class to the PTRM and a reallocation of forecast capex to this asset class. We have aligned the standard asset life of this asset class with the remaining life of Directlink (section 4.4.2). Directlink has confirmed that it does not have any concerns with this approach.³¹

Restoration and rectification

We did not retain Directlink's proposed new 'Restoration and rectification' asset class in the PTRM. This is because we did not approve the forecast capex associated with this asset class. As a consequence, we are not required to assign a standard asset life for this asset class for depreciation purposes. The reasons for our decision on the forecast capex for restoration and rectification assets are discussed in attachment 5.

²⁸ However, while Directlink's easements should be depreciated for RAB purposes, they should not be depreciated for tax purposes. This is discussed further in attachment 7.

²⁹ Directlink, *Response to AER Information Request #007b – Proposed new merged asset class*, 4 June 2019, p. 2.

³⁰ Directlink, *Response to AER Information Request #001 – Initial proposed modelling issues*, 22 February 2019, pp. 3–4.

³¹ Directlink, *Response to AER Information Request #009 – Modelling questions*, 24 June 2019, p. 1.

4.4.2 Standard and remaining asset lives

We accept Directlink's proposal to assign the remaining asset life of its depreciable asset classes to 21.2 years, which is the remaining technical life of Directlink.³² In general, the remaining asset life of an asset class should reflect the technical life of the assets in that asset class. However, unlike other TNSPs, Directlink is an interconnector with a finite life and its assets will have no useful life when it ceases to operate. Therefore, Directlink's entire asset base should be fully depreciated by 2041–42.

We also accept Directlink's proposal to align the standard asset lives for its asset classes with the remaining technical life of Directlink for the purpose of depreciating new capex over the 2020–25 regulatory control period. This is because we consider Directlink's forecast capex is for 'stay in business' and ancillary equipment purposes, and therefore should have the same asset life as the rest of Directlink's core assets. Therefore, the standard asset life of Directlink's depreciable asset classes is also 21.2 years for the 2020–25 regulatory control period.

We note that Directlink's proposed approach for determining its remaining and standard asset lives is consistent with that approved for its 2015–20 transmission determination.³³ Table 4-3 sets out our draft decision on Directlink's standard asset lives for the 2020–25 regulatory control period and the remaining asset lives as at 1 July 2020. We are satisfied that:³⁴

- the standard and remaining asset lives would lead to a depreciation schedule that reflects the nature of the assets over the economic lives of the asset classes, and
- the sum of the real value of the depreciation attributable to the assets is equivalent to the value at which the assets were first included in the RAB for Directlink.

Table 4-3 AER's draft decision on Directlink's standard and remaining asset lives at 1 July 2020 (years)

Asset class	Remaining asset life as at 1 July 2020	Standard asset life
Transmission assets	21.2	21.2
Easements	21.2	n/a
Land	n/a	n/a
Buildings	n/a	21.2

Source: AER analysis.

n/a: Not applicable. We have not assigned a standard or remaining asset life to the 'Land' asset class because land assets are not subject to depreciation. We have not assigned a standard asset life to the 'Easements' asset class as it does not have any forecast capex allocated to it. We have not assigned a remaining asset life to the 'Buildings' asset class because it does not have an opening RAB value as at 1 July 2020.

³² Directlink, *Revenue proposal 2020-25*, 31 January 2019, p. 88.

³³ AER, *Draft decision Directlink transmission determination 2015-20 - Attachment 5 - Regulatory depreciation*, November 2014, p. 10.

³⁴ NER, cl. 6A.6.3(b)(1)–(2).