DRAFT DECISION
Australian Gas Networks (SA)
Access Arrangement

2021 to 2026

Attachment 4
Regulatory depreciation

November 2020

AUSTRALIAN ENERGY REGULATOR

Inquiries about this publication should be addressed to:

Australian Energy Regulator
GPO Box 520
Melbourne Vic 3001

Tel: 1300 585 165
Email: AERInquiry@aer.gov.au

AER reference: 65192

Note

This attachment forms part of the AER's draft decision on the access arrangement that will apply to Australian Gas Networks (SA) ('AGN') for the 2021–2026 access arrangement period. It should be read with all other parts of the draft decision.

The draft decision includes the following documents:

Overview

Attachment 1 – Services covered by the access arrangement

Attachment 2 – Capital base

Attachment 3 – Rate of return

Attachment 4 – Regulatory depreciation

Attachment 5 – Capital expenditure

Attachment 6 – Operating expenditure

Attachment 7 – Corporate income tax

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4 Regulatory depreciation

Depreciation is the amount provided so capital investors recover their investment over the economic life of the asset (otherwise referred to as 'return of capital'). When determining the total revenue for AGN, we include an amount for the depreciation of the projected capital base.[1] Under the building block framework, regulatory depreciation consists of the net total of the straight-line depreciation less the indexation of the capital base.

This attachment outlines our draft decision on AGN's annual regulatory depreciation amount for the 2021–26 access arrangement period. Our consideration of specific matters that affect the estimate of regulatory depreciation is also discussed in this attachment. These include the:

- standard asset lives for depreciating new assets associated with forecast capital expenditure (capex)[2]
- year-by-year tracking approach to depreciating assets in the capital base
- proposed accelerated depreciation for assets no longer in use as a result of AGN's mains replacement program.

4.1 Draft decision

We determine a regulatory depreciation amount of $261.8 million ($nominal) for AGN for the 2021–26 period. This represents a reduction of $56.5 million (or 17.8 per cent) from AGN's proposed regulatory depreciation amount of $318.3 million ($nominal).[3] In coming to this decision:

- we accept AGN's existing asset classes, its straight-line depreciation method, and the standard asset lives used to calculate the regulatory depreciation amount.
- we accept AGN's proposal to use the year-by-year tracking method to calculate real straight-line depreciation for its existing assets. We have previously considered and approved this method in our decisions for other regulated businesses. However, we have corrected some modelling issues in AGN's application of the year-by-year tracking method in its proposed depreciation model (section 4.4.1).
- we accept, in principle, AGN's proposed accelerated depreciation of the residual value of the mains and inlets assets that have been replaced or are forecast to be replaced by 30 June 2026. However, we do not accept the proposed total amount of $251.5 million at 1 July 2021 for accelerated depreciation purposes. We have reduced this amount by about $49.0 million (or 19.5 per cent) to reflect our

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1 NGR, r. 76(b).

2 The term 'standard asset life' may also be referred to as 'standard economic life', 'asset life', 'economic asset life' or 'economic life'.

3 AGN, *2021–26 Access Arrangement Proposal – Attachment 1.4 – PTRM*, July 2020.

assessment of AGN's mains replacement program. We have also amended the proposed remaining asset lives as at 1 July 2021 for the replaced assets. These amendments have resulted in a reduction to the total regulatory depreciation amount by $56.7 million (or 17.8 per cent) (section 4.4.2).

- we made determinations on other components of AGN's proposal which also affect the forecast regulatory depreciation allowance. Specifically, they relate to:
    - the opening capital base as at 1 July 2021 (attachment 2)
    - expected inflation rate (attachment 3)[4]
    - forecast capex (attachment 5) including its effect on the projected capital base over the 2021–26 period.[5]

Table 4.1 sets out our draft decision on AGN's regulatory depreciation amount over the 2021–26 period.

Table 4.1 AER's draft decision on AGN's forecast depreciation for the 2021–26 access arrangement period ($million, nominal)

	2021–22	2022–23	2023–24	2024–25	2025–26	Total
Straight-line depreciation	88.6	94.1	99.6	98.2	104.1	484.7
Less: indexation on opening capital base	42.0	43.2	44.6	45.9	47.2	222.9
Regulatory depreciation	**46.6**	**50.9**	**55.0**	**52.3**	**57.0**	**261.8**

Source: AER analysis.

4.2 AGN's proposal

AGN proposed a total forecast regulatory depreciation amount of $318.3 million ($nominal) for the 2021–26 period, as set out in Table 4.2.

[4] As discussed in attachment 3, our draft decision estimate of expected inflation is 2.37 per cent per annum for the access arrangement period. We are currently undertaking a review into the treatment of inflation in our regulatory framework, including the method likely to result in the best estimate of expected inflation. The final outcomes of this review are expected in December 2020. If we consider a different method for estimating expected inflation should be adopted, we intend to commence the consultation process under the NGR for amending the PTRM. We expect to apply amendments to the PTRM (if any) in our final decision in April 2021, unless a rule change proposal is required.

[5] Capex enters the capital base 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 our PTRM. Our draft decision on the capital base (attachment 2) also reflects our updates to the WACC for the 2021–26 period.

Table 4.2 AGN's proposed forecast depreciation for the 2021–26 access arrangement period ($million, nominal)

	2021–22	2022–23	2023–24	2024–25	2025–26	Total
Straight-line depreciation	99.1	105.1	111.2	110.5	117.2	543.0
Less: indexation on opening capital base	42.0	43.4	44.9	46.4	48.1	224.7
Regulatory depreciation	**57.1**	**61.7**	**66.3**	**64.0**	**69.1**	**318.3**

Source: AGN, *2021–26 Access Arrangement Proposal – Attachment 1.4 – PTRM*, July 2020.

To calculate the depreciation amount, AGN proposed to use:[6]

- the straight-line depreciation method employed in the AER's post-tax revenue model (PTRM)
- the closing capital base value as at 30 June 2021 derived from the AER's roll forward model (RFM)
- proposed forecast capex for the 2021–26 period
- an expected inflation rate of 2.37 per cent per annum for the 2021–26 period
- the year-by-year tracking depreciation model, which implements the straight-line method to calculate the forecast depreciation (over the 2021–26 period) of the opening capital base at 1 July 2021
- the asset classes and standard asset lives for depreciating new assets associated with forecast capex for the 2021–26 period, which are consistent with those approved in the 2016–21 access arrangement.

In addition, AGN proposed two new asset classes to implement its proposal to accelerate the depreciation of replaced mains and inlets. AGN has proposed a remaining asset life of 5 years for the new asset classes of 'Low pressure mains depreciation' and 'Low pressure inlets depreciation' to fully depreciate the residual values of these assets within the 2021–26 period.

[6] AGN, *2021–26 Access Arrangement Proposal – Attachment 1.4 – PTRM*, July 2020.

4.3 Assessment approach

In its 2021–26 access arrangement proposal, AGN must provide a forecast depreciation schedule for the 2021–26 period. The depreciation schedule sets out the basis on which the pipeline assets constituting the capital base are to be depreciated for the purpose of determining a reference tariff.[7] It may consist of a number of separate schedules, each relating to a particular asset or class of asset.[8]

In making a decision on the proposed depreciation schedule, we assess the compliance of the proposed depreciation schedule with the depreciation criteria set out in the NGR. The depreciation criteria[9] state that the depreciation schedule should be designed:

- so that reference tariffs will vary, over time, in a way that promotes efficient growth in the market for reference services[10]
- so that each asset or group of assets is depreciated over the economic life of that asset or group of assets[11]
- so as to allow, as far as reasonably practicable, for adjustment reflecting changes in the expected economic life of a particular asset, or a particular group of assets[12]
- so that (subject to the rules about capital redundancy), an asset is depreciated only once[13]
- so as to allow for the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs.[14]

The depreciation criteria also provide that a substantial amount of depreciation may be deferred in circumstances where investment is made on the expectation of future demand growth.[15]

The NGR require that any forecast must be arrived at on a reasonable basis and must represent the best forecast or estimate possible in the circumstances.[16]

Our assessment takes into account the revenue and pricing principles (RPP) and seeks to promote the National Gas Objective (NGO).[17] The NGO is to promote efficient investment in, provision of and use of, natural gas services for the long term interests of consumers with respect to price, quality, safety, reliability and security of supply of

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7 NGR, r. 88(1).
8 NGR, r. 88(2).
9 NGR, r. 89.
10 NGR, r. 89(1)(a).
11 NGR, r. 89(1)(b).
12 NGR, r. 89(1)(c).
13 NGR, r. 89(1)(d).
14 NGR, r. 89(1)(e).
15 NGR, r. 89(2).
16 NGR, r. 74(2).
17 NGL, s 28; NGR r. 100(1).

natural gas.[18] We are required, when carrying out our functions, to make a decision that will contribute, or will be likely to contribute, to the achievement of the NGO.[19] In addition, when exercising our decision-making powers, we are required to take into account the RPP.[20] These include the principle that a service provider should be provided with effective incentives in order to promote efficient investment in, provision of and use of pipeline services, and the principle that we should have regard to the economic costs and risks of the potential for under- and over-investment in a pipeline, and utilisation of a pipeline when making our decisions.[21]

In April 2020, we published our first version of the RFMs and PTRMs for gas network service providers under new provisions in the NGR.[22] Gas distribution businesses are required to use these models for the purposes of their access arrangement proposals. The PTRM sets out the method for calculating the forecast deprecation schedule. We have also published a separate depreciation module to the RFM that applies the year-by-year tracking depreciation approach. This module is used for calculating the depreciation of existing assets, and the output from this module will feed into the PTRM.

The regulatory depreciation approach in the PTRM involves two components:

1. A straight-line depreciation component calculated by dividing the asset value by its standard asset life (for new assets) or remaining asset life (for existing assets). We consider that the straight-line method satisfies the NGR's depreciation criteria. This is because the straight-line method smooths changes in the reference tariffs, promotes efficient growth of the market, allows assets to be depreciated only once and over its economic life, and allows for a service provider's reasonable needs for cash flow.
2. An offsetting adjustment for indexation of the value of assets in the capital base. This component is necessary to prevent double counting of inflation when a nominal rate of return is applied to the inflation indexed capital base. Therefore, we remove the revaluation (indexation) gain on the capital base from the depreciation building block when setting total revenue.

The regulatory depreciation amount is an output of our PTRM. We therefore assessed AGN's proposed regulatory depreciation amount by analysing the proposed inputs to the PTRM for calculating that amount. Key inputs include the:

- opening capital base at 1 July 2021

18 NGL, s. 23.
19 NGL, s. 28(1).
20 NGL, s. 28(2).
21 NGL, s. 24.
22 NGR, rr. 75A–75B.

- forecast net capex in the 2021–26 period[23]
- indexation adjustment—based on the forecast capital base and expected inflation rate for the 2021–26 period
- standard asset life for each asset class—used for calculating the depreciation of new assets associated with forecast net capex in the 2021–26 period
- straight-line depreciation amount associated with the opening capital base as at 1 July 2021—calculated in a separate year-by-year tracking depreciation module.

Our draft decision on AGN's regulatory depreciation amount reflects our determinations on the opening capital base, expected inflation and forecast net capex (the first three inputs in the above list).[24] Our determinations on these components of AGN's proposal are discussed in attachments 2, 3 and 5, respectively. In this attachment 4, we discuss our assessment on the proposed standard asset life for each asset class and the year-by-year tracking depreciation approach to calculate depreciation of the opening capital base at 1 July 2021 (the last two inputs in the above list).

In general, we consider that consistency in the standard asset life for each asset class across access arrangement periods will allow reference tariffs to vary over time in a manner which would promote efficient growth in the market for reference services. Our assessment on standard asset life of an asset class also takes into account the technical life (or the engineering designed life) of the assets associated with the asset class. We also benchmark AGN's standard asset lives with those used by other gas service providers for similar asset classes. Section 4.4.3 discusses our assessment on the proposed standard asset lives.

Our PTRM provides for two approaches for calculating the straight-line depreciation for the existing assets:

- the 'weighted average remaining lives' (WARL) approach: This approach calculates the remaining asset life for an asset class by weighting together its remaining asset life at the beginning of the access arrangement period with the new capex added to the asset class during that period. The residual asset values are used as weights to calculate the remaining asset life at the end of that period. The WARL for the asset classes are calculated in our RFM and are inputs to the PTRM. We consider this approach meets the depreciation criteria of the NGR
- the 'year-by-year tracking' approach: Under this approach, the capex (in addition to grouping assets by type via asset classes) for each year of an access arrangement period is depreciated separately and tracked on a year-by-year basis over the

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[23] Capex enters the capital base, 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 capital base (attachment 2) also reflects our updates to the WACC for the 2021–26 period.

[24] Our final decision will update the opening capital base as at 1 July 2021 for revised estimates of actual capex and inflation.

assigned standard life for the asset class. We consider that this approach would also meet the depreciation criteria of the NGR. Our depreciation tracking module conducts the detailed calculations required under this approach. The output of this module is then recorded in the PTRM.

AGN has proposed to apply the year-by-year tracking depreciation approach and its proposal includes the depreciation tracking module. Therefore, we must assess whether AGN has appropriately implemented the year-by-year tracking depreciation approach, including checking the proposed inputs to this module. Our assessment on this aspect of AGN's proposal is discussed in section 4.4.1.

AGN's proposal also included accelerated depreciation of assets which have a residual value and are being replaced. Our assessment approach for accelerated depreciation aligns with our general approach. One key consideration is whether the accelerated depreciation produces depreciation schedules that reflect the remaining economic life of the affected assets, as set out in rules 89(1)(b)–(c) of the NGR. Our assessment on the proposed accelerated depreciation is also directly related to the assessment of the proposed mains replacement capex (attachment 5). Where it is efficient and prudent to undertake the capex to replace the assets, this suggests that it might no longer be economically efficient to use the replaced assets to provide reference services. Therefore, the depreciation schedules associated with the residual value of the replaced assets could possibly be accelerated to reflect their reduced remaining economic life. Section 4.4.2 discusses our assessment on the proposed accelerated depreciation of the replaced assets.

4.3.1 Interrelationships

The regulatory depreciation amount is a building block component of the total revenue requirement.[25] Higher (or quicker) depreciation leads to higher revenues over the access arrangement period. It also causes the capital base to reduce more quickly (excluding the impact of new capex being added to the capital base). This reduces the return on capital amount, although this impact is usually smaller than the increased depreciation amount in the short to medium term.[26]

Ultimately, however, a service provider can only recover the capex that it incurred on assets once.[27] The depreciation amount reflects how quickly the capital base is being recovered and is based on the remaining and/or standard asset lives used in the depreciation calculation. It also depends on the level of the opening capital base and the forecast capex. Any increase in these factors also increases the depreciation allowance.

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[25] The PTRM distinguishes between straight-line depreciation and regulatory depreciation, the difference being that regulatory depreciation is the straight-line depreciation minus the indexation amount on the projected capital base.

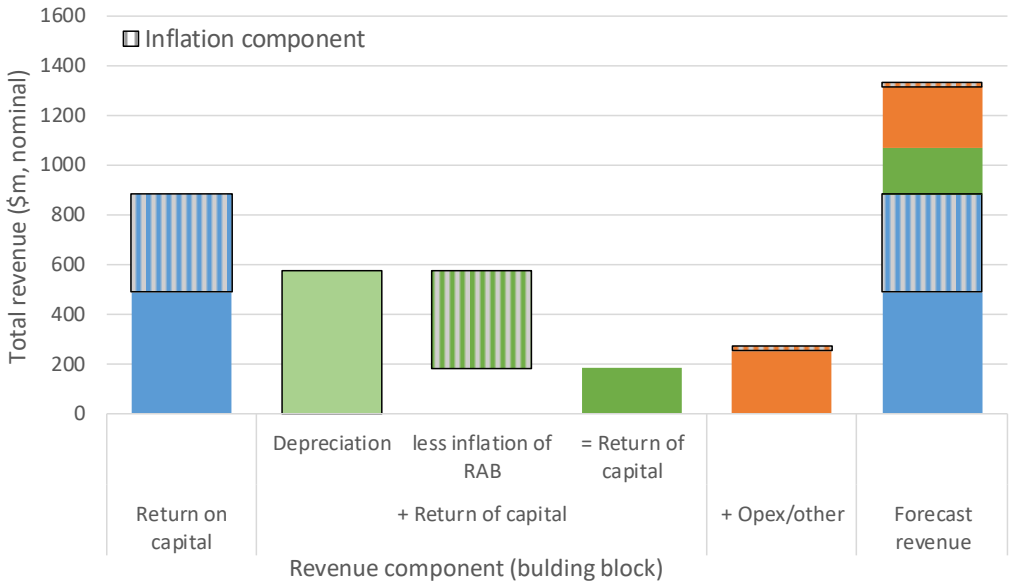
[26] This is generally the case because the reduction in the capital base amount feeds into the higher depreciation building block, whereas the reduced return on capital building block is proportionate to the lower capital base multiplied by the WACC.

[27] NGR, r. 89(1)(d).

Our standard approach is to maintain the capital base in real terms, meaning the capital base is indexed for expected inflation. The return on capital building block has to be calculated using a nominal rate of return (WACC) applied to the opening capital base.[28] The total revenue requirement is calculated by adding the return on capital, depreciation, operating expenditure (opex), tax and revenue adjustments building blocks.[29] Because inflation on the capital base is accounted for in both the return on capital (based on a nominal rate of return) and the depreciation calculations (based on an indexed capital base), 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 capital base from the calculation of total revenue. Our standard approach is to subtract the indexation of the opening capital base—the opening capital base multiplied by the expected inflation for the year—from the capital base depreciation. The net result of this calculation is referred to as regulatory depreciation (or return of capital).[30] 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 capital base, which is indexed for inflation annually. Figure 4.1 shows where the inflation components are included in the building block costs.

Figure 4.1 Inflation components in revenue building blocks – example



Source: AER analysis.

[28] NGR, r. 87.

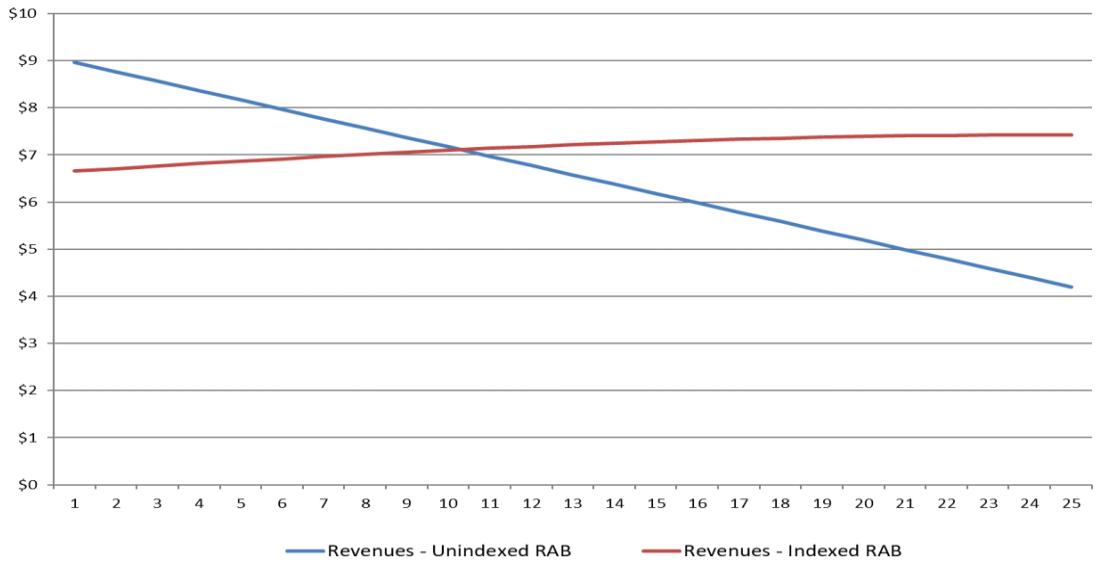
[29] NGR, r. 76.

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

This approach produces the same total revenue requirement and capital base as if a real rate of return had been used in combination with an indexed capital base. Under an alternative approach where a nominal rate of return was used in combination with an un-indexed (historical cost) capital base, 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 (and therefore prices) would be higher early in the asset's life (as a result of more depreciation being returned to the service provider) and lower in the future—producing a steeper downward sloping profile of total revenue.[31] Under both approaches, the total revenues being recovered are in net present value (NPV) neutral terms—that is, returning the initial cost of the capital base.

Figure 4.2 shows the recovery of revenue under both approaches using a simplified example.[32] Indexation of the capital base and the offsetting adjustment made to depreciation results in smoother revenue recovery profile over the life of an asset than if the capital base was un-indexed. The indexation of the capital base also reduces price shocks when the asset is replaced at the end of its life.[33]

Figure 4.2 Revenue path example – indexed vs un-indexed capital base ($nominal)



Source: AER analysis.

31 A change of approach from an indexed capital base to an un-indexed capital base would result in an initial step change increase in revenues to preserve NPV neutrality.

32 The example is based on the initial cost of an asset of $100, a standard economic life of 25 years, a real WACC of 2.5 per cent, expected inflation of 2.4 per cent and nominal WACC of 4.96 per cent. Other building block components such as opex, tax and capex are ignored for simplicity as they would affect both approaches equally.

33 In year 26 the revenues in the example for the un-indexed approach would jump from about $4 to $9, assuming the asset is replaced by an asset of roughly similar replacement cost as the initial asset. In contrast, in the same circumstances, the indexed approach would see revenues stay at roughly $7.

Figure 2.1 (in attachment 2) shows the relative size of the inflation and straight-line depreciation, and their impact on the capital base using AGN's proposal. A 10 per cent increase in the straight-line depreciation causes revenues to increase by about 4.6 per cent.[34]

4.4 Reasons for draft decision

We accept AGN's proposed straight-line depreciation method for calculating the regulatory depreciation amount as set out in the PTRM and the year-by-year tracking approach to implement this method, subject to correcting some minor input errors in the depreciation module. We also accept the proposed asset classes and standard asset lives as they are consistent with those approved for the 2016–21 period.

However, we have reduced AGN's proposed forecast regulatory depreciation by $56.5 million (or 17.8 per cent) to $261.8 million ($nominal) for the 2021–26 period. This reduction is due to our amendments to AGN's proposed accelerated depreciation of mains and inlets assets that have been replaced or are forecast to be replaced by 30 June 2026 (section 4.4.2). It also reflects our draft decision regarding other components of AGN's proposal that affect the forecast regulatory depreciation—the opening capital base as at 1 July 2021 (attachment 2), expected inflation over the 2021–26 period (attachment 3) and forecast capital expenditure (attachment 5)[35] including its effect on the projected capital base over the 2021–26 period.[36]

Our assessment of AGN's implementation of the year-by-year tracking depreciation approach, accelerated depreciation of replaced assets, and its proposed standard asset lives are discussed in turn in the following subsections.

4.4.1 Implementation of the year-by-year tracking depreciation approach

AGN proposed the year-by-year tracking approach to implement the straight-line method for calculating the depreciation schedule for its existing assets as at 1 July 2021. This represents a change from the current approach to determining remaining asset lives at the end of each access arrangement period, as employed for the 2016–21 period. AGN has used our template depreciation tracking module to implement the year-by-year tracking approach.

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

[35] The reduction we made to the proposed forecast mains replacement capex did not result in a material impact on the total regulatory depreciation amount. This is because the regulatory depreciation allowance is the net total of the straight-line depreciation less the inflation indexation of the capital base. While the reduction to the forecast mains replacement capex has reduced the forecast straight-line depreciation amount, it also reduced the indexation amount on the capital base. The decrease in indexation has more than offset the decrease in straight-line depreciation (since indexation is deducted from the straight-line depreciation).

[36] Capex enters the capital base 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 capital base (attachment 2) also reflects our updates to the WACC for the 2021–26 period.

Our depreciation tracking module applies the straight-line depreciation method. We have reviewed the inputs to AGN's proposed depreciation module. We note that AGN's proposal has adopted the same depreciation rates as approved in the 2016–21 access arrangement. Therefore, we are satisfied that AGN's proposed depreciation module:

- will result in a depreciation schedule that allows the reference tariffs to vary over time in a manner that would promote efficient growth in the market for reference services[37]
- allows assets to be depreciated only once and over its economic lives[38]
- allows for a service provider's reasonable needs for cash flow.[39]

We have previously accepted the year-by-year depreciation tracking approach in the 2018–22 access arrangements for Australian Gas Networks (Victoria and Albury), AusNet Services and Multinet, and the 2020–25 access arrangement for JGN.

While we accept AGN's proposal for a year-by-year depreciation tracking approach, we have corrected some errors in its depreciation module to be consistent with the RFM inputs. In its response to our information request, AGN stated that it has no concerns with our amendments.[40] We have also made an adjustment to the remaining lives of the replaced assets undergoing accelerated depreciation in the depreciation module, which is discussed in section 4.4.2.

4.4.2 Accelerated depreciation of replaced assets

AGN proposed to accelerate the depreciation of the residual value of mains and inlets assets that have been replaced or are forecast to be replaced ('replaced assets') by 30 June 2026. The proposed residual amount for accelerated depreciation is $251.5 million at 1 July 2021, which accounts for about 75.0 per cent of its total proposed regulatory depreciation amount for the 2021–26 period.

We consider that AGN's proposal to accelerate the depreciation of the replaced assets is consistent with the NGR and our previous decisions on similar issues. The assets in question have historically been included in AGN's capital base in the broad asset classes of 'Mains' and 'Other distribution system equipment' with much longer remaining asset lives as at 1 July 2021.[41] Once these assets are replaced and forecast to be removed from service, they will have no further economic use. Therefore, the residual value of these assets should be fully depreciated by the end of the 2021–26 period to reflect their reduced economic life.[42] Therefore, we accept that the proposed remaining asset life as at 1 July 2021 of the approved replaced assets will be reduced

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37 NGR, r. 89(a).

38 NGR, r. 89(b).

39 NGR, r. 89(e).

40 AGN, *Response to AER information request #001*, 5 August 2020.

41 The remaining life for the 'Mains' and 'Other distribution system equipment' asset classes in 2016 before depreciation began tracking for the 2021–26 period were 49.1 years and 23.4 years respectively.

42 NGR, r. 89(1)(c).

to 5 years to reflect their reduced economic lives and for accelerated depreciation purposes.

While we agree with the proposed accelerated depreciation of the replaced assets in principle, we have concerns with the proposed amount of $251.5 million to be fully depreciated by the end of the 2021–26 period. We have reduced this amount by about $49.0 million (or 19.5 per cent) to reflect our assessment of AGN's mains replacement program. We have also amended the proposed remaining asset lives of the replaced assets as at 1 July 2021 for accelerated depreciation purposes. These amendments have resulted in a reduction to the proposed total regulatory depreciation amount by $56.7 million (or 17.8 per cent). We discuss our reasons for these amendments in turn below.

Residual value of the replaced assets as at 1 July 2021

AGN proposed that the residual value of $251.5 million for the replaced assets as at 1 July 2021 will need to be fully depreciated within the 2021–26 period. This consists of:

- $198.1 million for assets that will have been replaced by 30 June 2021 as a result of the mains replacement program undertaken up to the end of the 2016–21 period
- $53.4 million for assets that are forecast to be replaced over the 2021–26 period.

Under our weighted average remaining lives approach for depreciation, AGN's capital base was categorised into several broad asset classes. The replaced mains and inlets assets have historically been included in the 'Mains' and 'Other distribution system equipment' asset classes, along with other assets. To determine the appropriate amount for accelerated depreciation, the value attributable to the replaced assets will first need to be extracted from these asset classes. An estimation method is required to achieve this.

AGN engaged Incenta to provide an estimated residual value of the replaced assets as at 1 July 2021. Incenta has estimated the written down value of these assets by first aligning the capital base value as at 30 June 2011 with the depreciated optimised replacement cost (DORC). This DORC amount contains a detailed breakdown of the individual asset sub-categories of the asset class, and provides for identifying the relevant assets that have been or will be replaced. It then rolled forward the sub-categorised amounts to 30 June 2021 to determine the remaining value for accelerated depreciation.[43] Where actual asset written down values are not available, we consider using DORC as an estimate is appropriate. This approach is also largely consistent with that adopted by AGN for its gas network in Victoria in a similar proposal.[44] Therefore, we consider that the approach used by Incenta to calculate the residual value of the replaced assets for AGN is reasonable.

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[43] AGN, *Attachment 9.1: Incenta - Replacement of Low Pressure Mains, 1 July 2020*, pp. 4 and 5.

[44] AGN, *Attachment 9.1: Incenta - Replacement of Low Pressure Mains, 1 July 2020*, p. 4.

However, we found that a number of assets which AGN has classified as replaced and forecast to be redundant may continue to be in service beyond the 2021–26 period. We note that some of the methods used by AGN to address poor asset performance are more akin to asset modifications. As such, these assets were not, and will not, be removed from the network, nor will they cease providing services to consumers for the purpose of ongoing gas transportation. We consider that these assets should not be subject to accelerated depreciation. Therefore, for the purposes of this draft decision, we have excluded these assets from accelerated depreciation, which has the effect of reducing:

- the amount to be replaced by 30 June 2021 by $11.5 million, to $186.5 million
- the amount forecast to be replaced over the 2021–26 period by $21.0 million, to $32.4 million.

Further, we have not approved AGN's proposed forecast mains replacement capex in full for the 2021–26 period. As discussed in attachment 5, we have reduced the proposed forecast mains replacement capex by 29 per cent. We have therefore made a corresponding adjustment to the residual value of assets forecast to be replaced over the 2021–26 period, which has resulted in a further reduction of $16.4 million to arrive at $16.0 million of assets forecast to be replaced over the 2021–26 period. Attachment 5 discusses our assessment of the forecast mains replacement capex for the 2021–26 period, and the classification of mains replacement capex, in detail.

In summary, our amended residual value of the replaced assets as at 1 July 2021 is $202.5 million, which will be fully depreciated over the 2021–26 period. This amount consists of:

- $186.5 million for assets that will have been replaced by 30 June 2021
- $16.0 million for assets that are forecast to be replaced over the 2021–26 period.

Remaining asset lives of the replaced assets as at 1 July 2021

We do not accept AGN's proposed remaining asset lives inputs in the RFM and the depreciation module for the purposes of removing these assets from the existing asset classes. AGN had assigned remaining asset lives of 48.1 years and 20.8 years to the existing 'Mains' and 'Other distribution system equipment' asset classes respectively for accelerated depreciation purposes. We consider that these lives do not accurately reflect the remaining asset lives of the replaced assets as at 1 July 2021. Following further engagement with AGN, we have determined the appropriate remaining asset lives are 37 years and 17 years for these asset classes respectively for accelerated depreciation purposes. AGN has indicated that it has no issues with the amended remaining asset lives.[45] The amended remaining asset lives inputs decrease the

[45] AER meeting with AGN: *AER discussion with AGN remaining asset lives for accelerated depreciation*, dated 27 August 2020.

regulatory depreciation amount for the 2021–26 period by a further $9.3 million (or 2.9 per cent).

For the purposes of this draft decision, we have not updated the remaining asset lives as at 1 July 2021 to reflect the reduced mains replacement program for the 2021–26 period. This is not expected to have a material impact. However, we note that AGN may update the remaining asset lives for its revised proposal, and that we will update them to reflect the final decision on the mains replacement capex.

4.4.3 Standard asset lives

We accept the standard asset lives proposed by AGN. It proposed the same standard asset lives for the 2021–26 period as those approved for the 2016–21 period.

AGN has not proposed to reduce the standard asset lives of its existing asset classes for the 2021–26 period in response to the uncertainty of the future of gas. It has submitted that this issue is better addressed in subsequent access arrangement periods. Stakeholder submissions from Consumer Challenge Panel 24, SA Minister Energy & Mining, Business SA, Origin Energy, Energy Consumers Australia and South Australian Federation of Residents and Ratepayers Association all supported AGN's proposal to not change its asset lives for the 2021–26 period.

The future of natural gas is a live issue, particularly as renewable energy becomes cheaper and is increasingly becoming the choice of consumers. Whilst South Australian customers are still demanding gas and AGN continues to connect customers[46] and support its network operations, gas networks across Australia are facing an evolving landscape with the growing support for reducing carbon emissions by moving away from natural gas use for homes and businesses. This is occurring at varying speeds in different regions driven primarily by state government policy. This issue of uncertainty was considered by the CCP24,[47] acknowledging:

> AGN, along with other gas distribution network businesses, faces fundamental questions about the future of the gas network, driven by jurisdictional governments moving towards net zero emissions policies in a timeframe considerably less than the asset lives of a significant part of the businesses' asset base.[48]

AGN's proposal recognises the need to innovate and consider alternatives to natural gas to sustain investments over time. However, given the uncertainty surrounding natural gas and the future viability of alternative fuels, AGN's proposal is not to make fundamental changes, such as a move to accelerated depreciation by reducing its

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[46] Despite the increase in customer numbers, the average total consumption over the 2021−26 period is forecast to continue the declining trend of the current period.

[47] CCP24, *Advice to Australian Energy Regulator on Australian Gas Networks Final Plan for AGN Gas Networks (South Australia) Access Arrangement July 2021-June 2026,* 10 August 2020.

[48] CCP24, *Advice to Australian Energy Regulator on Australian Gas Networks Final Plan for AGN Gas Networks (South Australia) Access Arrangement July 2021-June 2026*, 10 August 2020, p. 3.

standard asset lives of its pipeline asset classes for the 2021–26 period.[49] AGN's customers are interested in the future of gas, future energy mixes and the potential for renewable gas and have shown support for AGN's approach.[50] This is in contrast to other gas networks, for example the ACT's Evoenergy gas network, where there is a stronger mandate to reduce reliance on natural gas and hence a more pressing need to consider changes for that access arrangement.[51]

We consider AGN has taken a sound approach to the uncertainties on its network. This is consistent with what we have heard from stakeholders, including the CCP24, who supported AGN's decision not to seek reductions to the standard asset lives for the 2021–26 period and would like to see further stakeholder engagement on the future of gas.[52]

To this end, and in recognition of the importance of the gas market and our role in determining network access arrangements, we have elevated consideration of future gas market issues in our strategic priorities list. We are currently considering how the AER could advance this discussion with consumers, industry, market bodies and government stakeholders.

Table 4.3 sets out our draft decision on the standard asset lives for AGN over the 2021–26 access arrangement period. We are satisfied the standard asset lives approved in this draft decision will result in a depreciation schedule that reflects the depreciation criteria of the NGR.[53]

Table 4.3 AER's draft decision on AGN's standard asset lives (years)

Asset class	Standard asset life
Mains	60
Inlets	60
Meters	15
Telemetry	20
IT system	5
Other distribution system equipment	40
Other	10

[49] Accelerated depreciation is one response to the challenge of gas supply in an emissions constrained environment. This approach seeks to recoup the cost of future investments from its customers over a shorter period of time. Accelerated depreciation is usually adopted when assets are not being utilised.

[50] AGN, Attachment 5.1, *Stage 1 Engagement Report*, 1 July 2020, p. 5.

[51] AER, *Draft decision, Evoenergy 2016–21 access arrangement*, Overview, November 2020, pp. 9–11.

[52] CCP24, *Advice to Australian Energy Regulator on Australian Gas Networks Final Plan for AGN Gas Networks (South Australia) Access Arrangement July 2021-June 2026*, 10 August 2020, p. 11; Also see CCP24, *Advice to the Australian Energy Regulator on Australian Gas Networks South Australia Draft Plan for Access Arrangement July 2021-June 2026*, 5 June 2020, pp. 31–50.

[53] NGR, r. 89(1).

Asset class	Standard asset life
Low pressure mains depreciation	n/a
Low pressure inlets depreciation	n/a

Source: AER analysis.

n/a not applicable. We have not assigned a standard asset life to the 'Low pressure mains depreciation' and 'Low pressure inlets depreciation' asset classes because they were specifically created to accelerate the depreciation of existing assets being replaced, and there is no forecast capex allocated to these asset classes.

4.5 Revisions

We require the following revisions to make the access arrangement proposal acceptable as set out in Table 4.1.

Table 4.4 AGN's regulatory depreciation revisions

Revision 4.1:	Make all necessary amendments to reflect this draft decision on the regulatory depreciation amounts for the 2021–26 access arrangement period, as set out in Table 4.1.
Revision 4.2:	Make all necessary amendments to reflect this draft decision on the accelerated depreciation amount and remaining asset lives as at 1 July 2021 for replaced mains and inlets assets, as set out in section 4.4.2

Shortened forms

Shortened form	Extended form
AER	Australian Energy Regulator
AGN	Australian Gas Networks (SA)
capex	Capital expenditure
DORC	Depreciated optimised replacement cost
NGL	National Gas Law
NGO	National Gas Objective
NGR	National Gas Rules
opex	Operating expenditure
PTRM	Post-tax revenue model
RFM	Roll forward model
RPP	Revenue and pricing principles
WACC	Weighted average cost of capital
WARL	Weighted average remaining lives