DRAFT DECISION
Jemena Gas Networks (NSW) Ltd
Access Arrangement

2020 to 2025

Attachment 2
Capital base

November 2019

AUSTRALIAN ENERGY REGULATOR

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Note

This attachment forms part of the AER's draft decision on the access arrangement that will apply to Jemena Gas Networks (NSW) Ltd ('JGN') for the 2020–2025 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

Attachment 8 – Efficiency carryover mechanism

Attachment 9 – Reference tariff setting

Attachment 10 – Reference tariff variation mechanism

Attachment 11 – Non-tariff components

Attachment 12 – Demand

Attachment 13 – Capital expenditure sharing scheme

Contents

Shortened forms

Shortened form	Extended form
AER	Australian Energy Regulator
Capex	Capital expenditure
CPI	Consumer price index
JGN	Jemena Gas Networks (NSW) Ltd
NGR	National Gas Rules
PTRM	Post-tax revenue model
RFM	Roll forward model
RIN	Regulatory Information Notice
WACC	Weighted average cost of capital

2 Capital base

The capital base roll forward accounts for the value of JGN's regulated assets over the access arrangement period. The opening capital base value for a regulatory year within the access arrangement period is rolled forward by indexing it for inflation, adding any conforming capital expenditure (capex), and subtracting depreciation and other possible factors (for example, disposals or customer contributions).[1] Following this process, we arrive at a closing value of the capital base at the end of the relevant year. The opening value of the capital base is used to determine the return of capital (regulatory depreciation) and return on capital building block allowances.

This attachment sets out our draft decision on JGN's opening capital base as at 1 July 2020 for the 2020–25 access arrangement period. It also sets out our draft decision on JGN's projected capital base for the 2020–25 period.

2.1 Draft decision

We accept JGN's proposed opening capital base of $3352.7 million ($ nominal) as at 1 July 2020.[2]

In accepting JGN's proposed methodology for calculating the capital base, we have updated the weighted average cost of capital (WACC) input for 2019–20 in its roll forward model (RFM) to be consistent with the value in our 2015–20 remade final decision (the 'remittal') post-tax revenue model (PTRM). This update did not have a material impact on JGN's proposed opening capital base as at 1 July 2020.[3]

To determine the opening capital base as at 1 July 2020, we have rolled forward the capital base over the 2015–20 period to determine a closing capital base value at 30 June 2020, in accordance with the proposed RFM. This roll forward includes an adjustment at the end of the 2015–20 period to account for the difference between actual 2014–15 capex and the estimate approved in our 2015–20 decision.[4]

Table 2.1 summarises our draft decision on the roll forward of JGN's capital base during the 2015–20 period.

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1 The term 'rolled forward' means the process of carrying over the value of the capital base from one regulatory year to the next.

2 JGN, *2020–25 Access Arrangement Proposal – Attachment 7.3 – RFM*, June 2019.

3 Compared to the proposal, our draft decision increases the opening capital base as at 1 July 2020 by $6440.

4 The end of period adjustment will be positive (negative) if actual capex is higher (lower) than the estimate approved at the 2015–20 decision.

Table 2.1 AER's draft decision on JGN's capital base roll forward for the 2015–20 access arrangement period ($million, nominal)

	2015–16	2016–17	2017–18	2018–19[a]	2019–20[b]
Opening capital base	2980.2	3091.7	3162.0	3240.0	3294.6
Net capex[c]	203.7	181.9	189.9	181.2	201.1
Indexation of capital base[d]	52.0	47.0	62.2	59.4	76.4
Less: straight-line depreciation[e]	144.2	158.6	174.0	186.1	173.3
Closing capital base	3091.7	3162.0	3240.0	3294.6	3398.7
Adjustment for 2014–15 capex[f]					–46.0
Opening capital base as at 1 July 2020					**3352.7**

Source: AER analysis.

(a) Based on estimated capex provided by JGN. We will update the capital base roll forward for actual capex in the final decision.

(b) Based on estimated capex provided by JGN. We expect to update the capital base roll forward with a revised capex estimate in the final decision, and true-up the capital base for actual capex at the next review.

(c) Net of disposals and capital contributions, and adjusted for actual consumer price index (CPI).

(d) We will update the capital base roll forward for actual CPI for 2019–20 in the final decision.

(e) Adjusted for actual CPI. Based on forecast capex.

(f) This adjustment accounts for the difference between actual 2014–15 capex and the estimate approved in the 2015–20 decision.

We determine a projected closing capital base as at 30 June 2025 of $3793.9 million ($ nominal). This is $88.8 million ($ nominal) lower than JGN's proposed closing capital base at 30 June 2025 of $3882.7 million ($ nominal).[5] Our draft decision on the forecast closing capital base value reflects the updated opening capital base as at 1 July 2020, and our draft decision on the expected inflation rate (Attachment 3), forecast depreciation (Attachment 4) and forecast capex (Attachment 5).[6]

We accept JGN's proposal to establish the opening capital base as at 1 July 2025 using the approved depreciation schedules based on forecast capex over the 2020–25 period.[7] These depreciation schedules will be adjusted for actual inflation outcomes over this period.

Table 2.2 sets out the projected roll forward of the capital base during the 2020–25 period.

5 JGN, *2020–25 Access Arrangement Proposal – Attachment 7.2 – PTRM*, June 2019.

6 Capex enters the capital base 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. Therefore, our draft decision on the forecast capital base also reflects our amendments to the rate of return for the 2020–25 access arrangement period (Attachment 3).

7 JGN, *2020-2025 Access Arrangement,* June 2019, p. 11, clause 3.10(b).

Table 2.2 AER's draft decision on JGN's projected capital base roll forward for the 2020–25 access arrangement period ($million, nominal)

	2020–21	2021–22	2022–23	2023–24	2024–25
Opening capital base	3352.7	3470.9	3560.0	3633.4	3700.4
Net capex[a]	188.5	168.8	159.9	162.0	173.4
Indexation of opening capital base	82.1	85.0	87.2	89.0	90.7
Less: straight-line depreciation	152.4	164.8	173.6	184.0	170.6
Closing capital base	**3470.9**	**3560.0**	**3633.4**	**3700.4**	**3793.9**

Source: AER analysis.

(a) Net of forecast disposals and capital contributions. In accordance with the timing assumptions of the PTRM, the capex includes a half-year WACC allowance to compensate for the six month period before capex is added to the capital base for revenue modelling.

2.2 JGN's proposal

JGN proposed an opening capital base as at 1 July 2015 of $2980.2 million ($ nominal). Rolling forward this capital base and using depreciation based on forecast capex approved for the 2015–20 period, JGN proposed a closing capital base as at 1 July 2020 of $3352.7 million ($ nominal) by adding actual net capex, removing approved forecast depreciation and adding inflation indexation on the opening capital base in each year of the 2015–20 period.

JGN's proposed capital base roll forward during the 2015–20 period is shown in Table 2.3.

Table 2.3 JGN's proposed capital base roll forward during the 2015—20 access arrangement period ($million, nominal)

	2015–16	2016–17	2017–18	2018–19[a]	2019–20[a]
Opening capital base	2980.2	3091.7	3162.0	3240.0	3294.6
Net capex[b]	203.7	181.9	189.9	181.2	201.1
Inflation of capital base	52.0	47.0	62.2	59.4	76.4
Less: straight-line depreciation[c]	144.2	158.6	174.0	186.1	173.3
Closing capital base	3091.7	3162.0	3240.0	3294.6	3398.7
Adjustment for 2014–15 capex					–46.0
Opening capital base as at 1 July 2020					**3352.7**

Source: JGN, *2020–25 Access Arrangement Proposal – Attachment 7.3 – RFM*, June 2019.

(a) Based on estimated capex.

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

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

JGN proposed a projected closing capital base as at 30 June 2025 of $3882.7 million ($ nominal). This value reflects its proposed opening capital base, forecast capex, expected inflation, and forecast depreciation over the 2020–25 period. The projected roll forward of the capital base during the 2020–25 period is shown in Table 2.4.

Table 2.4 JGN's proposed projected capital base roll forward during the 2020–25 access arrangement period ($million, nominal)

	2020–21	2021–22	2022–23	2023–24	2024–25
Opening capital base	3352.7	3484.4	3601.4	3697.3	3781.9
Net capex[a]	202.7	199.2	187.2	187.7	195.3
Inflation indexation on opening capital base	81.3	84.5	87.3	89.7	91.7
Less: straight-line depreciation	152.3	166.7	178.6	192.8	186.2
Closing capital base	**3484.4**	**3601.4**	**3697.3**	**3781.9**	**3882.7**

Source: JGN, *2020–25 Access Arrangement Proposal – Attachment 7.2 – PTRM,* June 2019.

(a) Net of forecast disposals and capital contributions. In accordance with the timing assumptions of the PTRM, the capex includes a half-year WACC allowance to compensate for the six month period before capex is added to the capital base for revenue modelling.

JGN proposed to use forecast depreciation to determine the opening capital base as at the commencement of the 2025–30 access arrangement period, consistent with the approach applied in the 2015–20 period.[8]

2.3 Assessment approach

Our approach to assessing JGN's projected capital base is consistent with that adopted in previous gas access arrangement decisions made under the National Gas Rules (NGR).[9] In accordance with rules 77(2) and 78 of the NGR, we applied three steps to calculate the projected capital base:

- First, we confirm the value of the opening capital base for the first year of the 2015─20 period (in this case, 1 July 2015). This includes making an adjustment to account for any difference between actual and estimated capex in the final year of the previous access arrangement period (in this case, 2014–15). This adjustment is made at the end of the 2015–20 period, and must also remove any benefit or penalty associated with any difference between the estimated and actual capex for

[8] JGN, *2020–2025 Access Arrangement,* June 2019, p. 11, clause 3.10(b).

[9] For example, AER, *Final decision: APA VTS Australia access arrangement 2018–22*, November 2017; AER, *Final decision: AusNet Services access arrangement 2018–22*, November 2017; AER, *Final decision: Multinet gas access arrangement 2018–22*, November 2017; AER, *Roma to Brisbane Gas Pipeline access arrangement 2017–22,* November 2017; AER, *Australian Gas Networks Victoria and Albury access arrangement 2018–22,* November 2017.

that year.[10] We note that this adjustment is subject to any further changes made in our assessment of conforming capex for 2014–15.

- Second, the opening capital base as at 1 July 2015 is rolled forward to determine the closing capital base as at 30 June 2020. This closing capital base is also used as the value of the opening capital base for the 2020–25 period as at 1 July 2020. This involves:[11]
    - adding conforming actual capex for each year—this requires assessing the capex and determining that it is consistent with the provisions of the 2015–20 access arrangement and data from historical Regulatory Information Notices (RINs), as well as the definition of 'conforming capital expenditure' in the NGR[12]
    - removing depreciation for each year based on the approach approved for the 2015–20 period
    - removing any capital contributions during the 2015–20 period[13]
    - adding any speculative capex or previously redundant assets that will be reused during the 2020–25 period
    - removing any redundant assets and disposals during the 2015–20 period
    - indexing the roll forward each year for actual inflation.
- Third, the capital base is projected over the 2020–25 period by rolling forward the opening capital base as at 1 July 2020 to 30 June 2025. This involves performing the following on the opening capital base:[14]
    - adding forecast conforming capex for each year, net of any forecast capital contributions
    - removing forecast depreciation for each year
    - removing the forecast value of assets to be disposed of during the 2020–25 period
    - indexing the capital base of the roll forward each year for expected inflation.

2.3.1 Interrelationships

The size of the capital base substantially impacts the service provider's revenue and the price consumers pay. It is an input into the determination of the return on capital and depreciation (return of capital) allowances.[15] Factors that influence the capital

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10 NGR, r. 77(2)(a).
11 NGR, r. 77(2).
12 NGR, r. 79(1).
13 NGR, r. 82(3).
14 NGR, r. 78.
15 The size of the capital base also impacts the benchmark debt raising cost allowance. However, this amount is usually relatively small and therefore not a significant determinant of revenues overall.

base will therefore flow through to these building block components and the annual building block revenue requirement. Other things being equal, a higher capital base increases both the return on capital and depreciation allowances. In turn, it increases the service provider's revenue, and prices for its services.

The capital base is determined by various factors, including;

- the opening capital base (meaning the value of existing assets at the beginning of the access arrangement period)
- net capex[16]
- depreciation
- indexation adjustment – so the capital base is presented in nominal terms, consistent with the rate of return.

The opening capital base depends on the value of existing assets as well as actual conforming net capex, actual inflation outcomes and depreciation in the past.

The capital base when projected to the end of the access arrangement period may increase due to 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 capital base at the start of each year.

Depreciation reduces the capital base. The depreciation allowance depends on the size of the opening capital base, the forecast net capex and the depreciation schedules applied to the assets.

We maintain the capital base in real terms by indexing for inflation. A nominal rate of return WACC is multiplied by the opening capital base to produce the return on capital building block.[17] To prevent double counting of inflation through the nominal WACC and indexed capital base, the regulatory depreciation building block has an offsetting reduction for indexation of the capital base.[18] 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 implications of our approach to indexing the value of the capital base on revenues are discussed further in Attachment 4.

Figure 2.1 shows the key drivers of the change in the capital base over the 2020–25 period as proposed by JGN. Overall, the closing capital base at the end of the 2020–25 period would be 15.8 per cent higher than the opening capital base at the start of that period based on the proposal, in nominal terms. The proposed forecast net capex

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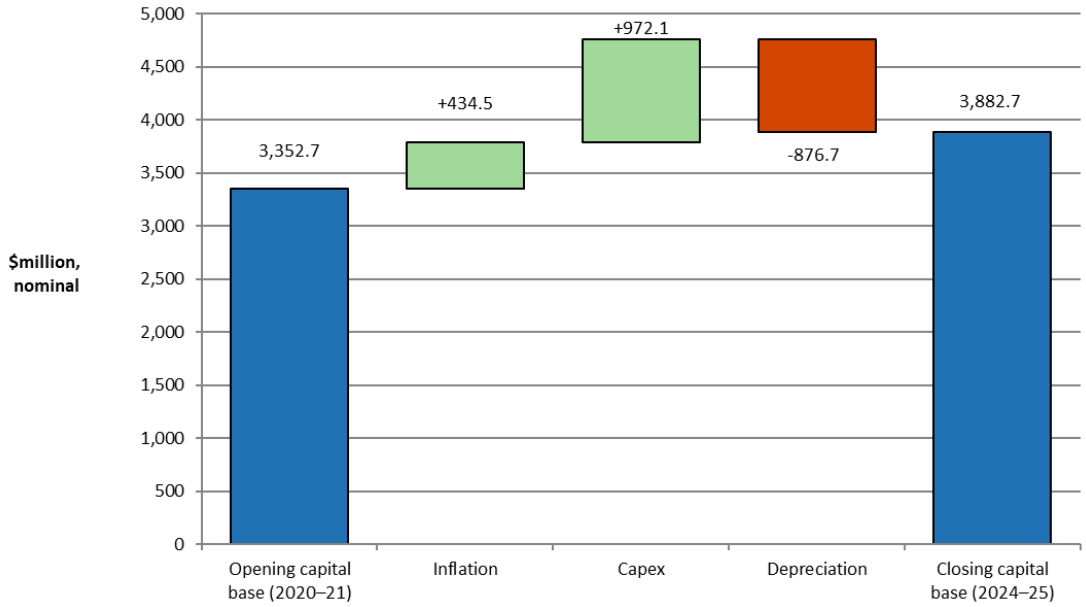
16 Net capex is gross capex less disposals and capital contributions.

17 NGR, r. 87.

18 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. Please also refer to section 4.3.1 of Attachment 4 of this draft decision for further explanation of the offsetting adjustment to the depreciation.

increases the capital base by about 29.0 per cent, while expected inflation increases it by about 13.0 per cent. Forecast depreciation, on the other hand, reduces the capital base by about 26.1 per cent.

Figure 2.1 Key drivers of changes in the capital base proposed by JGN ($million, nominal)



Source: JGN, *2020–25 Access Arrangement Proposal – Attachment 7.2 – PTRM,* June 2019.

Note: Capex is net of forecast disposals and capital contributions. It is Inclusive of the half-year WACC to account for the timing assumptions in the PTRM.

The capital base would increase by 2.7 per cent in real terms over the 2020–25 period based on JGN's proposal. The depreciation amount also largely depends on the opening capital base (which in turn depends on capex).

We have concerns with the size of JGN's proposed forecast capex, the largest driver of the increase in the capital base over the 2020–25 period. In this draft decision, we have reduced JGN's proposed forecast capex by $108.4 million ($2019–20), or 12.0 per cent, over the 2020–25 period.[19] Our review of JGN's forecast capex is set out in Attachment 5 of this draft decision.

We also have concerns with JGN's proposed shorter standard asset lives for its pipeline assets, which contribute to an increase in forecast depreciation to be removed from the capital base. In this draft decision, we have reduced JGN's forecast depreciation by $30.8 million ($ nominal). Our review of JGN's depreciation is set out in Attachment 4 of this draft decision.

[19] This amount is net of capital contributions and equity raising costs and excludes half-year WACC adjustment.

A 10.0 per cent increase in the opening capital base causes revenues to increase by about 1.9 per cent. However, the impact of the annual change in capital base on revenues depends on the source of the capital base change, as some drivers affect more than one building block cost.[20]

2.4 Reasons for draft decision

We determine an opening capital base value for JGN of $3352.7 million ($nominal) as at 1 July 2020, consistent with its proposal.[21]

We forecast a closing capital base value of $3793.9 million by 30 June 2025. This represents a decrease of $88.8 million (or 2.3 per cent) compared to JGN's proposal. We are satisfied this amendment is necessary having regard to the requirements of the NGR.

The reasons for our decision are discussed below.

2.4.1 Roll forward of capital base during 2015–20 period

We accept JGN's proposed opening capital base of $3352.7 million ($ nominal) as at 1 July 2020.[22]

To determine the opening capital base for JGN as at 1 July 2020, we have rolled forward the capital base over the 2015–20 access arrangement period to determine a closing capital base value as at 30 June 2020. In doing so, we reviewed the key inputs of JGN's proposed RFM, such as actual inflation, rate of return, gross capex values, capital contribution values, forecast depreciation amounts and asset lives. We found these inputs were correct and reconciled with relevant data sources such as ABS data, RINs and the 2015–20 decision models.[23] However, we have amended the 2019–20 WACC input in JGN's RFM to be consistent with the remittal PTRM for the 2015–20 period. This update did not have a material impact on JGN's proposed opening capital base as at 1 July 2020.[24]

Conforming capital expenditure in the 2015–20 period

Our assessment of conforming capex is set out in Attachment 5. In determining the opening capital base as at 1 July 2020, we assessed whether JGN's proposed capex

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20 If capex causes the capital base to increase, then return on capital, depreciation, and debt raising costs all increase too. If a reduction in depreciation causes the capital base to increase, then revenue could increase or decrease. In the latter case, the higher return on capital is offset (perhaps more than offset) by the reduction in the depreciation allowance. Inflation naturally increases the capital base in nominal terms.

21 We updated the 2019–20 WACC input in JGN's RFM, however this does not impact on the opening RAB as at 1 July 2020 within one decimal place.

22 JGN, *2020–25 Access Arrangement Proposal – Attachment 7.3 – RFM*, June 2019.

23 At the time of this draft decision, the roll forward of JGN's capital base includes estimated capex values for 2018–19 and 2019–20. We will update the 2018–19 estimated capex with actuals in the final decision. We may also update the 2019–20 estimated capex with a revised estimate in the final decision.

24 Compared to JGN's proposal, our draft decision increases the opening capital base as at 1 July 2020 by $6440.

amounts for the 2015–20 access arrangement period are properly accounted for in the capital base roll forward.

We accept JGN's proposed actual capex as conforming capex during the 2015–20 period. Therefore, we accept that actual conforming capex has been properly accounted for in the proposed capital base roll forward consistent with the requirements of the NGR.[25] However, we note that the proposed capex for 2018–19 and 2019–20 are estimates. Therefore the 'approved' capex in this draft decision for 2018–19 and 2019–20 are placeholder amounts. We expect JGN will provide actual capex for 2018–19 in its revised proposal and the 2019–20 capex estimate may be revised based on more up to date information. We will assess whether the actual capex for 2018–19 and any revised estimate for 2019–20 are conforming capex in our final decision.

2.4.2 Projected capital base during 2020–25 period

We forecast a closing capital base of $3793.9 million ($ nominal) as at 30 June 2025 for JGN, which represents a reduction of $88.8 million (2.3 per cent) compared to JGN's proposed amount of $3882.7 million. This results from our draft decision on the inputs to the determination of the projected capital base. We have amended the inputs in the following ways:

- We reduced JGN's proposed forecast net capex[26] for the 2020–25 access arrangement period by $119.5 million ($ nominal) or 12.3 per cent. Our assessment of the proposed forecast capex is set out in Attachment 5.
- We updated JGN's proposed expected inflation rate of 2.42 per cent per annum for the 2020–25 access arrangement period to 2.45 per cent per annum (Attachment 3). This results in an increase to the indexation of the capital base component for the 2020–25 period by $4.7 million ($ nominal) or 1.1 per cent, all else being equal (where the capital base is unchanged from JGN's proposal).[27]
- We reduced JGN's proposed forecast straight-line depreciation allowance for the 2020–25 access arrangement period by $31.2 million ($ nominal) or 3.8 per cent.[28] Our assessment of the proposed forecast depreciation is set out in Attachment 4.

Figure 2.2 shows the key drivers of the change in JGN's capital base over the 2020–25 period for this draft decision. Overall, the closing capital base at the end of the 2020–25 period is forecast to be 13.2 per cent higher than the opening capital base at the start of that period, in nominal terms. The approved forecast net capex and expected

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25 NGR, r. 77(2)(b).

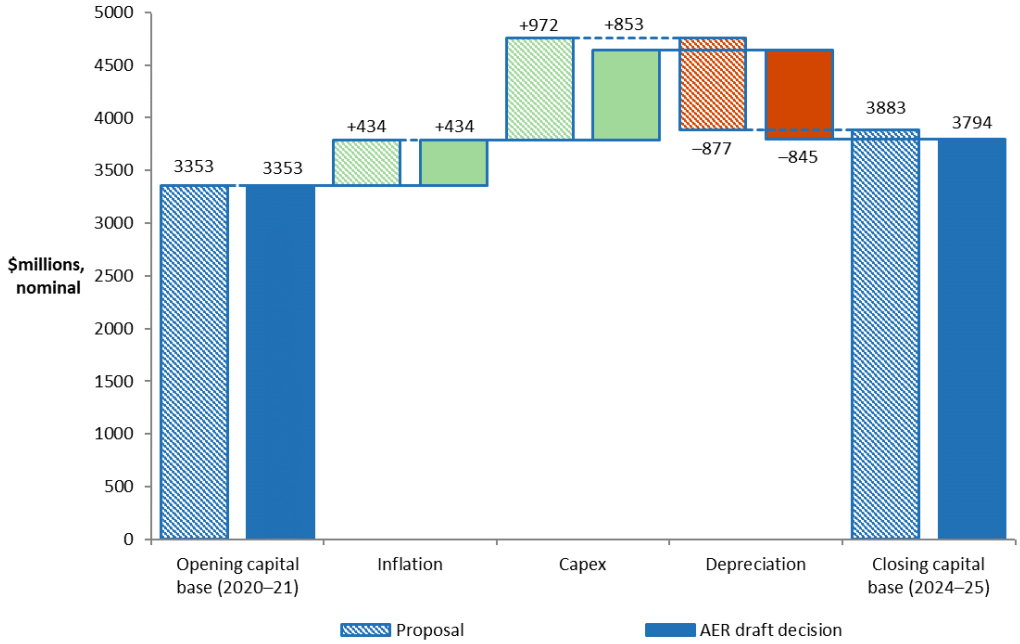
26 This amount is net of capital contributions, disposals and equity raising costs and inclusive of half-year WACC adjustment.

27 Compared to JGN's proposal, our draft decision results in a decrease to the indexation of the capital base by $0.4 million or 0.1 per cent ($ nominal). The decrease in the indexation to the capital base, despite the increase in the expected inflation rate, is due to the lower opening capital base because of the lower forecast capex in our draft decision.

28 Regulatory depreciation is the net total of straight-line depreciation and inflation indexation of the capital base.

inflation increase the capital base by about 25.4 per cent and 12.9 per cent, respectively. Forecast depreciation, on the other hand, reduces the capital base by about 25.2 per cent.

Figure 2.2 Key drivers of changes in the capital base – JGN's proposal compared with AER's draft decision ($ million, nominal)



Source: AER analysis.

Note: Capex is net of forecast disposals and capital contributions. It is inclusive of the half-year WACC to account for the timing assumptions in the PTRM.

2.4.3 Capital base at commencement of 2025–30 period

The capital base at the commencement of the 2025–30 access arrangement period will be subject to adjustments consistent with the NGR. The adjustments for JGN include (but are not limited to) actual inflation and approved depreciation over the 2020–25 period.

We accept JGN's proposal to establish the opening capital base as at 1 July 2025 using the approved depreciation schedules based on forecast capex over the 2020–25 period.[29] This is consistent with the requirement in clause 3.10(b) of its current access arrangement which requires that depreciation be based on forecast capex. We approved such an approach in our recent gas access arrangement decisions.[30] This

[29] JGN, *2020-2025 Access Arrangement,* June 2019, p. 11, clause 3.10(b).

[30] AER, *Final decision: APA VTS Australia access arrangement 20118–22, Attachment 2 – Capital base*, November 2017, p. 8; AER, *Final decision: AusNet Services access arrangement 2018–22, Attachment 2 – Capital base*, November 2017, p.23; AER, *Final decision: Multinet gas access arrangement 2018–22, Attachment 2 – Capital*

approach is also consistent with the approach outlined in our *Access Arrangement Guideline*.[31] The amount of the forecast depreciation is to be approved by us in the final decision for the 2020–25 period.

We consider JGN's 2020–25 access arrangement should further provide clarity that the capital base as at 1 July 2025 is to be established using the approved depreciation schedules (straight-line) based on forecast capex at the asset class level.[32] Having regard to the capital base as determined in the preceding access arrangement, we consider this will provide for a forecast of depreciation over the 2020–25 period that provides for continuity and consistency in determining depreciation from one access arrangement period to the next.[33]

2.5 Revisions

We require the following revisions to make the access arrangement proposal acceptable:

Revision 2.1	Make all necessary amendments to reflect this draft decision on the roll forward of the capital base for the 2015–20 access arrangement period, as set out in Table 2.1.
Revision 2.2:	Make all necessary amendments to reflect this draft decision on the projected capital base for the 2020–25 access arrangement period, as set out in Table 2.2.
Revision 2.3:	Amend clause 3.10(b) of the access arrangement fixed principle as follows: It is a fixed principle (as provided for in Rule 99 of the National Gas Rules) that depreciation for establishing the opening Capital Base will be based on forecast regulatory depreciation (straight-line) at the asset class level. This fixed principle remains in force for the Access Arrangement Period covered by this Access Arrangement. This principle is also fixed for the next access arrangement period.

base, November 2017, p.7; AER, *Roma to Brisbane Gas Pipeline access arrangement 2017–22, Attachment 2 – Capital base,* November 2017, p.7; AER, *Australian Gas Networks Victoria and Albury access arrangement 2018–22, Attachment 2 – Capital base,* November 2017, p.6.

31 AER, *Final access arrangement guideline*, March 2009, pp. 61–62.

32 NGR, r. 90.

33 NGL, s. 24(4) and s. 28(2)(a)(i).