# Final decision

## Jemena Gas Networks (NSW) access arrangement 2025 to 2030

(1 July 2025 to 30 June 2030)

## Attachment 5 – Capital expenditure

**May 2025**

AUSTRALIAN ENERGY REGULATOR

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# List of attachments

This attachment forms part of our final decision on the access arrangement that will apply to Jemena Gas Networks' (NSW) for the 2025–30 access arrangement period. It should be read with all other parts of this final decision.

For some issues that had draft decision attachments, and which were settled at the draft decision stage or required only minor updates, the reasons in the draft decision attachments and, where relevant, in the final decision Overview set out our reasons for our final decision on the issue. In these circumstances, we have not prepared all attachments, and our draft decision reasons form part of this final decision. The final decision attachments have been numbered consistently with the equivalent attachments to our draft decision.

The final decision includes the following documents:

Overview

Attachment 2 – Capital base

Attachment 4 – Regulatory depreciation

Attachment 5 – Capital expenditure

Attachment 6 – Operating expenditure

Attachment 7 – Corporate income tax

Attachment 9 – Reference tariff setting

Attachment 10 – Reference tariff variation mechanism

Attachment 12 – Demand

Attachment 13 – Capital expenditure sharing scheme

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# 5 Capital expenditure

Capital expenditure (capex) refers to the capital costs and expenditure incurred in the provision of pipeline services.[1] This investment mostly relates to assets with long lives and these costs are recovered over several access arrangement periods.

In this attachment, we outline our assessment of JGN's capex proposal. Our final decision consists of two parts:

- whether capex spent in the six years before the 2025−30 access arrangement period is conforming capex and should be added to the opening capital base[2] and
- whether JGN's forecast of capex for the 2025−30 access arrangement period meets the conforming capex criteria in the National Gas Rules (NGR).[3]

## 5.1 Final decision

### 5.1.1 Conforming capex for the 2019−20 and the 2020−25 period

We approve JGN's actual capex for 2019−20 and the 2020−24 period as conforming capex and have added it to the opening capital base.

We have included JGN's estimate of capex from 2024−25 in the opening capital base, as actual capex is not yet available. We will assess whether JGN's actual capex for 2024−25 is conforming capex in the subsequent (2030-35) access arrangement review and adjust for any differences between actual and estimated capex.[4]

### 5.1.2 Conforming capex for the 2025−30 period

We do not accept JGN's capex forecast of $838.1 million ($2024−25) net capex[5] for the 2025-30 access arrangement period as conforming capex under the NGR.[6] We consider our alternative forecast of $717.4 million ($2024−25) net capex reflects an amount that is consistent with the conforming capex criteria in rule 79 of the NGR.

Overall, we found that most aspects of JGN's proposal were likely to be conforming capex. We determined an alternative estimate of $717.4 million ($120.7 million less than JGN's proposal) because we did not accept JGN's proposed capex on[7]:

- renewable gas connections (we excluded the full proposed capex of $78.9 million)
- meter replacement, which we reduced by $49.7 million compared to JGN's revised proposal

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1 NGR, r. 69.

2 NGR, r. 77 sets out the process for determining the opening capital base.

3 These criteria are set out in NGR, r. 79.

4 This is consistent with our obligations under NGR, rr. 77(2), 79.

5 Net capex is JGN's total capex, minus capital contributions made by customers to fund certain investments.

6 The criteria for conforming capital expenditure are set out in NGR, r. 79.

7 Numbers may not sum due to rounding.

- scope factor allowance (we excluded the full proposed capex of $26.1 million)[8]
- customer connections capex, which we increased by $35.0 million compared to JGN's revised proposal to reflect our decision on demand (see Attachment 12 of this final decision).[9]

We compare our alternative estimate to JGN's forecast in Table 5.1. Our decision to not accept JGN's scope factor allowance has resulted in reductions across several capex categories that we otherwise consider prudent and efficient.

**Table 5.1 Net capex proposal by category ($million, 2024−25) alternative estimate**

| Capex category | Initial proposal | Draft decision | Revised proposal | Final decision | Difference | Difference (%) |
|---|---|---|---|---|---|---|
| Connections | 354.8 | 273.9 | 372.5 | 330.9 | -41.6 | -11% |
| *Customer connections* | *274.1* | *273.9* | *293.6* | 330.9 | 37.2 | 13% |
| *Renewable connections* | *80.8* | *0* | *78.9* | 0.0 | -78.9 | -100% |
| Meter replacement | 158.6 | 110.8 | 171.1 | 121.4 | -49.7 | -29% |
| Other capex | 171.7 | 150.6 | 168.4 | 153.4 | -15.0 | -9% |
| Mains replacement | 62.5 | 52.9 | 61.2 | 51.8 | -9.4 | -15% |
| Mains augmentation | 15.1 | 13.5 | 14.8 | 13.2 | -1.6 | -11% |
| Overheads | 23.7 | 22.5 | 26.4 | 25.3 | -1.0 | -4% |
| ICT | 45 | 45 | 40 | 40.0 | 0.0 | 0% |
| Telemetry | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0% |
| **Gross Total** | **832.5** | **670.1** | **855.2** | 736.9 | -118.4 | -14% |
| Contributions | 15.9 | 16.1 | 17.1 | 19.4 | 2.3 | 13% |
| **Net Total** | **816.5** | **654.1** | **838.1** | 717.4 | -120.7 | -14% |

Source: JGN, *JGN - RP - Att 4.3M - Capital expenditure forecast model - 20250115 - Public,* January 2025; AER Analysis. Numbers may not sum due to rounding.

Note: An adjustment has been made across capex categories to account for our decision on the scope factor allowance.

8 We referred to this as a "risk allocation" in our draft decision, while JGN uses "scope factor allowance". We have used JGN's terminology in the final decision. The scope factor allowance is spread across multiple capex categories, and our decision to not accept this results in changes across these categories.

9 In this attachment, "customer connections" means all new gas connections except renewable gas connections.

# 5.2 JGN's proposal

### 5.2.1 Capex in 2019-20 and the 2020-25 period

JGN's actual net capex in 2019-20 was $184.9 million[10], while its actual and estimated capex in the 2020-25 period was $871.9 million.[11] [12]

### 5.2.2 Forecast capex for the 2025−30 period

JGN has proposed $838.1 million ($2024−25) net capex for the 2025-30 access arrangement period.[13] While this is 6.7% below actual and estimated capex in the current period, new customer connections (i.e. non-renewable gas connections) are forecast to fall by 42.2%. This means that although new connections are forecast to almost halve, the meter replacement, mains replacement, mains augmentation and other capex categories have increased above what JGN has spent in the current period. Table 5.2 compares JGN's capex forecast for the 2025−30 period with its actual and estimated capex in the 2020−25 period. Connections, contributions, ICT, telemetry, and capitalised overheads are all lower, while meter and mains replacement, augmentation and other capex are all higher, than in the current period.

**Table 5.2 JGN's proposed capex by category over the 2025−30 access arrangement period ($million, 2024−25)**

| Capex category | Actual and estimated 2020–25 | Proposed 2025−30 | Change (%) | Proportion of net capex (%) |
|---|---|---|---|---|
| Connections | 488 | 372.5 | -24% | 44% |
| *Customer connections* | *485.5* | *293.6* | *-40%* | *35%* |
| *Renewable connections* | *2.5* | *78.9* | | *9%* |
| Meter replacement | 111.1 | 171.1 | 54% | 20% |
| Other capex | 156.3 | 168.4 | 8% | 20% |
| Mains replacement | 34.4 | 61.2 | 78% | 7% |
| Mains augmentation | 11.2 | 14.8 | 33% | 2% |
| Overheads | 36.7 | 26.4 | -28% | 3% |
| ICT | 86.5 | 40 | -54% | 5% |
| Telemetry | 2.1 | 0.9 | -56% | 0% |
| Gross Total | 926.1 | 855.2 | -10% | 102% |
| Contributions | 54.3 | 17.1 | -67% | 2% |

10 Our capex final decision for 2019-20 was $206.8 million (adjusted to $2024-25), see AER - Final decision JGN distribution access arrangement - Attachment 6 - Capital expenditure - June 2015, p. 8.

11 JGN, *JGN - RP - Att 4.3M - Capital expenditure forecast model - 20250115 - Public,* January 2025.

12 Our capex final decision for JGN's 2020-25 access arrangement period was $1,049 million (adjusted to $2024-25) – see AER - Final decision - JGN access arrangement 2020-25 - Attachment 5 - Capital expenditure - June 2020, p. 11.

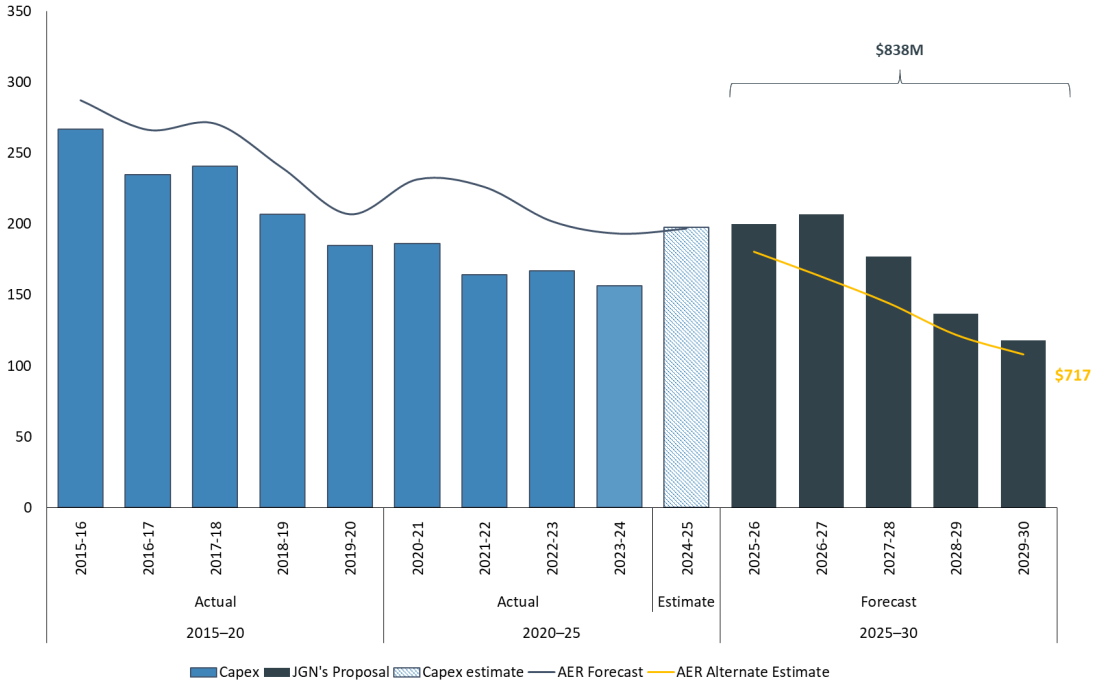
13 Net capex is net of capital contributions.

| Capex category | Actual and estimated 2020–25 | Proposed 2025−30 | Change (%) | Proportion of net capex (%) |
|---|---|---|---|---|
| Net Total | 871.9 | 838.1 | -7% | 100% |

Source: JGN, *JGN - RP - Att 4.3M - Capital expenditure forecast model - 20250115 - Public,* January 2025; AER Analysis. Numbers may not sum due to rounding.

Figure 5.1 shows JGN's actual and estimated expenditure over the last two access arrangement periods, our forecast, as well JGN's forecast for the 2025-30 period and our final decision.

**Figure 5.1 AER's Final decision compared to JGN's past and proposed capex ($million, 2024-25, net of capital contributions)**




Source: AER analysis.

## 5.3 Assessment approach

We must make two decisions on JGN's capex. First, we assess past capex to determine whether it is conforming capex that can be added to the opening capital base.[14] Second, we assess JGN's forecast of capex for the 2025−30 period to determine whether it meets the new capex criteria set out in the NGR.[15]

The following sections set out our approach and the tools and techniques we employ in forming these decisions.

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14 Under NGR, r. 77(2)(b), we add capital expenditure to the capital base only if it is conforming capital expenditure.

15 NGR, r. 79.

### 5.3.1 Capex in 2019−20 and the 2020−25 period

We reviewed JGN's submission and supporting material to assess its actual and estimated capex for the 2020–25 access arrangement period. Where capex was higher than forecast in our 2020–25 access arrangement final decision, we scrutinised JGN's reasons for the overspend. We also had regard to the presence of the capital expenditure sharing scheme (CESS), and the incentive this provides to deliver efficient capex.[16] We used this information to identify whether capex over the 2020–25 period was conforming capex. Our analysis is discussed in Appendix C.

### 5.3.2 Capex in the 2025−30 period

Our final decision is made on total forecast capex in accordance with the new capex criteria in the NGR.[17]

To make a decision, we construct an alternative estimate of conforming capex and compare it to the business' proposal. If our alternative estimate is not materially different to a proposal, we will usually accept the proposal. On the other hand, if there is a material difference in total capex, we will not accept the business' forecast and substitute it with our alternative estimate.

We have assessed the key drivers of forecast capex to consider whether JGN's proposed capex complies with the new capex criteria. In doing so, we relied on the following information:

- JGN's access arrangement submission and access arrangement information, which outlines its capex program and the main drivers of those programs
- business cases that detail the expenditure requirements for specific projects
- JGN's Regulatory Information Notice (RIN) responses
- JGN's capex forecast model
- responses to information requests
- submissions from interested parties.

Our assessment was particularly focussed on the materiality of the capex categories, whether the expenditure was significantly higher than historical expenditure, whether the capex related to a new type of asset, and whether there was significant precedent value in our decision or where stakeholders have raised significant issues. We also took into consideration the interrelationships between the capex forecast and other constituent components of our final Decision, to assist in determining if it contributes to the achievement of the National Gas Objective (NGO).[18]

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16 The capital expenditure sharing scheme (CESS) provides an incentive for a service provider to realise savings on its capex program by rewarding those service providers that spend less capex than forecast and penalising those that spend more than forecast. Further information can be found in the CESS section at attachment 13.

17 NGR, r. 79(1).

18 We are required to do this under NGL, s. 28(1).

### 5.3.3 Interrelationships

In assessing JGN's total forecast capex, we also considered other components of its access arrangement proposal, including:

- possible trade-offs between capex and operating expenditure (opex)
- any differences between capitalisation policies applied in the 2020−25 and 2025−30 periods
- the growth in the price of labour for opex and capex
- demand forecasts, particularly relating to forecast new gas connections
- JGN's proposal for accelerated depreciation.

## 5.4 Submissions on the proposal

Most submissions on JGN's capex related to JGN's renewable connections capex. Several stakeholders submitted in support of JGN's renewable connections projects. They urged us to reconsider our approach to renewable gas from our draft decision, where we did not consider JGN had sufficiently justified the prudency and efficiency of its 8 proposed projects. General themes from these stakeholder submissions include that these renewable plants would contribute to emissions reduction and could serve hard-to-electrify customers.[19]

The Justice and Equity Centre (JEC), the City of Sydney, Energy Consumers Australia (ECA) and the Consumer Challenge Panel, sub-panel 31 (CCP31) expressed opposition to the inclusion of the proposed renewable connections projects. A general theme was that JGN has not demonstrated that residential and small business customers would be significant beneficiaries of these connections, and so they should not be expected to bear the costs of the connections.[20]

JGN's Picarro program, meter replacement program, and scope factor allowance were mentioned in the submissions. We discuss these in submissions in the relevant sections of Appendix A and B.

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19 Australian Alliance for Energy Productivity, *A2EP - Submission JGN's 2025–30 revised proposal and draft decision - February 2025*, 14 February 2025; Australian Pipelines and Gas Association, *APGA - Submission on JGN's 2025–30 revised proposal and draft decision - February 2025*, February 2025; Bioenergy, *Bioenergy - Submission on JGN's 2025–30 revised proposal and draft decision - February 2025*, February 2025; Energy Networks Australia, *ENA - Submission and attachment on JGN's 2025–30 revised proposal and draft decision - February 2025*, February 2025; Opal, *Opal - Submission on JGN's 2025–30 revised proposal and draft decision - February 2025*, February 2025; GreenPower, *GreenPower - Submission on JGN's 2025–30 revised proposal and draft decision - February 2025*, February 2025; Gwydir, *Gwydir - Submission on JGN's 2025–30 revised proposal and draft decision - February 2025*, February 2025; Optimal Renewable Gas, *Optimal Renewable Gas - Submission and attachment on JGN's 2025–30 revised proposal and draft decision - January 2025*, January 2025.

20 JEC, *JEC - Submission on JGN's 2025–30 revised proposal and draft decision - February 2025*, February 2025; City of Sydney, *City of Sydney - Submission on JGN's 2025–30 revised proposal and draft decision - February 2025*, February 2025; ECA, *ECA - Submission on JGN's 2025–30 revised proposal and draft decision - February 2025*, February 2025; CCP31, *CCP31 - Advice to the AER - JGN 2025-30 revised access arrangenmment and draft decision - February 2025*, February 2025.

# 5.5 Reasons for final decision

## 5.5.1 Conforming capex for 2019−20 and the 2020−25 period

JGN's actual and estimated capex for the 2020−25 access arrangement is $871.9 million (net of capital contributions), compared with the AER's final decision of $1,049.0 million.[21] JGN's actual and estimated expenditure was lower than the final decision across most expenditure categories, except for "other capex" and customer connections expenditure.

Our decision on conforming capex also relates to capex for 2019−20, which was included as an estimate in the 2020−25 opening capital base. JGN's actual capex for 2019−20 was $184.1 million lower than the amount included in the AER's final decision for the 2015-20 access arrangement period of $206.8 million.[22]

We reviewed JGN's submission and supporting material to assess this expenditure, and consider that the actual and estimated capex for the 2020-25 period reasonably reflects the capex criteria. We are also satisfied that JGN's capex for 2019−20 is conforming.

See Appendix C for further detail on our review of conforming capex for the 2020−25 access arrangement period.

## 5.5.2 Conforming capex for 2025−30

### 5.5.2.1 AER alternative estimate on capex

As noted in section 5.3, we have assessed JGN's proposed total capex by constructing an alternative estimate of capex. Based on our assessment, we were not satisfied that JGN's forecast capex reflected prudent and efficient expenditure. Table 5.3 outlines our alternative estimate by capex driver for the 2025−30 period.

**Table 5.3 AER alternative estimate on capex ($million, 2024−25)**

| Capex category | 2025-26 | 2026-27 | 2027-28 | 2028-29 | 2029-30 | Total |
|---|---|---|---|---|---|---|
| Connections | 77.3 | 71.8 | 70.9 | 60.6 | 50.3 | **330.9** |
| *Customer connections* | *77.3* | *71.8* | *70.9* | *60.6* | *50.3* | ***330.9*** |
| *Renewable connections* | - | - | - | - | - | **-** |
| Meter replacement | 24.8 | 27.9 | 20.5 | 23.8 | 24.4 | **121.4** |
| Other capex | 50.6 | 33.4 | 31.0 | 20.7 | 17.7 | **153.4** |
| Mains replacement | 10.4 | 15.7 | 11.9 | 7.4 | 6.4 | **51.8** |
| Mains augmentation | 4.1 | 3.2 | 1.7 | 2.0 | 2.2 | **13.2** |
| Capitalised overheads | 6.4 | 5.8 | 5.0 | 4.3 | 3.8 | **25.3** |
| ICT | 11.3 | 9.3 | 7.2 | 6.3 | 5.8 | **40.0** |
| Telemetry | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | **0.9** |

[21] AER, *AER - JGN access arrangement 2020–25 - PTRM - 2024–25 RoD update - March 2024*, March 2024; AER, *JGN - Att 7.7M - Roll Forward Model - June 2024*, June 2024.

[22] AER, *AER - Final decision JGN - PTRM - February 2019*, February 2019; AER, *AER - JGN access arrangement 2020–25 - PTRM - 2024–25 RoD update - March 2024*, March 2024

| Capex category | 2025-26 | 2026-27 | 2027-28 | 2028-29 | 2029-30 | Total |
|---|---|---|---|---|---|---|
| **Gross Total** | **185.1** | **167.3** | **148.4** | **125.3** | **110.8** | **736.9** |
| Contributions | 4.5 | 4.2 | 4.2 | 3.6 | 3.0 | **19.4** |
| **Net Total** | **180.6** | **163.1** | **144.2** | **121.7** | **107.8** | **717.4** |

Source: JGN, *JGN - RP - Att 4.3M - Capital expenditure forecast model - 20250115 - Public,* January 2025; AER Analysis. Numbers may not sum due to rounding.

### 5.5.3 Reasons for the Final decision

We do not accept JGN's forecast of $838.1 million net capex. We have instead adopted our alternative estimate of $717.4 million, which we consider reflects an amount that is conforming capex. Our assessment focused on projects that we did not include in our draft decision, but which JGN reproposed in its revised proposal. We did not undertake a detailed analysis of capex that we accepted in our draft decision, or capex which we did not accept but which JGN did not repropose. The reasons for our final decision are set out in Table 5.4, while a more detailed assessment of the key drivers is provided in Appendices A and B.

### 5.5.4 Top-down assessment

We have undertaken a top-down assessment of JGN's total capex and a similar assessment of each capex category.

JGN's total forecast net capex is $838.1 million, which is $33.8 million (or 4%) lower than its 2020-25 period actual (and estimated) net capex of $871.9 million. We note that the reduction is largely driven by a lower forecast of new customers connecting to the network, which has reduced customer connections capex by $191.9 million or 40%. Several capex categories have increased materially, including renewable gas connections, meter replacement, other capex, mains replacement and augmentation.

We are not satisfied, from a top-down perspective, that JGN's total capex is conforming capex. We considered a more detailed review of the drivers of JGN's forecast was necessary to form an alternative estimate of conforming capex. Our review focussed on capex for renewable gas connections, meter replacement, mains replacement and augmentation, and the other capex category.

### 5.5.5 Capex category assessment

Table 5.4 summarises our review of JGN's capex categories.[23] We considered capex relating to renewable gas connections, meter replacement and other capex, along with JGN's approach to scope factor allowance, were higher than necessary to meet the capex criteria. We also had regard to our decision on demand (see Attachment 12 to this final decision), where we considered JGN's revised proposal had under-forecast new residential customers. Based on this, we considered JGN's forecast customer connections capex and capital contributions is lower than necessary to meet the capex criteria.

[23] Our findings on each capex driver are part of our broader analysis. They should not be considered in isolation. We do not approve a forecast of expenditure for each individual capex driver or project/program. Instead, we use our findings on the different capex drivers to assess the proposal as a whole and arrive at an alternative estimate for total capex where necessary. Our decision on total capex does not limit service provider's actual spending.

We formed the view that an alternative estimate of $717.4 million (net capex) was reasonably likely to reflect prudent and efficient costs, which is $120.7 million lower than JGN's forecast of $838.1 million. We also formed the view that all capex included in our alternative estimate is justifiable capex under one or more of clauses 79(2)(c)(i)-(iv) of the NGR. Our analysis of key capex drivers is further explained in Appendices A and B.

**Table 5.4 Summary of our findings and reasons, by capex driver**

| Driver | Findings and reasons |
|---|---|
| Scope factor allowance | JGN has allocated an allowance for a scope factor allowance for multiple projects across all categories apart from telemetry, ICT, and capitalised overheads, over and above its estimate of the cost of completing these projects. JGN's total proposed scope factor allowance amounts to $38.7 million. We do not consider this prudent or efficient and have not included this in our alternate estimate, resulting in a reduction of $26.1 million.[24]<br><br>While we acknowledge that at a project level, the inclusion of a scope factor allowance may contribute to an individual forecast that reflects actual cost, we are not convinced that this issue is systemic at a total capex portfolio level. That is, even if JGN did not use a scope factor allowance, and hence overspent against its forecast on the projects the allowance would have applied to, JGN could still compensate for this overspend with underspends for other projects. We note that JGN applied a similar scope factor allowance uplift in the current access arrangement period, and has outperformed its approved capex forecast by around $178 million or 17% (and hence achieved a CESS benefit).<br><br>We do not consider the scope factor allowance proposed by JGN is prudent or efficient. Our alternative estimate does not include the scope factor allowance. A more detailed assessment is provided in section A.1 in Appendix A. |
| Meter replacement | JGN proposes to spend $171.1 million on meter replacement in the 2025−30 access arrangement period. Based on our review, we consider the majority, but not all, of this capex is prudent and efficient, and have included an alternative estimate of $121.4 million in the final decision. In particular, we did not consider JGN had established that its failure rates would greatly increase in the access arrangement period, meaning that its proposal to increase the volume of meter replacements was not likely to be required.<br><br>A more detailed assessment is provided in section A.2 in Appendix A. |
| Customer connections | As set out in Attachment 12, we consider that JGN has likely under forecast the number of new customer connections by around 12,000 across the five-year period.[25] We have included an additional $35.0 million capex net of capital contributions to account for the efficient cost of connecting these customers. We note that, while this increases our final decision on capex, it also increases demand. Holding other factors equal, the increase in demand more than offsets the additional cost of the capex, such that customer prices are slightly lower than they would have been. A more detailed assessment is provided in section |

[24] This figure excludes the scope factor allowance for projects we have entirely removed from our alternate estimate.

[25] AER, JGN 2025-30 access arrangement, Final decision – Attachment 12 – demand.

| Driver | Findings and reasons |
|---|---|
| | A.4 in Appendix A, while our decision on the demand forecast is detailed in Attachment 12 of this final decision. |
| Renewable connections | JGN proposes renewable gas projects to connect 8 biomethane production facilities to its NSW network, with total forecast expenditure of $78.9 million. If all 8 of these facilities became operational, JGN estimates they would produce 6.7PJs of local renewable gas to its network, or around 8.3% of the energy transported on the JGN network.[26]<br><br>In our draft decision, we noted concerns regarding the economic case put forward by JGN for these projects, and that there was substantial risk the projects would not go ahead, leaving JGN customers to pay for the unutilised pipeline assets.<br><br>JGN provided further information in support of the first issue and proposed a fixed principle to address the second issue. The fixed principle would require JGN to return revenue received to fund these projects if they did not commence in the 2025-30 access arrangement period or if the AER determined, in the 2030−35 access arrangement decision, that capex spent on these projects is non-conforming.<br><br>While we considered the updated economic information from JGN addressed the first issue, we ultimately considered the second issue was not sufficiently addressed. We considered the uncertainty surrounding these projects means that the capex proposed for these investments is not forecast conforming capex under the new capex criteria. This uncertainty cannot be alleviated by the fixed principle proposed by JGN. In particular, the proposed fixed principle treats currently non-conforming forecast capex as currently conforming forecast capex, and would therefore be inconsistent with the NGR. As such, the NGR would operate to the exclusion of the fixed principle.[27] Further, including currently non-conforming capex (even with a future 'return' mechanism), would inappropriately distort the recovery of revenue across multiple access arrangement periods. We provide more detail on this in Appendix B.<br><br>We have also provided guidance to JGN (at Appendix B) on how we may consider this expenditure in future access arrangement reviews, including the matters we may have regard to in assessing such capex. |
| Other Capex – Obsolescence projects | JGN proposed $5.6 million in capex for obsolescence related replacements at the Tempe pressure reduction station.<br><br>In our Draft Decision, we did not accept this project, as the project did not have the highest net present value in JGN's analysis. In the revised proposal, JGN updated the inputs to its cost benefit analysis model. After making these adjustments, the proposed project now has the highest net present value. We consider the updates are reasonable. We have included the project in our alternate estimate, after excluding its scope factor allowance, resulting in a project cost of $4.8 million.[28] |

26 JGN, *JGN - RP - Att 4.2 - Renewable gas expenditure - 20250115 – Public,* 15 January 2025, p. 1.

27 NGR, r. 99(4)(b).

28 JGN, *JGN - RP - Att 4.1 - Capital expenditure - 20250217 – Public*, January 2025, pp. 16-24.

| Driver | Findings and reasons |
|---|---|
| Other Capex - Picarro | JGN proposes capex and opex for an emissions detection technology called Picarro, which is an advanced vehicle mounted leak detection system. While most of the costs for Picarro are opex, JGN proposed to expand its fleet from 3 to 6 vehicles to accommodate the technology, totalling $0.4 million of capex.<br><br>We have accepted an opex step change for Picarro. The reasons for this are set out in Attachment 6 of this final decision. Given our position on opex, we consider the capex is also efficient. We have included the $0.4 million of capex related to Picarro in our alternative estimate. |
| All other categories | We accepted JGN's forecast for capitalised overheads, telemetry, ICT, mains replacement and mains augmentation in our draft decision.[29] We remain of the view that these categories conform with the new capex criteria in the NGR, though some adjustments have been made to reflect our decision on the scope factor allowance, and capitalised overheads have been adjusted to reflect the reduced size of the capex forecast. |

## 5.6 Revisions

We have proposed the following revisions to the access arrangement as set out in Table 5.5.

**Table 5.5 Capex revisions**

| Revision | Amendment |
|---|---|
| Revision 5.1 | Make all necessary amendments to reflect our final decision on the proposed capex forecast for the 2025–30 access arrangement period, as set out in section 5.1. |
| Revision 5.2 | Delete the fixed principle section 3.11 Renewable Gas Connection capital expenditure. |

[29] AER, *AER - Draft decision - JGN access arrangement 2025–30 - Attachment 5 - Capital expenditure - November 2024*, November 2024, pp. 10-13

# A Assessment of key capex categories

In this appendix, we provide our detailed assessment of JGN's capex categories, except for JGN's proposed renewable gas connections. We discuss renewable connections in Appendix B.

## A.1 Scope factor allowance[30]

### A.1.1 JGN's proposal

JGN has proposed increasing its capex to above its forecast cost to account for the risk that actual projects costs will exceed the allocated forecast. This applies to multiple projects across all categories apart from telemetry, ICT, and capitalised overheads. JGN's total proposed scope factor allowance amounts to $38.7 million.[31] This is $1.6 million less than the $40.3 million proposed in its initial proposal.

In our draft decision, we did not accept JGN's scope factor allowance. We considered that while some individual projects may incur costs above forecast, other projects will cost less than forecast. On this basis, variations on individual projects will tend to balance out over the portfolio. We noted we may allow a contingency for a given program where JGN identifies a specific risk factor, with a high probability that would increase the cost of a project, but which is nevertheless difficult to forecast. In its initial proposal, JGN had not identified such factors for specific projects. We invited JGN to provide further justification for its scope factor allowance.

JGN has not accepted our draft decision on its scope factor allowance. JGN has provided further information it considers demonstrates its costs are only accurate when a scope factor allowance is included. JGN has provided information on historical projects that have used a scope factor allowance. JGN state that without a scope factor allowance, the actual cost of these projects would have outrun their forecasts by about 19%. JGN submits that without the scope factor allowance, it could not accurately forecast its expenditure for certain projects.[32]

Table 5.6 shows the scope factor allowance in each category of capex.

**Table 5.6 Scope factor allowance ($2024−25, millions)**

| Category | Scope factor allowance for projects we otherwise accept* | Total proposed scope factor allowance |
|---|---|---|
| **Other capex** | 15.0 | 15.0 |
| **Connections** | 0.2 | 12.8 |

30 We referred to this as a "risk allocation" in our draft decision. JGN has referred to it as a scope factor allowance in its revised proposal, and we have used this name in our final decision.

31 This is scope factor allowance for JGN's total proposed capex program, even for projects we have not included in our alternative estimate. The scope factor allowance for projects we have included, partially or fully, in our alternative estimate is $26.1 million.

32 JGN, *JGN - RP - Att 4.1 - Capital expenditure – 20250115*, 15 January 2025, pp. 4-5.

| Category | Scope factor allowance for projects we otherwise accept* | Total proposed scope factor allowance |
|---|---|---|
| **Mains replacement** | 9.3 | 9.3 |
| **Mains augmentation** | 1.6 | 1.6 |
| **Telemetry** | 0.0 | 0.0 |
| **Meter replacement** | 0.0 | 0.0 |
| **ICT** | 0.0 | 0.0 |
| **Total** | **26.1** | **38.7** |

Source: JGN, *Response to IR#032*, March 2025. AER analysis.

* The scope factor allowance applies to a number of capex categories. Our decision to reduce certain categories also captures a portion of the scope factor allowance. In this column, we note the remaining scope factor allowance for categories we have otherwise accepted.

### A.1.2 Final Decision

We have not included JGN's proposed scope factor allowance in our alternative estimate of conforming capex. This has reduced capex across several of JGN's capex categories. Table 5.6 shows the adjustment made for each capex category. When we exclude the scope factor allowance for projects we have not included in our alternative estimate, this results in an alternative estimate of capex that is $26.1 million lower than JGN's revised proposal.

### A.1.3 Submissions

We received 1 submission on JGN's scope factor allowance. In the context of discussing JGN's renewable connections projects, JEC do not support JGN's proposed scope factor allowance to capex projects like the renewable connections. They consider risk premiums should be recovered from the connecting entity, not consumers.[33]

### A.1.4 Our assessment

While we acknowledge that at a project level, the inclusion of a scope factor allowance may contribute to an individual forecast that reflects actual cost, we are not convinced that this issue is systemic at a total capex portfolio level. That is, even if JGN did not use a scope factor allowance, and hence overspent its forecast on the projects the allowance would have applied to, JGN could still compensate for this overspend with underspends for other projects. Further, the forecasting approach for projects of similar types should improve over time, and JGN's forecasts should be better in this access arrangement period than the last.

We also consider that applying an uplift to forecasts of this kind may undermine intent of the capital efficiency sharing scheme (CESS). The purpose of the capex incentive framework, including the CESS, is to incentivise service providers to find efficiencies, and that these benefits are shared with customers. As part of this process, the cost efficiencies achieved by

[33] JEC, *JEC - Submission on JGN's 2025–30 revised proposal and draft decision - February 2025*, February 2025.

a service provider should be embedded into future forecasts so customers receive a long-term benefit from the cost saving. We note that JGN applied a similar scope factor allowance in the current access arrangement period, and has outperformed its approved capex forecast by around $178 million or 17% (and hence achieved a CESS benefit). The 2020-25 access arrangement period was the first time the CESS applied to JGN. We consider providing JGN with a forecast uplift to account for potential forecasting error is not justified and would lead to an upwardly biased forecast at the total capex level. Given JGN has demonstrated it can achieve efficiencies beyond its total capex forecast, allowing a scope factor allowance would also risk inflating the potential CESS benefits for JGN. We consider this outcome would not be consistent with the operation of the CESS and the NGO.

Consequently, we do not consider JGN's proposed scope factor allowance is likely to be prudent and efficient under NGR, r. 79(1)(a). As the allowance is spread across several capex categories, removal of the scope factor allowance will result in a reduction across all capex categories except telemetry, ICT, and overheads. This results in our alternative estimate of capex being $26.1 million lower than JGN's forecast.[34]

# A.2 Meter replacement

Gas meters are primarily used to measure gas consumption at a particular location, such as at a residential home or business. Meter replacement is an ongoing capex activity. Over time, meters lose their ability to accurately measure consumption and may also develop other faults. Meters may be replaced as part of a planned program, or when meters are found to be defective. JGN has regulatory obligations to manage the integrity of meters and ensure they operate within the prescribed tolerance band for metering accuracy.[35]

## A.2.1 JGN's proposal

JGN proposes to spend $171.1 million on meter replacement in the 2025-30 access arrangement period. This is $12.4 million (or 7.8%) higher than its initial proposal of $158.6 million, and $60.2 million (or 54.3%) higher than our draft decision of $110.8 million.

JGN accepted our draft decision regarding the end-of-life replacement of hard to access meters, and it has not included this program in its revised proposal. However, JGN did not agree with our position on its proactive end-of-life replacement programs and its replacement of defective residential gas meters, and it has included these in its revised proposal.

JGN submitted that the AER's use of average historical replacement volumes to forecast meter replacements was not reasonable. The advanced age of these meters makes them qualitatively different, and more prone to failure than the younger meters JGN replaced in previous periods. JGN notes that other businesses replace meters at around 18-25 years, rather than JGN's proposed 35 years. Further, JGN notes that since its initial proposal, it has

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34 This does not include the scope factor allowance for projects we have totally removed from our alternate estimate.

35 JGN undertakes meter replacement based upon the following regulation and standards: National Measurement Act 1960 (sections 18GD and 18GE), NSW Gas Supply (Consumer Safety) Regulation 2012, NSW Department of Fair Trading Guidelines, AS/NZS 4944:2006 Gas meters – In-service compliance testing, AS 1199:2003 Sampling procedures for inspection by attributes, AS 3565.4:2007 Meters for cold and heated drinking water and non-drinking water supplies.

received meter accuracy test results for 2024. It notes that two 30-year old meter groups failed the accuracy test.[36]

JGN maintained its forecasting approach for aged meters, which assumes a sharp increase in failures after 35 years of operation. Further, JGN has added 20,648 meters to be replaced because 2 classes of meters failed 30-year testing during 2024. JGN has also increased its unit rates to reflect historical spending data from 2023−24.

### A.2.2 Final Decision

Based on our review we consider most, but not all, of JGN's proposed meter replacement capex is prudent and efficient. We have included $121.4 million in our alternative estimate of capex. This is close to JGN's actual and estimated capex for meter replacements in the 2020−25 access arrangement period.

Our proposed reduction from JGN's proposed capex relates to meter replacement classes where JGN proposed:

- proactive replacements of aging meters based on incomplete or unavailable data, and
- classes of meters that are aging where JGN has assumed an increasing failure rate over time, without providing compelling evidence of an increase in failures.

### A.2.3 Submissions

We received 2 submissions on meter replacement.

CCP31 acknowledges JGN has provided further information on its metering proposal which it considers justifies uplifting metering allowance beyond historical averages. Nevertheless, CCP31 states it leaves assessing prudency to the AER's technical experts.[37]

Regarding JGN's end-of-life replacement programs, JEC encourages JGN to publish data on the condition, failure modes, and risks relating to its metering stock. This would help give stakeholders confidence that JGN's proposed end-of-life replacements are justified.[38]

### A.2.4 Our assessment

Our assessment of individual meter programs is outlined below. In addition to the programs below, we have also adjusted the amount in our alternative estimate to account for our decision on the scope factor allowance.

#### A.2.4.1 Proactive and end of life replacement programs

We do not accept JGN's proposed $80.4 million program for the proactive replacement of aging meters for both residential and commercial and industrial customers. We are not satisfied that the volume of proactive meter replacement proposed by JGN is prudent under NGR, r. 79(1)(a). We are also not satisfied that JGN's proposed replacement of meters is

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36 AER, *JGN - RP - Att 4.1 - Capital expenditure – 20250115, 15 January 2025*, p. 11-12.

37 CCP31, CCP31 - Advice to the AER - JGN 2025-30 revised access arrangement and draft decision - February 2025, February 2025.

38 JEC, *JEC - Submission on JGN's 2025–30 revised proposal and draft decision - February 2025*, February 2025.

efficient under NGR, r. 79(1)(a), and we consider that there is insufficient evidence that the expenditure is required to maintain and improve the safety of services (NGR, r. 79(2)(c)(i)) or comply with regulatory obligations or requirements (NGR, r. 79(2)(c)(iii)). We have included an amount of $31.7 million. We consider this amount, which is close to JGN's historical meter replacement program, which includes proactive replacement, is consistent with the new capex criteria.

JGN has assumed that when certain families of meters pass 35 years of age, the failure rate will increase exponentially. This assumption has driven JGN's strategy to proactively replace meters over 35 years old. We do not consider JGN has provided evidence supporting such an increase in failure rates. We acknowledge that since its initial plan, JGN has conducted meter accuracy testing which show two lots of 30-year-old meters failing. However, JGN has not been able to provide sufficient data to support the assumption that meters over 35 years of service face an exponential increase in failure rates, particularly because sample sizes of meters older than 35 years is small. We would expect meter failures to be normally distributed. A sharp increase in failures after 35 years of service should be preceded by a moderate increase in failures at the 30 to 35 year mark. We do not consider the data demonstrates this.

JGN has not demonstrated that its approach to forecasting is reasonable, or better than a forecast based on historical replacement volumes. In our alternative estimate, we have substituted JGN's forecast with one that uses JGN's updated unit rates but uses average historical replacement volumes (which includes both proactive and reactive replacements). We consider JGN's historical replacement volumes are sufficient for JGN to meet its obligations and maintain the safety and reliability of its network.

#### A.2.4.2 Replacement of defective residential gas meters

JGN has also proposed a $13 million program for the replacement of defective residential gas meters. We are not satisfied replacement of these meters is prudent under NGR, r. 79(1)(a), and there is insufficient evidence that the expenditure is required to maintain and improve the safety of services (NGR, r. 79(2)(c)(i)) or comply with regulatory obligations or requirements (NGR, r. 79(2)(c)(iii)). Our alternative estimate is $12 million. Data provided by JGN did not demonstrate an increase in failure rates for meters 30 years old or older of the magnitude proposed. Given this, we consider the increasing volume of replacement of meters 30 years and older is not justified (JGN proposed an 18% escalation). In our alternative estimate, we accept that a more gradual escalation is justified. Based on our analysis of the data provided by JGN, we consider a 9% volume escalation is in line with JGN's current replacement practices. Our alternative estimate, which is approximately $1 million lower than JGN's forecast, is based on this escalation.

# A.3 Other Capex

## A.3.1 Other Capex

Other capex refers to assets that do not fall under the main capex categories defined by the AER. They include replacement of obsolete assets, water ingress assets, integrity, plant, vehicles, pipeline inspection (pigging) and general works.

## A.3.2 Submissions

We received 4 submissions regarding Picarro.

Energy Networks Australia (ENA) considers that a technology designed to facilitate emissions detection would assist emissions reduction. ENA state that this program should be actively facilitated by the amendments to the NGL and Gas Rules which recognise emissions reduction as a goal of expenditure.[39]

JEC notes that while consumers were broadly in favour of the Picarro program, it encourages JGN to provide more detail on how this contributes to improved customer outcomes in terms of emissions measurement and reduction.[40] The City of Sydney recognises that given the significance of methane as a greenhouse gas, the proposal to detect methane loss should be revisited and not rejected outright. The City of Sydney acknowledge the initial proposal was lacking detail and there appears to be a significant mismatch between the cost of the technology and the funding requested.[41] CCP31 supports the Picarro program as it appears in the revised proposal, where it has been reduced from 5 to 3 extra vehicles.[42]

## A.3.3 JGN's proposal

In our draft decision, we did not accept JGN's Tempe pressure reduction station (PRS) obsolescence project or the capex component of its Picarro emissions detection system.[43] JGN has included both projects in its revised proposal with further information and adjustments.

### A.3.3.1 Obsolescence projects

JGN has proposed $5.6 million of capex for its Tempe PRS facility obsolescence project. We consider this capex prudent and efficient, apart from the scope factor allowance applied to it of $0.8 million. We have included the remaining $4.8 million in our alternate estimate.

We did not include capex for this project in our draft decision. We noted that, when choosing from the options in its cost benefit analysis model, JGN did not select the option with the

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39 ENA, *ENA - Submission and attachment on JGN's 2025–30 revised proposal and draft decision - February 2025*, February 2025.

40 JEC, *JEC - Submission on JGN's 2025–30 revised proposal and draft decision - February 2025*, February 2025

41 City of Sydney, *City of Sydney - Submission on JGN's 2025–30 revised proposal and draft decision - February 2025*, February 2025.

42 CCP31, *CCP31 - Advice to the AER - JGN 2025-30 revised access arrangement and draft decision - February 2025*, February 2025.

43 JGN, *Emissions measurement – Picarro – BC – 20240628* – PUBLIC – 22 November 2023. p 15.

highest net present value (NPV). The option with the highest NPV was not replacing certain mechanical equipment.

In response to an information request during our draft decision process, JGN stated that this project was justified by factors not quantified in its cost benefit analysis model, such as safety and reliability.[44] We encouraged JGN to quantify and include the economic benefit of these factors in its cost benefit analysis model for its revised proposal.[45]

JGN has updated its cost benefit analysis model to value emissions benefits[46] and apply a higher but still conservative value of energy reliability. These updates cause JGN's proposed project to have the highest NPV.[47] We accept that the project is likely to be prudent and efficient and have included it in our alternative estimate.

### A.3.3.2 Picarro emissions detection system

Picarro is an advanced vehicle mounted leak detection system which is comprised of both opex and capex projects. In its initial proposal, JGN proposed to increase its Picarro-carrying fleet from 3 vehicles to 8, resulting in capex of $0.6 million for 5 vehicles. In our draft decision, we did not accept either the opex or capex portions of JGN's Picarro program.

In its revised proposal, JGN proposes to increase its fleet by 3 vehicles, resulting in capex of $0.4 million, a $0.2 million reduction.[48]

We note that most of the expenditure for the Pircarro program is included as opex, with the capex element related to the addition of new vehicles. We have accepted an opex step change for Picarro.[49] Given our position on opex, and the reductions from JGN's initial proposal, we consider the capex is also efficient. We have included the $0.4 million of capex related to Picarro in our alternative estimate.

## A.4 Customer connections

A gas distribution business has a regulatory obligation to make a connection offer to residential and commercial/industrial customers making applications to connect to its distribution network.[50] Connections capex is usually forecast by categorising connections into Tariff V (residential customers, and small commercial and industrial (I&C) customers) and Tariff D (large I&C customers). Residential customers can be disaggregated further into existing homes, new estates, and medium/high density (or multi-user) dwellings.

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44 JGN, *Response to IR010*, 27 September 2024,

45 AER, *AER - Draft decision - JGN access arrangement 2025–30 - Attachment 5 - Capital expenditure - November 2024*, November 2024, p. 20.

46 In its calculations, JGN applied the interim value of emissions reduction, in line with the Ministerial Council on Energy statement about the interim value of greenhouse gas emissions reduction (dated 19 July 2024) set out in our guidance. See: AER, *Valuing emissions reduction – AER guidance and explanatory statement*, May 2024, p. 4.

47 JGN, *JGN - RP - Att 4.1 - Capital expenditure – 20250115*, 15 January 2025, p. iii; JGN, *JGN - RP - Att 4.17M - Revised Tempe PRS CBAM - 20250115 – Public*, 15 January 2025.

48 JGN, *JGN - RP - Att 5.3 - Picarro - 20250115 – Public*, 15 January 2025; JGN, *JGN - RP - Att 4.1 - Capital expenditure – 20250115*, 15 January 2025, p. iv.

49 The reasons for the opex decision are set out in Attachment 6 of this final decision.

50 NGR, Part 12A.

Connections capex covers mains along streets, services to homes and businesses, and meters to measure gas consumption for new:

- low density dwellings (new homes)
- medium density and high-rise housing
- electricity to gas conversions
- commercial sites
- industrial and large commercial sites.

### A.4.1 JGN's proposal

In its revised proposal, JGN proposes $276.5 million of customer connections capex net of capital contributions, which is $21.0 million (8%) higher than its initial proposal and our draft decision of $255.5 million. JGN states that new housing data, updated average historical unit rates, updated escalators, and the correction of an inflation error in its modelling have driven the increase in its customer connections forecast.[51]

### A.4.2 Final Decision

In our alternative forecast of demand, we have included a higher number of new customer connections than JGN has in its revised proposal.[52] To account for this increase, we have substituted a higher forecast for connections capex. Our alternative estimate is $311.5 million net of capital contributions, or $35.0 million (13%) higher than JGN's revised proposal. Our alternative estimate also substitutes in a higher amount of capital contributions towards connections, $19.4 million, or $2.3 million (13%) higher than JGN's proposal.[53]

### A.4.3 Our assessment

Based on our alternative demand forecast, we consider JGN has under-forecast the volume of new residential connections.[54] Our alternative estimate of connections capex accounts for this volume uplift.

We note that, while this increases our final decision on capex, it also increases demand. Holding other factors equal, the increase in demand offsets the additional cost of the capex, such that customer prices are slightly lower than they would have been.

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51 JGN, *JGN - RP - Att 4.1 - Capital expenditure – 20250115*, 15 January 2025, p. iii-iv.

52 See Attachment 12 of this Final Decision for more details.

53 In formulating an alternate estimate, we had regard to: JGN, *response to IR034*, 28 Mach 2025.

54 See Attachment 12 of this Final Decision for a full explanation.

# B Renewable gas connections

## B.1 JGN's proposal

JGN proposes to connect 8 biomethane production facilities to its NSW network. The capex required to connect these facilities is $78.9 million. If accepted by the AER, this cost would go into the capital base of JGN and be paid for by its customers over time. If all 8 of these facilities became operational, JGN estimates they would produce 6.7 PJs of locally produced biomethane for transportation on JGN's network, or around 8.3% of the energy transported on the JGN network.[55] Table 5.7 outlines the proposed expenditure for JGN's 8 renewable gas connections projects in the 2025-30 access arrangement.

**Table 5.7 Renewable gas connection project forecast expenditure ($ millions, 2024-25)**

| Renewable gas connection project | Proposed expenditure 2025-30 |
|---|---|
| **Lilli Pilli** | 30.3 |
| **Blue Gum** | 26.2 |
| **Coolabah** | 5.0 |
| **Iron Bark** | 4.5 |
| **Red Gum** | 3.6 |
| **Huon Pine** | 3.2 |
| **Wollemi** | 3.2 |
| **Kauri** | 2.9 |
| **Total** | **78.9** |

Source: JGN, *JGN - RP - Att 4.3M - Capital expenditure forecast model - 20250115*, 15 January 2025. AER analysis.
Note: Project names are code names.

None of these facilities currently produce biomethane, but they do possess the feedstock to do so. The proponents of these facilities would be required to invest significant capital and operating expenditure[56] to convert the feedstock to biomethane, prior to injection into JGN's network. JGN provided business cases in support of these projects.

In our draft decision, we did not accept these projects and included $0 as a placeholder, pending more information and analysis from JGN. We did not accept this expenditure in the draft decision because:

55 *JGN, JGN - RP - Att 4.2 - Renewable gas expenditure - 20250115 – Public,* 15 January 2025, p. 1.

56 Biomethane production involves significant investment in capex and significant ongoing opex and at this point, no counterparty has entered into a firm decision to invest in these facilities. Due to confidentiality claims by JGN, we are not able to disclose the capex or opex associated with establishing and running a biomethane production facility.

- We considered the economic assessment in the business case was incomplete, as it did not include analysis of a likely counterfactual, specifically the use of the biogas feedstock for electricity generation.
- There was significant uncertainty surrounding whether the projects would actually commence in the access arrangement period. In particular, the projects required significant capex and opex from the prospective biomethane producers, and there was no firm commitment from these parties to invest. We suggested JGN consider the use of a speculative capex account to manage this risk.

In response to our draft decision, JGN:

- Revised its business cases to include consideration of a likely counterfactual, and
- Proposed a fixed principle as a means of addressing the uncertainty expressed in the draft decision of whether the projects would proceed in the 2025–30 access arrangement period as specified. JGN's proposed fixed principle provides that renewable connections capex would be used to determine the total revenue for the 2025−30 regulatory period and that, at the time of the 2030–35 access arrangement decision, any unspent renewable connections capex (or any renewable connections capex spent that the AER determines is non-conforming) would be returned through a revenue adjustment.

## B.2 Final Decision

We do not accept that JGN's renewable gas connections capex is conforming capex. We are not satisfied that the renewable gas connections capex is such that would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services in a manner consistent with the achievement of the national gas objective (rule 79(1)(a) of the NGR).

We consider there remains significant uncertainty surrounding whether the biomethane projects will take place in the access arrangement period. The risk of this uncertainty is carried by JGN's customers, who fund conforming capex through their gas bills. For the reasons set out below, JGN's proposed fixed principle cannot address this issue. Consequently, we do not consider this is capex of a type that a prudent service provider acting efficiently would undertake.

This decision is not intended to make any judgment about the viability of establishing a biomethane production sector in Australia. We accept that there are likely to be benefits arising from these projects if the costs and production volumes put forward by JGN are achieved. Rather, our decision relates to the role of gas customers in funding pipeline assets, and whether it is appropriate for them to pay for new pipelines that may not be utilised because there is uncertainty over whether counterinvestment in production facilities will take place. Due to the tariffing arrangements for gas networks, most of the pipeline cost would be borne by residential and small business customers. Industrial customers, who are likely to benefit most from the projects going ahead because their activities have been identified as "hard to abate", bear relatively little of the cost of funding these assets.

We note that our final decision does not prevent JGN from undertaking the capex in the access arrangement period, and seeking to either have the capex included in the opening

capital base for 2030 as part of the conforming capex element of the opening capital base calculation under rule 77(2)(b) of the NGR, or by using the speculative capex account (from which an amount can be added to the opening capital base under rule 77(2)(c) of the NGR if the requirements in rule 84 of the NGR are met). In section B.3.3, below, we have provided guidance on the matters we may consider in assessing such capex in a future access arrangement review. We also consider that any capex JGN does spend on renewable connections during the 2025−30 access arrangement period should be excluded from the capital expenditure sharing scheme (CESS). As our final decision on capex does not include capex for renewable connections, there is already sufficient incentive for JGN to achieve an efficient cost for any assets it chooses to invest in. We consider that applying a CESS in this circumstance is unnecessary to incentivise efficient investments.[57]

### B.2.1 Submissions

Several stakeholders submitted in support of JGN's renewable connections projects. They urged us to reconsider our approach to renewable gas from our draft decision, where we did not consider JGN had sufficiently justified the prudency and efficiency of its 8 projects. These stakeholders submitted that connecting renewable gas plants to JGN's network would contribute to emissions reduction and could serve hard-to-electrify customers.[58]

The Justice and Equity Centre (JEC), the City of Sydney, Energy Consumers Australia (ECA) and the Consumer Challenge Panel, sub-panel 31 (CCP31) expressed opposition to the inclusion of the proposed renewable connections projects. They considered that JGN had not demonstrated that residential and small business customers would be significant beneficiaries of these connections, and so they should not be expected to bear the costs of the connections.[59]

## B.3 Our assessment

### B.3.1 JGN's business cases

We have reviewed JGN's updated business cases and are of the view that the projects would be likely to provide a net benefit, so long as they proceed at the forecast cost and

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57 See Attachment 13 of this final decision for more information of the capital efficiency sharing scheme.

58 Australian Alliance for Energy Productivity, A2EP - Submission JGN's 2025–30 revised proposal and draft decision - February 2025, 14 February 2025; Australian Pipelines and Gas Association, APGA - Submission on JGN's 2025–30 revised proposal and draft decision - February 2025, February 2025; Bioenergy, Bioenergy - Submission on JGN's 2025–30 revised proposal and draft decision - February 2025, February 2025; Energy Networks Australia, ENA - Submission and attachment on JGN's 2025–30 revised proposal and draft decision - February 2025, February 2025; Opal, Opal - Submission on JGN's 2025–30 revised proposal and draft decision - February 2025, February 2025; GreenPower, GreenPower - Submission on JGN's 2025–30 revised proposal and draft decision - February 2025, February 2025; Gwydir, Gwydir - Submission on JGN's 2025–30 revised proposal and draft decision - February 2025, February 2025; Optimal Renewable Gas, Optimal Renewable Gas - Submission and attachment on JGN's 2025–30 revised proposal and draft decision - January 2025, January 2025.

59 JEC, JEC - Submission on JGN's 2025–30 revised proposal and draft decision - February 2025, February 2025; City of Sydney, City of Sydney - Submission on JGN's 2025–30 revised proposal and draft decision - February 2025, February 2025; ECA, ECA - Submission on JGN's 2025–30 revised proposal and draft decision - February 2025, February 2025; CCP31, CCP31 - Advice to the AER - JGN 2025-30 revised access arrangenmment and draft decision - February 2025, February 2025.

deliver the volume of gas envisaged.[60] Therefore, we consider the capex for the projects is justifiable capex under rule 79(2)(a) of the NGR, and therefore satisfies rule 79(1)(b) of the NGR.

JGN demonstrated that production of biomethane provided a higher net benefit than using the feedstock to generate electricity, or its "do nothing" option, particularly in achieving a higher value of emissions reduction.[61] This addresses the first of our concerns expressed in the draft decision, being the value to JGN's customers of the proposed investment if they proceed and operate as planned.

### B.3.2 Gas user risk and JGN's fixed principle

Our second concern relates to addressing commencement and completion risks associated with the renewable connection projects. The projects are novel in nature and require significant counterinvestment from the prospective biomethane producers. We do not consider a prudent service provider would invest in connections before receiving firm commitments for investment and supply from counterparties.

At this stage, the biomethane producers have not made a firm investment commitment to fund these projects. We understand that the biomethane producers may be unwilling to make an investment in production facilities without an assurance that JGN will fund the pipeline assets needed to access its NSW distribution network. This transfers risk to JGN's customers, who will be asked to fund the pipeline capex without an assurance that the renewable gas projects will proceed as submitted.

In the draft decision, we suggested JGN consider the use of a speculative capex account to address this issue. In its revised proposal, JGN stated that it does not consider a speculative capex account will give it sufficient regulatory certainty around future approval of the capex, as it effectively defers the AER's assessment of this capex until the next price review process.[62] It instead proposed a fixed principle to deal with this issue.[63] JGN submitted that:

> To address AER concerns that customers may end up paying for renewable gas projects that do not proceed, we have proposed a fixed principle within our 2025-30 Access Arrangement as an alternative approach to the speculative capex account. The fixed principle requires us to adjust our 2030-35 building block revenue to return any 2025-30 building block revenue relating to any renewable gas connections projects capex not incurred by us (i.e. the return on capital, return of capital, and tax allowance). If we spend more capex on renewable gas connections projects than provided for in the AER's allowance, then the fixed principle would not apply and the AER's general

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60 JGN has claimed confidentiality over the business cases, which limits the amount we can disclose in this document.

61 In its calculations, JGN applied the interim value of emissions reduction, in line with the Ministerial Council on Energy statement about the interim value of greenhouse gas emissions reduction (dated 19 July 2024) set out in our guidance. See: AER, *Valuing emissions reduction – AER guidance and explanatory statement*, May 2024, p. 4.

62 JGN, *JGN - RP - Att 4.2 - Renewable gas expenditure - 20250115 – Public*, 15 January 2025, p. 3.

63 Rule 99 of the NGR allows for an access arrangement to include a principle that is fixed for 2 or more periods, and can only be revoked by the AER with the consent of the service provider. A fixed principle, once accepted, binds the AER and the service provider to the fixed principle for the specified term. Where a fixed principle is inconsistent with a rule in the NGR, the rule operates to the exclusion of the fixed principle.

> incentive mechanisms would apply as normal to the capex spend as part of our total capex spend.[64]

As a standalone proposal (and before considering whether a fixed principle is relevant), we consider JGN's capex for the renewable connections projects is not conforming, as it is not capex that would be incurred by a prudent service provider acting efficiently, as required by clause 79(1)(a) of the NGR. Connecting biomethane production facilities is relatively novel in Australia, and subject to significant capex and opex investments from biomethane producers. JGN's customers ultimately bear the risk of investing in assets to connect facilities that may not ultimately proceed.

We note JGN has attempted to address our concern through its proposed fixed principle. Firstly, however, and as set out below, we consider the fixed principle treats currently non-conforming forecast capex as currently conforming forecast capex, and would therefore be inconsistent with the NGR.

Secondly, we also consider that including currently non-conforming capex in the calculation of 2025-30 building block revenue would distort the way in which revenue is recovered across multiple access arrangement periods, by requiring customers in the 2025-30 period to pay higher prices, which would then only be 'returned' to customers who are still on the network in the 2030-35 period. In this way, 2025-30 customers would still bear some of the risk of the renewable connections projects not proceeding. We do not consider that this outcome would be appropriate.

In its response to an AER information request, [65] JGN noted that the fixed principle would fully reimburse revenue to customers for capex which remains unspent, or is not considered conforming capital expenditure pursuant to rule 79.[66] We understand the proposition is that if JGN invested in no renewable connections assets, or invested in assets that the AER did not consider, in its assessment of the opening capital base for 2030, was conforming capex, the fixed principle would require JGN to reimburse revenue to customers for the unspent or non-conforming capex.

Notwithstanding the proposal in the fixed principle that the AER is able to exclude unspent or non-conforming capex from the opening capital base for 2030, we still need to be of the view that forecast capex is prudent before deciding it is conforming and including it in the total revenue for the 2025-30 access arrangement period under rule 76 of the NGR. Total revenue under rule 76 is based on forecast conforming capex, and does not contemplate forecast non-conforming capex. As such, JGN's proposed fixed principle is inconsistent with the NGR because it purports to base total revenue on matters not specified in rule 76, being forecast non-conforming capex.

Rule 99(4)(b) of the NGR states that:

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64 JGN, *JGN - RP - Att 4.2 - Renewable gas expenditure - 20250115 – Public* , 15 January 2025, p. 3.

65 AER*, Information request 029: Renewable gas projects management of risk by fixed principles or speculative capital expenditure account*, 30 January 2025.

66 JGN*, Response to IR029 Revise Proposal Q & A Response – Renewable gas & fixed principle*, 17 February 2025, p.5.

> if a rule is inconsistent with a fixed principle, the rule operates to the exclusion of the fixed principle.

Rule 76 would therefore operate to the exclusion of the fixed principle. This being the case, we have not approved the fixed principle, and have proposed revisions to the access arrangement to remove the fixed principle.

In summary, we consider the uncertainty expressed in the draft decision remains, and that without a firm commitment from the counterparties regarding investment and supply, JGN's customers bear the risk of investing in assets relating to projects that may not ultimately proceed. We have therefore not included accepted JGN's proposed capex for renewable gas connections capex, and have not included it in our alternative estimate.

### B.3.3 Guidance on how the AER may assess such capex in a future access arrangement review

As noted in Section B.2 above, this access arrangement does not prevent JGN from undertaking the capex in the access arrangement period. It is open to JGN to make the investments in the pipeline assets, and then seek to either have the capex included in the opening capital base for 2030 as part of the opening capital base calculation, or by using the speculative capex account (from which an amount can be added to the opening capital base if certain requirements are met). We have set out guidance below on the matters we may consider in assessing such capex in a future access arrangement review. We note that this guidance does not bind the AER to a particular decision in a future access arrangement review.

#### Speculative capex account

A speculative capex account is a notional fund where non-conforming capex can be recorded, outside of the capital base, and added to the capital base at a later date if the requirements in rule 84 of the NGR are met. Rule 84 details how a speculative capex account functions:

> (1) An access arrangement may provide that the amount of non-conforming capital expenditure, to the extent that it is not to be recovered through a surcharge on users or a capital contribution, is to be added to a notional fund (the **speculative capital expenditure account**).
>
> (2) The balance of the speculative capital expenditure account must be adjusted annually by applying to the balance a rate that is the same as the *allowed rate of return* for the regulatory year in which the adjustment is made.
>
> (3) If at any time the type or volume of services changes so that capital expenditure that did not, when made, comply with the new capital expenditure criteria becomes compliant, the relevant portion of the speculative capital expenditure account (including the return referable to that portion of the account) is to be withdrawn from the account and rolled into the capital base as at the commencement of the next *access arrangement period*.

It is open for JGN to add its non-conforming renewable connections capex spent in 2025-30 to a speculative capex account. JGN has a boilerplate speculative capex account in its

access arrangement that it can use for this purpose.[67] Under this approach, JGN can record capex spent in a notional account, and adjust this capex annually by the approved rate of return. If the capex becomes conforming due to a change in the volume or type of services, JGN can seek to have the capex (adjusted in accordance with rule 84(2) of the NGR) included in the opening capital base for the 2030-35, or a future, access arrangement period.[68]

For the AER to accept the movement of capex from a speculative account to the capital base, the capex must have become conforming due to a change in volume or type of services. We consider this means that JGN must have completed the pipeline assets and commenced biomethane supply before the capex can satisfy clause 84(3) of the NGR (i.e. a change in the volume or type of services would likely not occur until JGN takes these steps). We consider that when this is satisfied, and if the costs and benefits (including the volume of biomethane supply) are consistent with the material JGN provided in support of its revised proposal, the capex is likely to have become compliant with the new capex criteria due to a change in the volume of services. In these circumstances, the relevant capex will be withdrawn from the speculative capex account and rolled into the capital base at the commencement of the next access arrangement period. However, it is open to the AER to reach a different conclusion at that future point in time based on the available evidence before it.

#### Inclusion in the 2030 opening capital base under rule 77(2)(b)

JGN could seek to have any renewable connections capex that it spends over the 2025-30 period assessed as part of calculation of the opening capital base for the 2030-35 access arrangement period. Rule 77(2)(b) of the NGR provides that the opening capital base at the start of an access arrangement period includes conforming capital expenditure made, or to be made, during the earlier access arrangement period. To facilitate the calculation of the opening capital base, the AER reviews capex made or to be made during the earlier access arrangement period and decides whether it is conforming under rule 79 of the NGR.

If the AER assesses the actual capex spent as conforming capex under rule 79, when setting the opening capital base for 2030, rule 77(2)(b) requires the AER to include this capex in the opening capital base even if we did not consider it was conforming forecast capex in our final decision for the 2025-30 access arrangement period.

If JGN undertook the renewables capex projects during the period, was able to establish that the benefits and costs (including the volume of biomethane supplied) were consistent with the material JGN provided in support of its revised proposal, and could establish a firm investment and supply commitment from the biomethane producers, the AER may form the view that the capex spent is conforming capex. However, it is open to the AER to reach a different conclusion at that future point in time based on the available evidence before it.

By way of guidance, we consider a firm investment and supply commitment is likely to comprise a combination of the following:

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67 JGN, JGN – RP - 2025-2030 - Access Arrangement – 20250115, January 2025, pp. 18-19, cl. 6.1.

68 NGR, rule 84(3). The opening capital base for an access arrangement period includes any amount to be added to the capital base under rule 84 (rule 77(2)(c) of the NGR).

- A final investment decision from a prospective biomethane producer to invest in production assets
- Firm offtake agreement(s) from a retailer with specific volume and price clauses
- Firm offtake agreement(s) from a major industrial customer(s) with specific volume and price clauses
- A commitment from the interconnecting biomethane producer to deliver a specific volume.

### B.3.4 Capital Expenditure Sharing Scheme implications

As noted earlier, we consider any capex JGN spends on renewable connections during the 2025-30 period should be excluded from the CESS.[69] JGN is already exposed to the risk that the AER may consider any renewable connections capex it spends in the period is not conforming, and not include the capex in the 2030 opening capital base. We consider the CESS does not provide additional incentive for JGN to act efficiently for these asset types in the circumstances. Applying the CESS would also penalise JGN for choosing to invest in renewable connections, even if it ultimately gained sufficiently firm commitments from counterparties. Under the circumstances, we do not consider it appropriate to create a financial disincentive for JGN to invest in renewable connections assets should it form the view that it has sufficiently firm commitments from counterparties in place.

### B.3.5 Expenditure in the current period

JGN has spent approximately $2.5 million in the current access arrangement period (2020-25) to scope and develop the renewable connections projects. We consider it reasonable for JGN to incur some expenditure to explore the viability of these projects in the current period. Consequently, we consider the $2.5 million of renewable connections capex JGN has already spent is prudent and should be included in the opening capital base for the 2025-30 access arrangement period. This is consistent with the AER's assessment of capex spent in the 2020-25 period in the draft decision.

69 See Attachment 13 of this final decision for more information on the capital expenditure sharing scheme.

# C Conforming capex for 2019-20 and the 2020-25 access arrangement period

JGN's actual and estimated capex net of capital contributions for the current access arrangement period is $871.2 million, compared with the AER's 2020-25 final decision estimate of $1,049.0 million.[70]

We note that in the 2020-25 period, JGN estimates it spent $2.5 million on renewable connections, entirely in 2024-25. While we have not included JGN's proposed renewable connections projects in our alternate estimate, we still consider this expenditure on renewable connections to be conforming capex. While we are of the view that JGN's forecast 2025-30 capex for renewable connections projects is not forecast conforming capex, we consider it is prudent for JGN to incur some capex to explore the viability of these projects in the current period.

Our decision on conforming capex also relates to capex for 2019-20. Owing to the timing of our 2020-25 access arrangement decision, we only had estimates of the expenditure for 2019-20. JGN has underspent its capex forecast for that year of $206.8 million by $21.9 million, with actual expenditure of $184.9 million.[71] We are satisfied that JGN's spending in 2019-20 is conforming and should be rolled into its capital base as it is in line with the forecast approved by the AER.

Table 5.8 shows JGN's actual net capex against the forecast allowance for 2019-20 and the 2020-25 period. This shows that JGN has spent less than its capex forecast. We are satisfied that JGN's actual capex is conforming and should be rolled into its capital base as it is in line with the forecast approved by the AER.

Expenditure for 2024-25 is currently estimated. Actual expenditure for 2024-25 will not be available during this reset process, so we will revisit whether actual expenditure for 2024-25 is conforming capex in the 2030-35 reset process.

**Table 5.8 JGN's actual and estimated capex net of capital contribution versus capex allowance – 2019-20 and 2020-25 access arrangement period ($million, 2024-25)**

| Category | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
|---|---|---|---|---|---|---|---|
| **Total net capex allowance** | 206.80 | 231.27 | 225.93 | 201.86 | 193.15 | 196.75 | **1,255.8** |
| **Total net actual and estimated capex** | 184.87 | 186.17 | 164.07 | 166.70 | 156.51 | 197.71 | **1056.0** |

70 AER, *AER - JGN access arrangement 2020–25 - PTRM - 2024–25 RoD update - March 2024*, March 2024; AER, *JGN - Att 7.7M - Roll Forward Model - June 2024*, June 2024; AER analysis.

71 AER, *AER - Final decision JGN - PTRM - February 2019*, February 2019; AER, *AER - JGN access arrangement 2020–25 - PTRM - 2024–25 RoD update - March 2024*, March 2024.

| Category | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
|---|---|---|---|---|---|---|---|
| **Capex overspend / (underspend)** | (21.9) | (45.1) | (61.9) | (35.2) | (36.6) | 1.0 | **(199.7)** |

Source: AER analysis. AER, *AER - Final decision JGN - PTRM - February 2019,* February 2019; AER, *AER - JGN access arrangement 2020–25 - PTRM - 2024–25 RoD update - March 2024*, March 2024; JGN, *JGN - RP - Att 4.3M - Capital expenditure forecast model - 20250115 - Public*, January 2025.

# Glossary

| Term | Definition |
|---|---|
| capcon | capital contribution |
| capex | capital expenditure |
| CESS | capital expenditure sharing scheme |
| CCP31 | Consumer Challenge Panel, sub-panel 31 |
| ECA | Energy Consumers Australia |
| ENA | Energy Networks Australia |
| ICT | Information and communication technologies |
| I&C | industrial and commercial |
| JEC | Justice and Equity Centre |
| JGN | Jemena Gas Networks |
| NGL | National Gas Law |
| NGO | National Gas Objective |
| NGR | National Gas Rules |
| NPV | net present value |
| opex | operating expenditure |
| PRS | pressure reduction station |
| RIN | regulatory information notice |