Jemena Gas Networks (NSW) Ltd

Revised 2025-30 Access Arrangement Proposal

Attachment 5.1

Operating expenditure

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Overview

Our Revised 2025 Plan opex forecast for our Transportation Reference Service (**RS**), compared with our initial 2025 Plan and the AER's draft decision, is shown in Table OV–1.

Table OV–1: Comparison of JGN's initial and revised 2025-30 Transportation RS opex to AER's draft decision ($2025M)

	Initial 2025 Plan	AER's draft decision	Revised 2025 Plan
Total opex for our Transportation RS[1]	**1,155.2**	**1,161.7**	**1,148.5**

The AER's draft decision included $66.4M for forecast costs of small customer connection abolishments. The AER's alternative estimate of the total opex forecast, excluding small customer connection abolishments opex, is $1,095.4M. This compares with our proposed opex of $1,155.2M, or $59.8M lower (or 5.2%) than our proposed opex forecast in our initial 2025 Plan.

We are pleased that overall the AER considers we have demonstrated a genuine approach to consumer engagement in relation to our opex proposal, noting that we did not engage on our proposed step change for pipeline integrity management.

We largely accept the AER's draft decision other than for:

1. Substitution of alternative customer number forecasts derived by ACIL Allen in calculating our output growth trend, and the basis on which the AER calculated our growth trend;
2. Socialising all small customer connection abolishments and setting our abolishment costs at the same level as Victorian network businesses;
3. Rejection of 5 of our 8 proposed Picarro cars used for gas leakage monitoring; and
4. Categorising our licence fees and government levies as an opex step change rather than as a category-specific forecast.

We have updated our Revised 2025 Plan opex forecast to reflect the above, for our audited 2023-24 opex, and where appropriate updated components to be consistent with any changes made in other parts of our Revised 2025 Plan. Our audited base year opex excluding category-specific forecasts is $190M compared with our estimate of $191M. While the total opex including Transportation RS and Ancillary RS is largely the same, the small increase in Transportation RS opex is due to lower than expected ancillary activities. Our audited Ancillary RS costs for 2023-24 are $17.5M, compared with our estimate of $21.9M due to lower volumes of Ancillary RS activities than expected.

List of opex attachments

Table OV–2: List of opex attachments

Attachment	Name	Author
Forecast opex	JGN - RP - Att 5.1 - Operating expenditure - 20250115 – Public	JGN
Opex model	JGN - RP - Att 5.2M - Operating expenditure forecasting model	JGN
Revised Picarro forecast	JGN - RP - Att 5.3 – Picarro - 20250115	JGN

[1] Including debt raising costs, excluding Ancillary RS costs.

Leak detection methodology	JGN - DCCEEW - RP - Att 5.4 - Implementation of PICARRO Vehicle Mounted Leak Survey Methodology Response - 20241119	DCCEEW
Abolishments	JGN – RP - Att 7.1 - Abolishments - 20250115	JGN

1. Our opex forecast for the transportation reference service

Table 1–1 details our forecast opex over the 2025 Plan period for our Transportation RS. The forecast opex model is provided in *JGN - RP - Att 5.2M - Operating expenditure forecasting model*. We discuss each expense category in the following sections.

Table 1–1: Forecast Transportation RS total opex for 2025-30 period ($2025M)

Category	Description	2025 Plan	AER draft decision	Revised 2025 Plan
Establish efficient base year	Our audited 2023-24 base year opex before removing Ancillary RS is $267.9 million, compared with $268.3 million in our 2025 Plan.	1,341.7	1,228.2[2]	1,245.3
Adjust base year opex	We have made adjustments to the base year opex to: • remove category-specific forecasts in the base year • remove costs relating to Ancillary RS to reflect the separation of Ancillary RS from 1 July 2025 • re-allocate SaaS implementation costs from capex to opex in line with the AER's guidance[3] • include the project costs associated with establishing and implementing new ICT cloud-based service capacity • account for the increment from base year to final year	-458.4	-346.6	-344.9
Estimate trend	We have trended the efficient base forward by applying the rate of change. This includes: • Output growth (customer number and line length) • Price growth (labour) • Ongoing productivity improvements of 0.86% per annum	14.5	4.1	9.2
Develop category-specific forecasts	We have developed specific forecasts for items where base year costs are not representative of the costs we expect to incur. This includes: • UAG $139.3 million (previously $145.8 million) • Licence fees and government levies $24.1 million (previously $21.3 million) • Safeguard Mechanism costs nil (now subject to an annual true-up in our tariff variation mechanism. We previously estimated at $10.4 million) • Socialised abolishment costs of $16.3 million (new) • Support for customers experiencing vulnerability $2.7 million (previously a step change) • Debt raising costs $9.6M (previously $9.7 million)	187.2	220.2	192.0
Forecast step changes	We have proposed the following step changes: • Support for customers experiencing vulnerability nil (now a category-specific forecast) • ICT services $14.6 million (previously $15.0 million) • Climate change reporting nil (previously $3.6 million)	70.2	55.8	46.9

[2] The AER netted off costs relating to Ancillary RS against our base year opex in its draft decision which results in the same outcome as our initial proposal.

[3] In April 2021, the International Financial Reporting Interpretations Committee (IFRIC) released a guidance note requiring SaaS implementation costs treated as opex. When the 2020-25 allowances were determined for JGN in April 2020, these costs were classified as capex. To ensure our reported actuals and allowances are comparable based on consistent accounting treatments, the AER provided guidance for us to continue applying the old accounting treatment (i.e. capitalising SaaS implementation costs) for the current regulatory period 2020-25 and apply the new accounting treatment from the 2025-30 period. We have adjusted our opex and capex accordingly in our expenditure in line with the AER's guidance for both the 2020-25 and 2025-30 periods.

	• Emissions measurement (Picarro) $15.3 million (previously $20.8 million) • Pipeline Integrity Management $17.0 million (previously $28 million)			
Total		**1,155.2**	**1,161.7**	**1,148.5**

We note that correspondence cited by the AER in its draft decision from the NSW safety regulator within the NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW) indicates that it supports the socialisation of abolishment tariffs, meaning that the AER is unlikely to change its draft decision on this matter. Therefore, although we disagree with AER's rationale for socialising a proportion of small customer connection abolishment costs across transportation reference service tariffs, we have decided to adopt the option of adding a new abolishment service charge for a Standard Residential Connection where there is no current or anticipated redevelopment, renovation or other construction works. The difference between the $250 ($2026) charge for this abolishment service and our standard charge for other abolishment services of $1,472 ($2026) will be socialised. This results in an additional $16.3 million opex compared with the AER's draft decision of $66.4 million (which accounts for abolishments and disconnections), making our total Revised 2025 Plan opex $1,148.5 million.

In developing our Revised 2025 Plan, we note the following:

1. we updated the base year (2024-25) opex with actual reported costs of $267.9 million, which is closely aligned with the estimate submitted in the initial proposal
2. on category-specific forecasts, we accepted the AER's draft decision of Safeguard Mechanism cost and updated the UAG forecast using the latest demand forecast from CORE. We have re-proposed the licence fee as a category-specific forecast and provided our reasoning in section 6.1 below
3. we accepted the AER's modelling approach of adjusting for Ancillary RS costs in the base year opex and updated the base year Ancillary RS costs to our actual reported costs
4. we accepted the AER's draft decision on our SaaS implementation costs and on our project costs associated with establishing and implementing new ICT cloud-based service capacity.

We note that the NSW Government is proposing amendments to enhance governance, safety, and operational efficiency of the regulatory regime established by Pipelines and Gas Supply Acts[4] (Acts). We understand that changes to the Acts are expected in February 2025 with associated changes to the regulations in June 2025. Given the changes are focused on the expansion of government inspector powers to investigate incidents and updating of penalties we do not consider that they will materially impact the cost of our operations. We will monitor the development of the regulations closely and advise the AER if we consider that there is likely to be a change in our obligations that will result in a material change in our operating costs. We will aim to do so before the end of February 2025.

[4] Refer to https://www.energy.nsw.gov.au/nsw-plans-and-progress/regulation-and-policy/public-consultations/pipelines-and-gas-supply-acts.

2. Updated adjusted base year

The AER found that our base opex is likely to be efficient based on our 2023-24 estimate opex, noting that it will finalise its view on whether 2023-24 opex is an appropriate choice of base year when it considers our actual 2023-24 opex.

2.1 Efficiency of base year opex

In our Initial 2025 Plan, we based our opex forecast on an estimated base year (2023–24) opex of $191.1 million (excluding category-specific forecasts). This comprised $169.2 million for Transportation RS opex and $21.9 million for Ancillary RS opex.

The AER's draft decision supports the efficiency of JGN's base year opex, citing our strong performance across various benchmarking measures. The decision acknowledges that JGN operated under an Efficiency Carryover Mechanism (**ECM**) during the 2020–25 period, which provided ongoing incentives to maintain efficient costs. The AER also noted that its final decision would incorporate JGN's actual audited opex for 2023–24.

In our Revised 2025 Plan, the actual audited opex for 2023–24 is $189.7 million (excluding category-specific forecasts), which is $1.4 million lower than the estimate in our Initial 2025 Plan. This includes $172.9 million for Transportation RS opex and $17.5 million for Ancillary RS opex. The reduction in Ancillary RS opex reflects lower-than-estimated volumes, while the Transportation RS opex is slightly higher at $172.9 million.

Our actual audited base year opex of $189.7 million is $42.5 million (or 18.3%) below the efficient opex allowance (excluding category-specific forecasts) for 2023–24. Given the close alignment between our estimated and actual base year opex, our underspend compared to the allowance, and our positive ECM outcome of $4 million, we maintain that our base year opex remains efficient and is appropriate for use as the basis for forecasting opex for the next regulatory period.

Our revised base year opex updated for 2023-24 actual audited opex is provided in Table 2.1.

Table 2.1: Comparison of JGN's proposed and revised 2025-30 base year opex to AER's draft decision ($2025M)

Description	Initial 2025 Plan	AER draft decision	Revised 2025 Plan
Our base year opex before removing Ancillary RS is $267.9 million, compared with $268.3 million in our 2025 Plan	1,341.7	1,228.2	1,245.3
Adjustments made to our base year opex:			
• remove category-specific forecasts in the base year	-396.0	-392.2	-388.6
• remove costs relating to Ancillary RS to reflect the separation of Ancillary RS from 1 July 2025	-109.3	0[5]	0[6]
• re-allocate SaaS implementation costs from capex to opex in line with the AER's guidance[7]	12.3	12.3	10.5
• include the project costs associated with establishing and implementing new ICT cloud-based service capacity	12.0	10.7	10.7
• account for the increment from base year to final year in the model	22.5	22.6	22.5
Adjusted base year opex[8]	**883.3**	**881.6**	**900.4**

5 The AER netted off costs relating to Ancillary RS against our base year opex in its draft decision.

6 As per footnote 6, we have maintained the AER approach for costs relating to Ancillary RS, netting them off against our base year opex.

7 In April 2021, the International Financial Reporting Interpretations Committee (IFRIC) released a guidance note requiring SaaS implementation costs treated as opex. When the 2020-25 allowances were determined for JGN in April 2020, these costs were classified as capex. To ensure our reported actuals and allowances are comparable based on consistent accounting treatments, the AER provided guidance for us to continue applying the old accounting treatment (i.e. capitalising SaaS implementation costs) for the current regulatory period 2020-25 and apply the new accounting treatment from the 2025-30 period. We have adjusted our opex and capex accordingly in our expenditure in line with the AER's guidance for both the 2020-25 and 2025-30 periods.

8 Including debt raising costs, excluding Ancillary RS costs.

3. Forecast trend

In its draft decision, the AER has accepted our proposal to use the rate of change components to adjust base year opex—input cost growth, output growth and productivity—but has made a number of adjustments to our forecasts.

Table 3–1 sets out our forecast Transportation RS opex trend in our 2025 Plan and Revised Plan, compared with the AER's draft decision.

Table 3–1: Forecast Transportation RS opex trend for 2025-30 period ($2025M)

Description	Initial 2025 Plan	AER draft decision	Revised 2025 Plan
Output growth (customer number and line length)	19.0	7.7	15.6
Price growth (labour)	19.2	18.7	17.7
Ongoing productivity improvements of 0.86% per annum	-23.8	-22.3	-24.0
Total	**14.5**	**4.1**	**9.2**

3.1 Output growth and productivity

3.1.1 The AER's draft decision

The AER's draft decision has accepted the use of customer numbers and line length as outputs, alongside the output weights and productivity adjustments derived by CEG in its benchmarking report.

However, the AER rejected our forecast customer numbers, which included disconnected customers. Instead, the AER has adopted ACIL Allen's forecast that excluded disconnected customers to calculate JGN's output growth for the 2025–30 period, as it considers:

- the forecasts to be more aligned with the capex demand assessment
- the AER's draft decision to reduce abolishment fees for residential customers encourages more disconnections to become abolishments, thereby reducing the number of disconnected customers over the 2025–30 period
- the customer number forecasts used in CEG's econometric analysis do not include disconnected customers.

3.1.2 JGN's position

We are concerned with the AER's approach to exclude disconnected customers when determining opex allowances. Servicing disconnected customer sites remains an important opex driver, as maintaining a safe and reliable network requires ongoing activities such as meter reading, leakage surveys, and emergency response to all customer sites including disconnected ones. This has been acknowledged by the AER in its decisions for both gas and electricity networks. Excluding disconnected customers from output growth underestimates the efficient costs required to manage our network.

Servicing disconnected customer sites remains an important opex driver

Including disconnected customers in the opex output growth forecast has been a well-established approach in the AER's decisions in electricity distribution networks and for JGN. The AER highlighted the importance of including disconnected customers in the output measure in its explanatory statement for the economic benchmarking final RIN in 2013[9]:

[9] AER, *Explanatory statement – economic benchmarking final RIN, 29 November 2013*, Pg. 54

> *DNSPs are **required to build and maintain the infrastructure to service de-energised customers** and therefore **these customers should be included in the outputs measure**. Additionally, NMIs will often be de-energised and re-energised as a result of customers changing premises. In these circumstances the premises is still active and hence the de-energised NMI should be reflected in the output measure.* [10]

JGN's position is consistent with these descriptions, as well as prior decisions for JGN, Evoenergy, and electricity distribution networks.

Difference between capex and opex cost drivers

While the AER emphasises consistency between demand assumptions used in deriving opex and capex forecasts, we believe customer numbers should reflect the distinct cost drivers of each. For capex, disconnected customers require no additional connection capex. However, for opex, disconnected customers incur ongoing costs for maintaining the customer meter set and inlet service. Thus, excluding disconnected customers from the opex forecast undermines cost-reflectivity and does not align with their inclusion in other AER decisions.

Consistency with socialising abolishment costs

The AER's draft decision recognises the ongoing costs of maintaining disconnected customer sites as a rationale for socialising abolishment fees[11]:

> *This would leave an unacceptably large number of unused gas connections in situ for indefinite periods and also **involve continuing costs of maintaining a used service**.*

While acknowledging the necessity of these costs, the AER has not provided JGN with a reasonable opportunity to recover our efficient costs of maintaining disconnected customer sites in its draft decision. We do not believe this is consistent with the Revenue and Pricing Principle as outlined in the NGL[12]. We have also not seen any evidence from the AER to suggest that the socialisation of abolishment costs will indeed reduce the number of disconnected customers.

We recommend the AER reconsider its decision to ensure JGN has an opportunity to recover the efficient costs of providing services to customers, including disconnected ones, in line with established regulatory practices and principles.

3.1.3 JGN's revised proposal forecast

We have updated the customer number forecast based on CORE's updated demand forecast, which included disconnected customers. We have also made a minor modelling adjustment to correctly account for the average output growth of the two econometric models in the AER's draft decision opex model[13]. Our output growth and productivity adjustments are set out in Table 3–2.

[10] 'de-energised customers' in electricity terms is equivalent to 'temporarily disconnected customers' in gas terms. NMI (National Metering Identifier), similar to MIRN (Meter Installation Registration Number) in gas terms, represents a customer connection point.

[11] AER, Draft decision – JGN access arrangement 2025-30 – Attachment 9 – Reference tariff setting – November 2024, Pg. 16

[12] NGL, clause 28(2)(a): The service provider should be provided with a reasonable opportunity to recover at least the efficient costs incurred in providing reference services and complying with a regulatory obligation or requirement.

[13] The AER's draft decision opex model included a calculation for averaging the output growth across all econometric models. However, it inadvertently included four models with two blank ones of zero inputs, when there are only two available models. This calculation underestimated the actual output growth for JGN. We have, therefore, updated the calculation in our revised proposal opex model to correctly account for the average of two econometric models instead of four.

Table 3–2: Forecast output growth and productivity adjustments for the 2025-30 period (%)

Description	2025-26	2026-27	2027-28	2028-29	2029-30	Total
Customer numbers (including temporary disconnections)	1,589,296	1,599,696	1,607,134	1,612,693	1,614,297	8,023,117
Line length	26,880	27,027	27,177	27,322	27,432	135,839
Forecast output growth (%)	0.71%	0.60%	0.51%	0.44%	0.25%	
Forecast output growth ($2025M)	**1.3**	**2.4**	**3.3**	**4.1**	**4.6**	**15.6**
Productivity adjustments	-0.86%	-0.86%	-0.86%	-0.86%	-0.86%	
Output growth net of productivity (%)	-0.16%	-0.27%	-0.36%	-0.42%	-0.61%	
Output growth net of productivity ($2025M)	**-0.3**	**-0.8**	**-1.5**	**-2.3**	**-3.5**	**-8.5**

We note that our output growth, net of productivity, is forecast at -$8.5M over 2025–30, underscoring our significant commitment to delivering cost reductions for customers while maintaining the network. Notably, the productivity adjustment of 0.86% per annum we proposed is the highest among recent decisions across gas and electricity distribution networks.

In its draft decision, the AER suggested that JGN absorb any increased opex within the trend allowance rather than seeking step changes or specific forecasts, particularly for Picarro devices, emissions reporting and any potential increase in licence fees. While this approach may be suitable in other contexts, JGN's substantial productivity adjustment—resulting in a negative output growth net of productivity—makes it particularly challenging to absorb these costs within the trend component. We request the AER to assess our step change and specific forecast proposals in light of our significant productivity improvement commitments and the cost reductions we aim to deliver for the benefit of our customers.

3.2 Price growth

We accept the AER's draft decision and provide an updated real labour escalation forecast from Oxford Economics to reflect more up-to-date economic information. This is set out in Table 3–3.

Table 3–3: Forecast input price growth for 2025-30 period (%)

Description	2025-26	2026-27	2027-28	2028-29	2029-30	Total
WPI growth – DAE (A)	1.06%	0.81%	0.69%	0.85%	1.09%	
WPI growth – Oxford Economics (B)	0.41%	1.00%	0.90%	1.12%	1.31%	
Superannuation guarantee increase (C)	0.50%	0%	0%	0%	0%	
Forecast labour price growth (D = (A+B)/2+C)	1.24%	0.91%	0.79%	0.99%	1.20%	
Labour contribution to price growth trend (E)	62%	62%	62%	62%	62%	
Adjusted real labour forecast (F=D x E)	0.77%	0.56%	0.49%	0.61%	0.74%	
Real other forecast (G)	0%	0%	0%	0%	0%	
Input price growth (%) (F+G)	**0.77%**	**0.56%**	**0.49%**	**0.61%**	**0.74%**	
Input price growth ($2025M)	**1.4**	**2.4**	**3.4**	**4.5**	**5.9**	**17.7**

3.3 Total trend

Table 3–4 shows the forecast rate of change, excluding inflation, over the 2025-30 period. These costs will increase our opex by 1% in the 2025-30 period compared to our base opex.

Table 3–4: Forecast Transportation RS opex trend for 2025-30 period (%)

Description	2025-26	2026-27	2027-28	2028-29	2029-30	Total
Output growth	0.71%	0.60%	0.51%	0.44%	0.25%	
Price growth (labour)	0.77%	0.56%	0.49%	0.61%	0.74%	
Ongoing productivity improvements	-0.86%	-0.86%	-0.86%	-0.86%	-0.86%	
Total rate of change (%)	**0.60%**	**0.29%**	**0.13%**	**0.19%**	**0.13%**	
Total trend ($2025M)	**1.1**	**1.6**	**1.9**	**2.2**	**2.4**	**9.2**

Our forecast opex trend is $5.1M greater than the AER forecast in its draft decision. This is due to:

- updated formula to correctly account for the average growth of the two econometric models
- higher output growth from updated demand forecast, the inclusion of disconnected customers
- offset by lower input price growth from updated real labour escalation rates by Oxford Economics.

4. Step changes

In its draft decision, the AER:

- Reclassified our proposed customers experiencing vulnerability support step change to a category-specific forecast
- Modified our step change forecast for ICT services for new recurrent projects to remove ongoing opex for chronic no-access meters from $15M to $14.7M over the 2025-30 period, and included some placeholder decisions based on our proposed forecasts for part of the ICT program of work pending further information on:
  - Cloud capacity growth
  - Contract Lifecycle Management
  - Asset Investment Optimisation
- Rejected our proposed step change for Picarro leak detection services on the basis that it is not satisfied that we have demonstrated that the proposed uplift to 8 Picarro units (vehicles) is prudent and efficient for emission reduction measurement and reporting purposes
- Rejected our proposed emissions reduction – climate change step change
- Modified our Pipeline Integrity Management program step change from $28.1M to $17.0M million over the 2025-30 period to remove double counting resulting from the PTRM adjustment for 2024-25 opex forecast
- Reclassified licence fees and government levies as a step change from a category-specific forecast.

The AER also suggested in its draft decision that JGN absorb any increased opex within the trend allowance rather than seeking step changes or specific forecasts. While this approach may be suitable in other contexts, JGN's substantial productivity adjustment—resulting in a negative output growth net of productivity—makes it particularly challenging to absorb additional opex within the trend component. We request the AER to assess our step change proposals in light of our significant productivity commitments and the cost reductions we aim to deliver for the benefit of our customers.

We accept the AER's draft decision above other than we:

- Have modified our Picarro step change to uplift from our current practices to 6 vehicles and one extra driver (see section 4.1 below)
- Believe that given licence fees and government levies are out of our control they should continue to be treated as a category-specific forecast, consistent with current regulatory treatment (see section 6.1).

We provide further information on the services for new recurrent projects that the AER requested in section 5 below.

Table 4–1 sets out our Revised 2025 Plan opex step changes compared with our 2025 Plan and the AER's draft decision.

Table 4–1: Forecast Transportation RS opex step changes for the 2025-30 period ($2025M)

Description	2025 Plan	AER draft decision	Revised 2025 Plan
Support for customers experiencing vulnerability	2.7	-	-
ICT services	15.0	14.7	14.6
Climate change reporting	3.6	-	-
Emissions measurement (Picarro)	20.8	-	15.3
Pipeline Integrity Management program ('pig and digs')	28.7	17.0	17.0
Licence fees and government levies[14]	-	24.1	-
Total	**70.2**	**55.8**	**46.9**

4.1 Picarro leak detection services

To play our role in delivering Australia's lower emissions energy future, we identified the need for greater visibility of leaks across our network. Accordingly, over the 2020-25 period, we trialled innovative Picarro technology which provides granular and accurate data on the location and size of leaks.

In 2023, we deployed 2 vehicles to replace our existing 5-yearly walking survey, required to comply with our regulatory obligations. We purchased a third vehicle in early 2024 to enable the measurement of emissions reductions from network pressure reduction and targeted mains replacement initiatives. This results in 2.25 vehicles included in our 2023-24 base year.

In developing our Initial 2025 Plan, we identified that enhanced use of this technology – in particular surveying 100% of our network each year with 8 vehicles – will improve the safety of our network, reduce emissions and lower Safeguard Mechanism costs (and network bills) by facilitating the move to direct emissions measurement.

Using innovative technology, to more frequently and more accurately detect emissions, as part of a leak detection and repair (LDAR) program is now accepted as good industry practice. LDAR – in particular, the use of new technology and frequent inspections – is now mandated in Europe and will likely soon be required in the United States.

Further, adopting Picarro technology is consistent with the AER's desire for gas network businesses to pursue innovative projects that help more efficiently manage the network consistent with the National Gas Objective (NGO). It is also consistent with what our customers told us (with 94% Customer Forum support) to reduce network emissions rather than relying on the purchase of carbon credits.

The AER's draft decision did not accept our proposal to increase the number of vehicles to 8. The primary reason was that it considered adopting 3 to 5 yearly surveys and using engineering calculations and modelling would be sufficient to move to direct emissions reporting.

We consider that the draft decision did not give adequate consideration to the safety benefits or reduction in actual emissions achieved from enhanced surveys. We note that reducing *actual* not reported emissions is what is required to address the threat of climate change and is the focus of the NGO. Further we believe it is in the community's best interests from a safety perspective to identify gas leaks annually rather than 5-yearly given the technology now exists to do so.

We also note that since submitting our Initial 2025 Plan the Government has clarified its position on future changes to emissions reporting. The Government has made an in-principle decision to introduce higher-order emission

[14] We classified these as a category specific forecast consistent with previous AER decisions given that they are costs that we do not control.

reporting methods – required to report emissions based on Picarro data.[15] However, in making these changes it will consider international reporting frameworks, such as OGMP 2.0 and the Measurement, Monitoring, Reporting and Verification (MMRV) framework.

Accordingly, it is unlikely that emissions data based on data from 3 or 5-year surveys will be of sufficient quality for direct emissions reporting. This is because under OMGP 2.0 members are expected to work towards achieving 'level 5' reporting (which requires annual reporting) while using data 3 to 5 years old would result in a 'D' or 'F' grade under the proposed MMRV framework.[16]

We have considered the AER's feedback about the potential for engineering modelling and calculations. Estimating emissions based on partial surveys would require us to undertake spatial-temporal extrapolation – which is only possible if we obtain sufficient representative sample data. Given the diverse nature of our network – including the range of materials, ages, pressures soils and geography of each part of our network – we would need to collect data from a large number of samples to reasonably estimate network conditions and degradation and in turn emissions across all network types. We consider that spatial-temporal extrapolation is not possible with 3 vehicles.

Our additional engineering analysis identified that the minimum number of vehicles required to undertake spatial-temporal extrapolation is 6. Under this approach, we will survey poor-quality areas of our network each year and undertake less frequent periodic surveys for good areas.

We have also received the following new information since we submitted our Initial 2025 Plan:

- Safety benefits – recent events indicate that the public is reporting fewer leaks than we had anticipated. This means the improved safety outcomes from more frequent inspections and in turn a more effective LDAR program are greater than initially expected.
- Leak data – key insights include:
    - It is more efficient to focus on leak detection rather than leak repairs as a small number of leaks drive the majority of emissions. Our latest Picarro data shows the top 10% of leaks are responsible for 52% of our fugitive emissions. Greater leak detection data enables us to focus on the largest and highest-value leaks and improve the effectiveness of our repair program.
    - Network deterioration is random and continuous. Leaks have been identified across all network areas including those in good condition). In areas we have surveyed twice, we have found new large leaks within a year, highlighting the benefits of regular inspections.
- Gas Supply Acts amendments – Picarro leak detection is consistent with the NSW Government's proposed amendments to enhance governance, safety, and operational efficiency of the regulatory regime established by Pipelines and Gas Supply Acts.[17]

Revised Piccaro option analysis

Taking into account the new information available, we have re-evaluated our approach by considering the status quo (3 vehicles), spatial-temporal extrapolation (6 vehicles) or maintaining our approach to survey 100% of the network (8 vehicles). **Error! Reference source not found.** shows the summary of the cost-benefit analysis for t he four options considered.

In each option, the reduction in emissions is quantified, and its value is calculated by multiplying the amount of reduced emissions by the dollar value per tonne of avoided greenhouse gas emissions (**VER**) and ACCUs. To avoid double counting the value of ACCUs and the VER, the ACCU cost has been netted off the VER. The economic analysis incorporates the cost of ACCUs as an opex line item, while the value of avoided greenhouse

[15] https://www.dcceew.gov.au/sites/default/files/documents/government-response-cca-nger-review.pdf. We also note that the introduction of a new emissions reporting methodology is implemented through a legislative instrument determined by the Minister for Climate Change and Energy. An act of parliament is not required. And see - Climate Change Bill 2022 Revised Explanatory Memorandum - https://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;query=Id%3A%22legislation%2Fems%2Fr6885_ems_ac10ec20-40ab-44e6-b668-c61045d1bd55%22.

[16] See slide 19 and 20 - https://www.energy.gov/sites/default/files/2024-10/MMRV Domestic Public Webinar Oct 11 2024.pdf

[17] See https://www.energy.nsw.gov.au/nsw-plans-and-progress/regulation-and-policy/public-consultations/pipelines-and-gas-supply-acts

gas emissions is treated as a negative economic benefit to be minimised. The value of ACCUs and the VER in each option are estimated relative to the base case (option 1) scenario.

For simplicity, our economic analysis assumes direct emissions measurement is possible with 3 vehicles (even though this is improbable) understating the benefits of all other options. The updated analysis also assumes we only repair leaks greater than 36 tCO2e understating future emissions reduction benefits.[18]

Table 4–2: Summary of cost-benefit analysis of options

Option	Safety benefits	Reduction in annual emissions (2025-30)	Expected data quality	Direct Emissions measurement	Step change ($2025)	NPV ($2025)
1. Status quo – 3 cars	Low	50,000 tCO2e	OGMP Level 3 'D' or 'F' MMRV data quality	Improbable	$1.7 m	-
2. Spatial-temporal extrapolation – 6 cars	Medium	105,000 tCO2e	OGMP level 4 'B' MMRV data quality	Possible	$15.3 m	$182.2 m
3. 100% annual survey – 8 cars	High	132,000 tCO2e	OGMP Gold Standard: level 4 'A' MMRV data quality	Highly likely	$21.5 m	$249.9 m
4. Staged approach: Spatial-temporal extrapolation before moving to 100% survey – 6 then 8 cars	Medium/high	105,000 tCO2e	OGMP Gold Standard: Level 4 with pathway to level 5) 'C before moving to 'A' MMRV data quality	Likely	$15.3 m	$244.2 m

Option 3 100% annual survey (8 cars) provides the highest net present value; however, cost outcomes are slightly higher in the short term. We are also conscious that the AER has already not accepted this approach.

Accordingly, we have changed the approach in our Revised 2025 Plan to move to adopting a staged approach (option 4) where we adopt spatial-temporal extrapolation before moving to 100% annual surveys (in the 2030-35 period). This option delivers similar benefits although it comes at the risk that data quality is not sufficient to move to direct emissions measurement. In this case, we will need to purchase additional Picarro units in the 2025-30 period.

We believe that moving to 6 vehicles represents a prudent and efficient approach, consistent with accepted good industry practice, and will enable us to:

- Ensure public safety, which has been a key concern of the AER's draft decision, by reducing the risk of leaks from the gas network.
- Optimise the benefits to our customers, and the community, of reducing emissions. The most efficient approach to emissions management requires accurate information as to the size and location of the leaks from the gas network. Given the network is continually deteriorating more frequent inspections are required to materially reduce emissions.

[18] This is the primary reason the economic benefits are lower than identified in our initial analysis.

- Move to direct emissions measurement for reporting purposes. This is critical to ensuring that consumers do not pay more than necessary under the Safeguard Mechanism. Over time, if we continue to report costs under the current reporting method consumers will pay higher costs as we will report more emissions than we actually emit.

Our revised approach remains consistent with customer expectations who endorsed our proposal to expand the use of Picarro leak detection to reduce carbon emissions instead of buying carbon credits.

We also consider that the Picarro step change is consistent with the AER's draft decision on other parts of our 2025 Plan to achieve emissions reduction targets, such as the socialisation of abolishment costs to lower safety risk and the removal of our declining tariff blocks to reduce the incentive for higher consumption and emissions.

Revised Picarro step change

Given our revised approach, we have reduced our step change to 3.75 vehicles (down from 5.75) in our Revised 2025 Plan. This reduces our forecast opex step change for Picarro leak detection services from $20.8M to $15.3M over the 2025-30 period.

Table 4–3 sets out our estimate of the costs of $14.7M ($2023), or $15.3M ($2025), for our emissions measurement over the 2025 Plan period.

Table 4–3: Emissions measurement – Picarro technology costs 2025-30 ($2023 millions)

Details	2025-26	2026-27	2027-28	2028-29	2029-30	Total
Picarro technology and software subscription	2.57	2.57	2.59	2.59	2.59	12.93
Personnel costs	1.09	1.09	1.09	1.09	1.09	5.46
Vehicle costs	0.10	0.10	0.10	0.10	0.10	0.52
Administrative, operational and analytical costs	0.21	0.18	0.18	0.18	0.18	0.94
Total costs	**2.9**	**2.9**	**2.9**	**2.9**	**2.9**	**14.7**

Further detail on our consideration of the AER's draft decision, the new information available and our updated economic analysis is provided in *JGN - RP - Att 5.3 - Picarro - 20250115 – Public.*

5. Step changes - ICT

This section provides further information requested by the AER in its draft decision on some of our opex step change forecasts for ICT services for new recurrent projects.

5.1 Cloud capacity growth

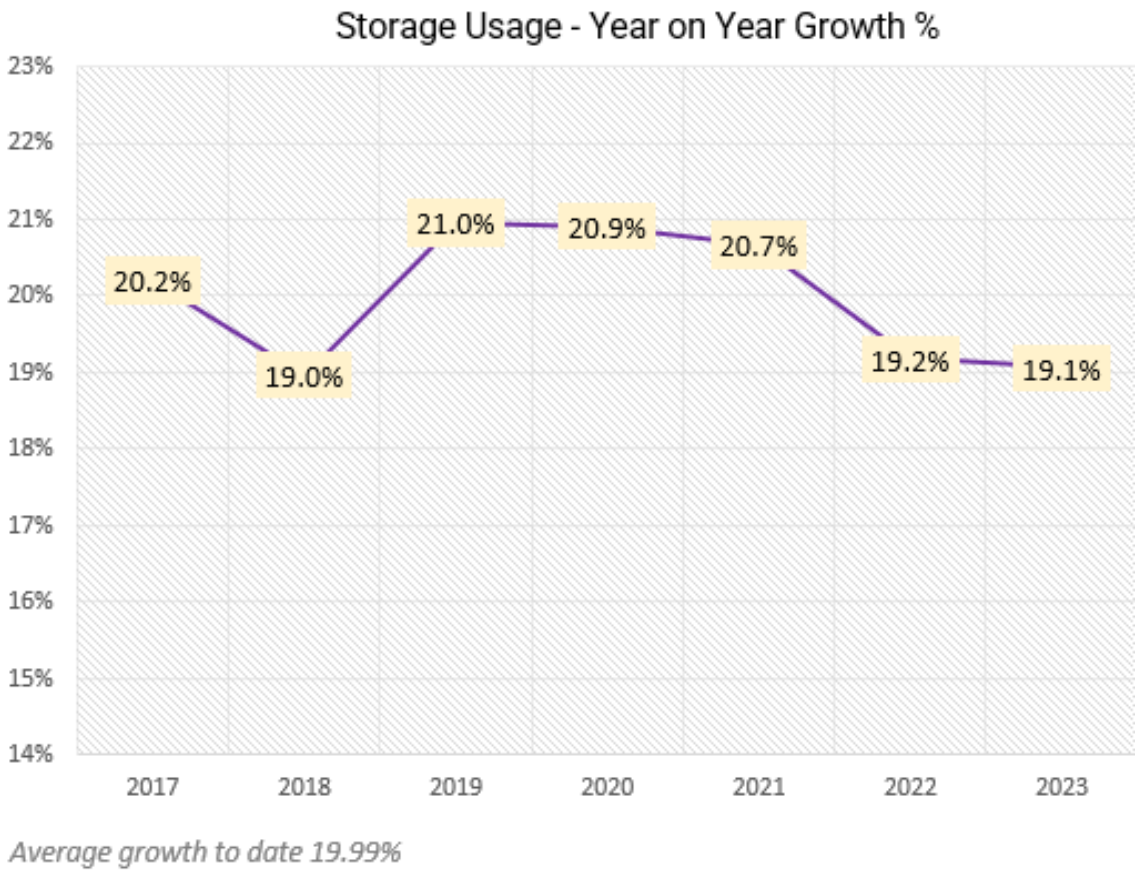
In its draft decision, the AER raised concerns that our proposed annual growth rate of 15% for cloud capacity appears excessive. The AER requested more information to justify the basis for this forecast.[19]

Cloud capacity growth refers to growth related to storage and compute processing:

- **Storage** includes all enterprise storage platforms deployed and used by our systems, applications, and users. It includes active, backup and archive data.
- **Compute processing** refers to servers, serverless computing platforms and all other computing environments that enable our applications to execute, retrieve and analyse data.

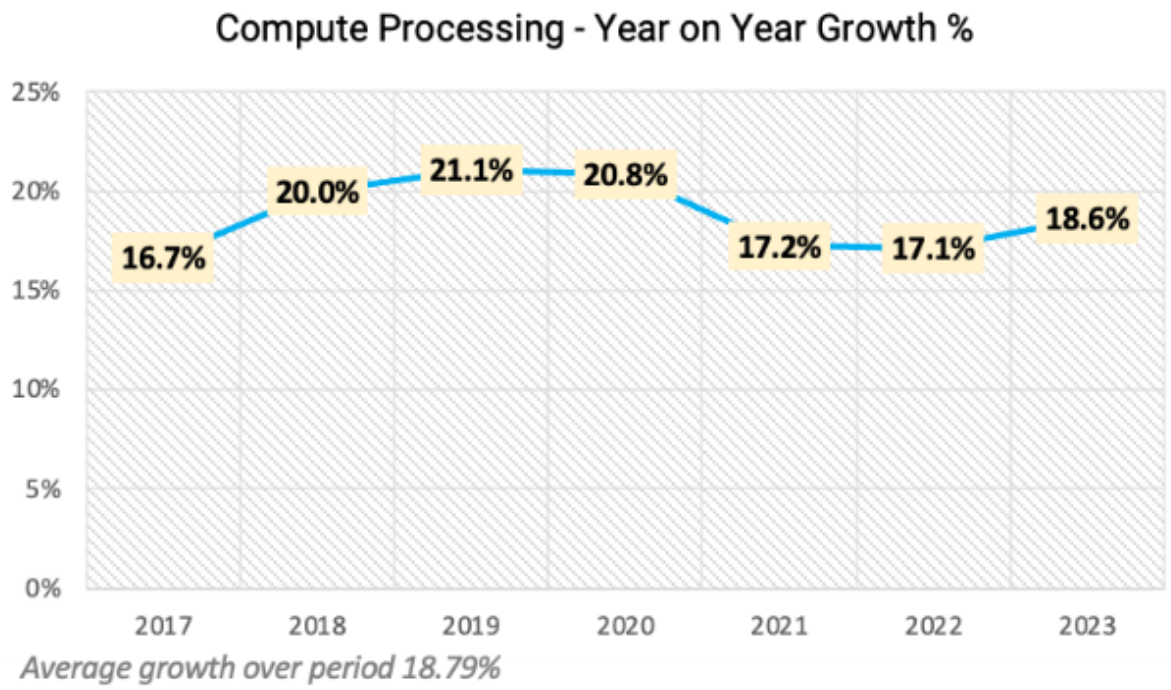
Since 2017, our analysis indicates a consistent trend of storage and compute processing capacity increasing on average at around 20% per annum. Refer to Figure 5–1, which shows the increase in terabytes of storage each year (as a percentage) each year due to organic growth, and Figure 5–2 which shows the increase in CPU (computer processing units) each year (as a percentage) due to organic growth.

Figure 5–1: Year-on-year storage growth (calendar year)



[19] AER, JGN access arrangement 2025-30 - Draft decision - Attachment 6 operating expenditure, November 2024, p. 16.

Figure 5–2: Year-on-year processing growth (calendar year)



In response to evolving business needs and technological advancements, we have embraced cloud computing. As a result, our projection for cloud capacity growth stands at a conservative estimate of 15% per year, highlighting overall net savings in terms of our storage and compute processing costs. This is necessarily above our forecast output growth rate of 0.5% per annum and the AER's draft decision of 0.2% per annum.

It should be noted that the 15% forecast growth is related to the organic growth of existing systems and does not relate to the growth associated with new projects or new systems coming online - any new project-related cloud costs are accounted for separately in project-related forecasts. This organic growth aligns with industry insights, as discussed below in section 5.1.1 below.

Key drivers of organic cloud capacity growth include:

- Security
- Compliance
- Backup and disaster recovery
- Vendor-driven
- Innovation – data-driven decision-making.

These are discussed in greater detail below in section 5.1.2 below.

As noted above, organic growth of our shared storage and processing platforms is inevitable. However, Jemena employs several strategies to manage this growth and associated costs efficiently and ensure the prudent use of our existing and future cloud capacity investments. We outline these strategies in more detail in section 5.1.3 below.

5.1.1 Our estimates align with industry insights

Our projected 15% per year forecast is supported by industry evidence:

- Gartner: “By 2028, large enterprises will triple their unstructured data capacity across their on-premises, edge and public cloud locations, compared to mid-2024.”[20]
- IDC: “Enterprises are generating and storing more data than ever before in support of modern digital business initiatives. IDC estimates that on average, enterprises can expect their storage capacity to grow 30% annually.”[21]
- IDC: “IDC projects that over the next two years enterprise data will grow at a 42.2% annual rate.”[22]
- AWS has stated: “On average, enterprise cloud spending tends to grow approximately 20-30% year-over-year after initial migration. However, this growth rate can vary significantly depending on several key factors:
    - Initial Migration Strategy
    - Cloud Maturity Stages
    - Factors Influencing Cloud Spend Growth
    - Cost Management Approaches

  While 20-30% annual growth is typical, some enterprises might experience more modest 10-15% growth or more aggressive 40-50% growth depending on their specific digital transformation strategies and technology investments.”[23]

JGN is a large enterprise and, therefore, based on industry benchmarking, an increase of 15% year-on-year growth for cloud storage and computing power proposed in our Revised 2025 Plan is well within the ranges noted above.

5.1.2 Drivers of organic growth in Jemena’s shared cloud storage and processing

Whilst JGN’s network is in a mature phase, innovations and reforms are just as important as in a growth phase to ensure prudent and efficient operations. These reforms and innovations are often delivered through technology, and cloud processing and storage support this, delivering more efficient outcomes to customers in the long term.

Our shared cloud storage and processing platforms are the foundation upon which all our systems and applications operate. Due to the integrated nature of our IT ecosystem, the growth and evolution of our existing systems and applications and how our staff use them, directly impact the organic growth of our shared resources.

Key drivers of organic growth are described below.

5.1.2.1 Security

Ensuring the security and integrity of our data is a top priority. To detect and investigate security incidents, we need to maintain comprehensive logs and audit trails of system and user activities. [redacted] Additionally, it centralises log collection from diverse sources, enabling comprehensive investigation of security incidents and forensic analysis of security events. The primary objective

20 Gartner, October 2024 | Use_Data_Storage_Man_816065_ndx.pdf

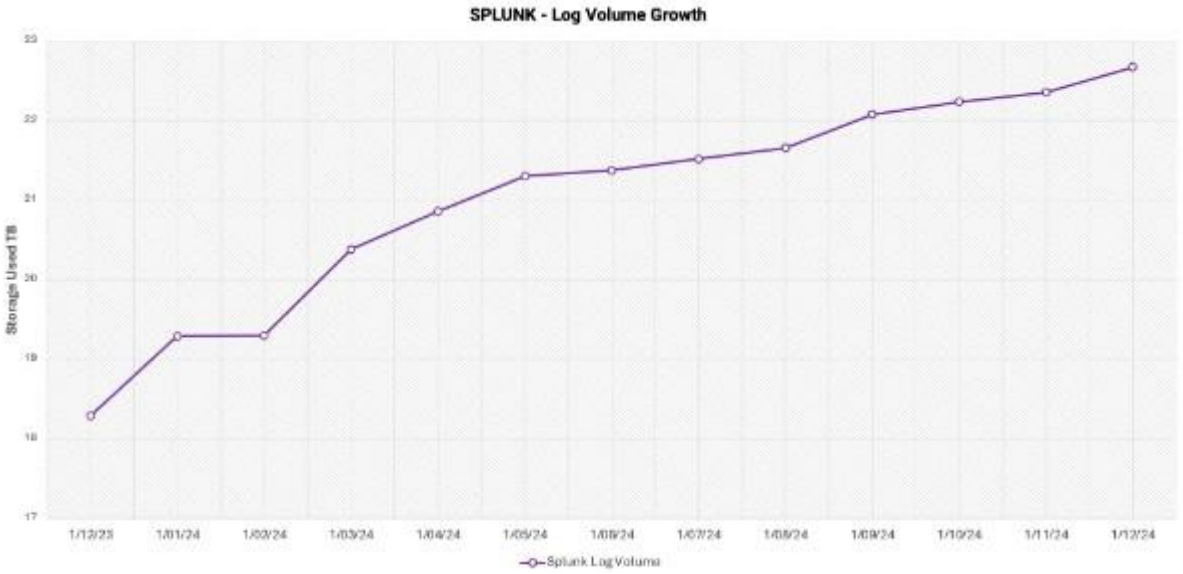
21 IDC, August 2021 | IDC InfoBrief - Data Deluge: Why Every Enterprise Needs a Cold Storage Strategy | https://cdn.allbound.com/iq-ab/2021/10/IDC-ColdStorage-ST02370A.pdf?mkt_tok=NTYxLUFBUi02NTgAAAGVnftgwhKWGCghN1CbCuY0vA_HxVBntm-GauLjAVp3rnTkDBthDeI5CxquA7r-lLD9_4q7YEPomRP3RHurf__o2NhKeOq4F8oZ0oviSjKiXZzqg34

22 Seagate (referencing IDC), July 2020 | https://www.seagate.com/au/en/news/news-archive/seagates-rethink-data-report-reveals-that-68-percent-of-data-available-to-businesses-goes-unleveraged-pr-master/

23 Source: Email from AWS dated 4th December 2024

of this platform is to log all activities across all devices on the Jemena network. The graph in Figure [redacted] illustrates an annual growth rate of 19%.[24]

Figure [redacted]



5.1.2.2 Compliance

In the Australian Energy Market Commission's (AEMC) vision for a shared energy future, the AEMC stated that rule change throughput has increased by 30% in the last two years and that it is now averaging 20-25 changes per annum.[25] Further, the AEMC stated "Importantly, we will continue to test and adopt new and innovative ways of working that increase the pace, quality and impact of our work and decisions."[26] The AEMC has stated it expects to increase the rate at which it implements rule changes. With each rule change impacting JGN, system changes are more often than not required; with each new requirement, more storage and computing are required.

Outside of the National Gas Rules, compliance with various other regulations and industry standards requires us to collect and store specific types of data for extended periods. For instance, JGN needs to satisfy several legal and regulatory expectations regarding the data it stores, all of which require additional storage and compute resources at an increasing rate, including:

- New obligations and reporting requirements for facilities subject to the Safeguard Mechanism (including the JGN network) under the *National Greenhouse and Energy Reporting Act 2007* (Cth) and relevant regulations, increasing the need for accurate and auditable data on greenhouse gas emissions.
- The AEMC has officially incorporated emissions reduction considerations into the national energy rules, solidifying a significant regulatory shift towards net zero, and increasing the need for accurate and auditable data on greenhouse gas emissions.
- The issuance of the FIRB Land Exemption Certificate by the Foreign Investment Review Board, which grants an exemption from seeking approval for Australian land acquisitions is subject to specified conditions that JGN must comply with, increasing how we manage and store our sensitive operational data.
- In December 2022, the *Privacy Act 1988* (Cth) (Privacy Act) was amended to significantly increase the maximum penalties for serious privacy breaches and to provide the regulator with more extensive powers.

24 Note – these costs are not included in our cybersecurity Investment brief.

25 AEMC | https://www.aemc.gov.au/our-work/our-priorities

26 AEMC | A consumer-focused net zero energy system | https://www.aemc.gov.au/sites/default/files/2024-10/AEMC_narrative_150824_v6 %28002%29 as of 10 October 2024.pdf pg.35

Furthermore, on 16 February 2023, the Attorney General released the Privacy Act Review Report, which contains extensive recommendations to reform and broaden the application of the Privacy Act, increasing the need to better govern and store personal identifiable information (PII).

- The AER employs Regulatory Information Notices (RINs) to gather accurate data for regulatory decisions. The AER relies on accurate data to make informed decisions.
- [redacted] regulatory framework requires Jemena to understand where business-critical data is stored (and secured).

With a historical trend of change and a supported forecast of continued reform, we anticipate the need to deploy elevated levels of growth in storage and computing power.

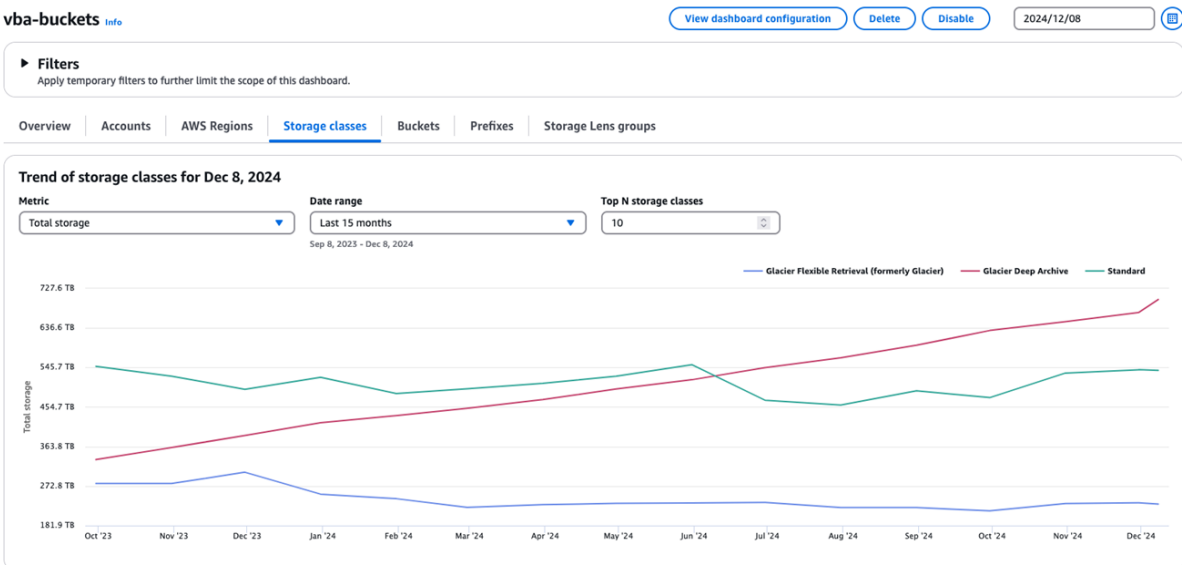
5.1.2.3 Backup and disaster recovery

To ensure business continuity and protect against data loss, we must maintain robust backup and disaster recovery mechanisms. This involves regularly creating copies of our critical data and storing them in secure, geographically dispersed locations. As our primary data footprint grows, so does the size of our backups. As of December 2024, Jemena is safeguarding 1,500 TB of data with an annual growth of 26.7% since October 2023 (across all three tiers).

The chart in Figure 5–4 illustrates Jemena's strategic utilisation of "Storage Tiering." This approach enables Jemena to optimise storage utilisation by employing various storage types, each with a distinct trade-off between performance and cost per terabyte (TB). The Glacier Deep Archive, a lower-tier storage solution, serves as the primary repository for most of our backup data. This strategic choice ensures the protection and security of our information in the event of a disaster or system restoration requirement while simultaneously minimising storage costs.

The Standard tier, positioned at the highest cost point, is reserved for the most recent backups. It is more likely to be required in the immediate aftermath of a disaster or restoration need.

Figure 5–4: Backup growth (1/12/23 – 1/12/24)

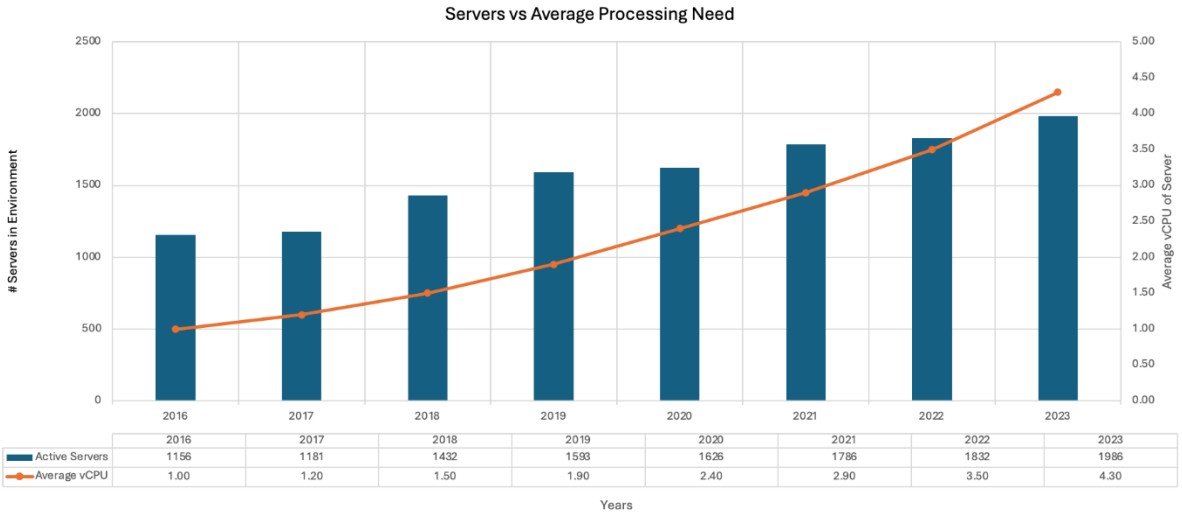


5.1.2.4 Vendor driven

As technology progresses, operating systems and applications are constantly advancing to offer new features, improved performance, and enhanced security. Each new version introduces capabilities that leverage cutting-edge advancements; however, this evolution also drives up the baseline requirements for cloud capacity.

The orange line in Figure 5–5 shows a clear trend of increasing computational requirements, with the average server needing more than four times the processing power, from 1 vCPU in 2016 to 4.3 vCPU in 2023. This reflects the growing complexity of modern applications and vendor solutions, which demand significantly more computing resources to deliver enhanced functionality and performance.

Figure 5–5: Server and average processing needs (Calendar year reporting)



[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

There is not any information to indicate this trend will slow down, rather, as noted above, this trend should continue or accelerate based on the following observations:

- **CPU Growth**: The baseline transitioned from single-core, x86 CPUs to multi-core, 64-bit CPUs with progressively higher clock speeds. The push towards virtualisation and cloud computing has significantly increased CPU demand.
- **RAM**: Minimum RAM requirements have surged substantially, reflecting the increased intensity of applications and database loads, as well as in-memory processing features.
- **Disk Space**: Initially driven by operating system and basic application needs, newer versions require more space due to built-in features, additional drivers, and expanded libraries.
- **Hybrid & Cloud**: [redacted] introduces support for hybrid workloads, which significantly impact hardware specifications upwards.

Jemena must periodically upgrade hardware to meet evolving requirements and trends as observed above. This ensures compatibility with modern server features, scalability for future workloads, and mitigation against cyber-security attacks.

[redacted]

[redacted]

[redacted]

Again, there is not any information to indicate this trend will slow down, rather, as noted above, this trend should continue or accelerate.

Key Observations and Trends:

- **Processor Requirements**: Increased over time due to more advanced kernel capabilities, virtualisation[27] technologies, and containerisation[28].
- **Memory Requirements**: Gradually increased, reflecting the need for smoother GUI performance and larger kernel features.
- **Disk Space Requirements**: Scaled up to accommodate newer features, larger file system defaults, and additional utilities.
- **Notable Features**: The rise in specs directly correlates with shifts toward containerisation, better file systems, enhanced virtualisation, and hybrid cloud capabilities.

5.1.2.5 Innovation – data-driven decision making

Data-driven decision-making has become critical for JGN. To gain insights about our network, identify asset trends and performance, and make better-informed decisions, we collect, store, and analyse vast amounts of data from various sources. As we expand our data collection activities, our storage requirements grow as shown in Figure 5–2. Examples of data-intensive activities that have contributed to capacity growth include but are not limited to the following:

- **Gas leaks** – Automatically assigned priority to leaks found during gas surveys so that crews could better prioritise maintenance.
- **Repair vs replace** – develop a standardised and data-driven approach towards the decision-making related to repair vs rehabilitate decision-making.
- **Outages and disconnections** - Matching of addresses across systems, reducing wasted site visits, and ensuring compliance with National Energy Retail Rules (NERR) requirements.
- **Critical document detection** – Assisted the Safety and Operating Plan audit by surfacing critical documents through artificial intelligence (AI), thereby improving compliance.
- **Meter Data Loggers** – analysing revenue, cost, asset and site data to better inform decision-making associated with JGN meter data loggers' location and ongoing management.
- **Assistance with meter sampling process** - Automated, explainable and consistent modelling of gas meter replacement forecasts.

Often, it is the intelligence in terms of how the data is utilised over the data itself that yields the best result. By investing in more data and computing power to enhance our data analytical capabilities, the more we improve our understanding of the state of our assets, which would not otherwise be achieved.

5.1.2.6 User-driven

One of the drivers of storage growth is the increasing amount of data generated and consumed by our existing users (i.e. not a growth in users per se). There is an increase in the volume of unstructured data created through everyday business activities, such as emails, email attachments, sharing of documents, images, drawings and multimedia content. Our provisioned capacity to support these activities has grown 28.57% from 40TB to 56TB[29] in the last 12 months alone.

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27 Virtualisation technologies refer to methods and tools that allow multiple virtual environments or operating systems to run on a single physical hardware system. Virtualisation abstracts the underlying hardware, enabling better resource utilisation, flexibility, and scalability in cloud computing environments. Advanced virtualisation features like live migration, fault tolerance, and resource over-commitment require more CPU.

28 Containerisation refers to a lightweight virtualization technology that involves packaging an application and its dependencies together into a self-contained unit, called a container. Containers, while efficient, often require high-performance processors to manage tasks like orchestration, scaling, and maintaining security across distributed environments.

29 Source: Jemena Cloud FinOps

5.1.3 Strategies to manage organic growth efficiently

JGN's cloud storage and processing management systems allow us to efficiently balance agility, control, risk mitigation, and costs. As outlined above, the organic growth of our storage and processing platforms is inevitable. However, Jemena employs several strategies to proactively manage this growth and associated costs and to ensure the prudent use of our existing and future cloud capacity investments; without these active management strategies, the rate of cloud capacity growth would be even higher than our forecast 15%.

It should be noted that these strategies are in place and are reflected in the trend storage and compute power figures presented above.

These strategies to manage organic growth are described in more detail below.

5.1.3.1 Jemena's Cloud FinOps.

We have a dedicated team that plays a critical role in managing cloud capacity by ensuring Jemena's cloud resources are used efficiently and cost-effectively. The team use various tools to continuously manage and improve our cloud capability. One example is the AWS Compute Optimizer, which continuously analyses our environment; the Platform Engineering team, in collaboration with our Cloud FinOps practice, reviews the Optimizer recommendations, identifies optimisation opportunities and evaluates how best to implement the recommendations effectively.

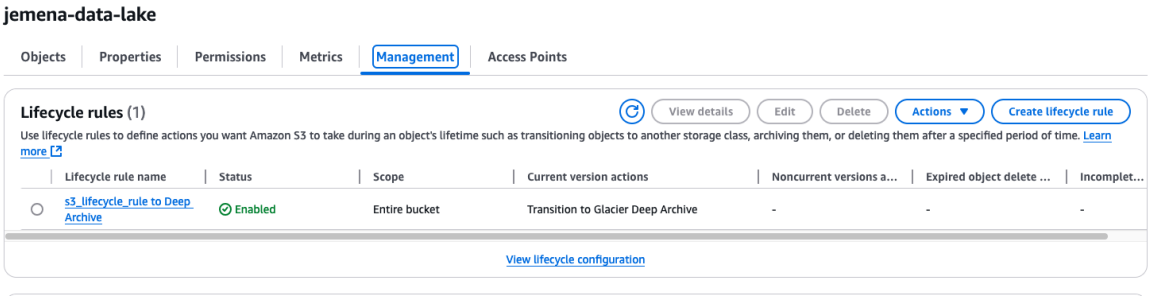
5.1.3.2 Storage Tiering

One of our key ICT partners offers different storage tiers with varying performance and cost characteristics. By leveraging these storage tiers, we can match the performance and cost requirements of our data to the appropriate storage tier. For example, we can store frequently accessed data on high-performance storage tiers while moving less frequently accessed data to lower-cost storage options. This approach allows us to manage our storage costs[30] while ensuring that data is available when needed.

Figure 5–8 illustrates Jemena's utilisation of Storage Tiering and the application of archiving strategies to data that remains necessary for reporting purposes but does not necessitate immediate performance or accessibility.

Figure 5–8 illustrates our implementation of this specific scenario, where we transitioned 50TB of our Jemena-Data-Lake from an active data analytics environment to a reporting-focused one. Consequently, an archiving policy was developed that involved the complete migration of the Jemena-Data-Lake to Glacier Deep Archive (refer Figure 5–4), the most cost-effective storage class offered by [redacted]

Figure 5–8: Jemena's utilisation of Storage Tiering



30 Refer [redacted]

5.1.3.3 Cloud Computing Elastic Scaling

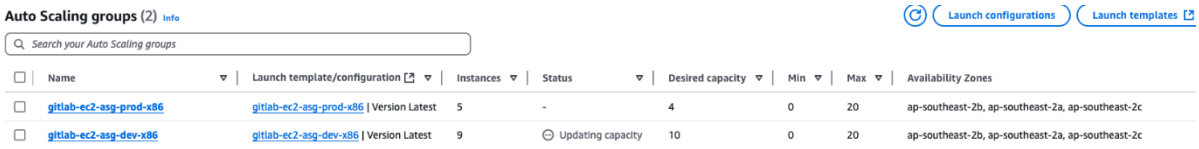
AWS provides elastic scaling capabilities, allowing us to dynamically adjust our processing capacity based on actual workload demands. Instead of pre-provisioning capacity for peak loads, we scale our resources up and down in real time, ensuring that we have the right amount of processing power when needed. This approach helps us avoid over-provisioning and reduces the need to maintain idle capacity, contributing to our ability to keep processing growth at 15%.

For instance, consider the business application titled gitlab-ec2asg-prod-x86 in Figure 5–9. This application can run with a minimum of 4 servers, but if it experiences heavy load and demands optimal performance, it can automatically expand to a maximum of 20 servers. Conversely, when the application's performance requirements diminish, it can be reduced back to the minimum server count. So, it can scale from 20% to 100% depending on needs.

Dynamic scaling is a key feature of Auto Scaling Groups. As illustrated in the example, the application gitlab-ec2-ask-prod-x86 is currently running with 5 servers, while the application gitlab-ec2-ask-dev-x86 is operating with 9 servers (below the desired minimum).

This demonstrates how Auto Scaling Groups effectively manage organic capacity growth.

Figure 5–9: Business application example



5.1.3.4 Data Retention Policy

To manage the growth of our storage footprint, we implement the Jemena *"Records Archive, retention and disposal schedule",* which specifies how long we must keep different types of data, for example, environment backups and user email archives. This policy takes into consideration compliance with statutory and regulatory content retention timeframes and content that is required by Jemena for operational, regulatory and legal purposes. By enforcing this policy, we ensure that we are not retaining data longer than necessary, thus optimising our storage capacity.

5.1.3.5 Architecture

One of our key architectural guiding principles is 'composability' with a preference for re-use where possible thereby minimising storage and processing increases. We will increasingly leverage cloud-native architecture that allows us to construct and deploy solutions that are less reliant on heavy processing.

5.2 Contract Lifecycle Management

In its draft decision, the AER requested that we provide information on the annual expenditure on the legacy systems that will not be incurred following the implementation of the Contract Lifecycle Management (CLM) project. Further, the AER wants to understand how these savings have been accounted for in the proposed non-recurrent opex for this project.[31]

5.2.1 Existing systems savings

We do not expect any existing system savings.

[31] AER, JGN access arrangement 2025-30 - Draft decision - Attachment 6 operating expenditure, November 2024, p. 16.

JGN's current approach to managing third-party contracts is fragmented and lacks automation due to the breadth and complexity of systems involved (including [redacted] and off-system processes established to deal with rapidly changing requirements.

[redacted] At this early stage, it is still being determined whether they will be required or reviewed as part of the solution assessment process. However, with these relatively small amounts, they are within the project's risk tolerance at this early stage of consideration.

5.2.2 Operating efficiency savings

We expect any operating efficiency savings will be offset by the increased volume and complexity of contract lifecycle management (CLM) work.

We anticipate an increasing volume and amount of complexity will be introduced in the 2025-30 period due to increased complex regulatory and legislative obligations. With increased complex obligations, coupled with a more diverse supplier landscape, JGN will need to manage a growing and more complex workload to address these increasing risks and evolving priorities. If we did not implement a CLM system, we estimate that we would need an additional 2 FTE to accommodate this increased workload (refer to option 4 in Table 5–1).

In summary, any operating efficiencies or cost savings that may be realised with a CLM system will be offset by this increased and more complex workload.

Table 5–1: CLM option analysis

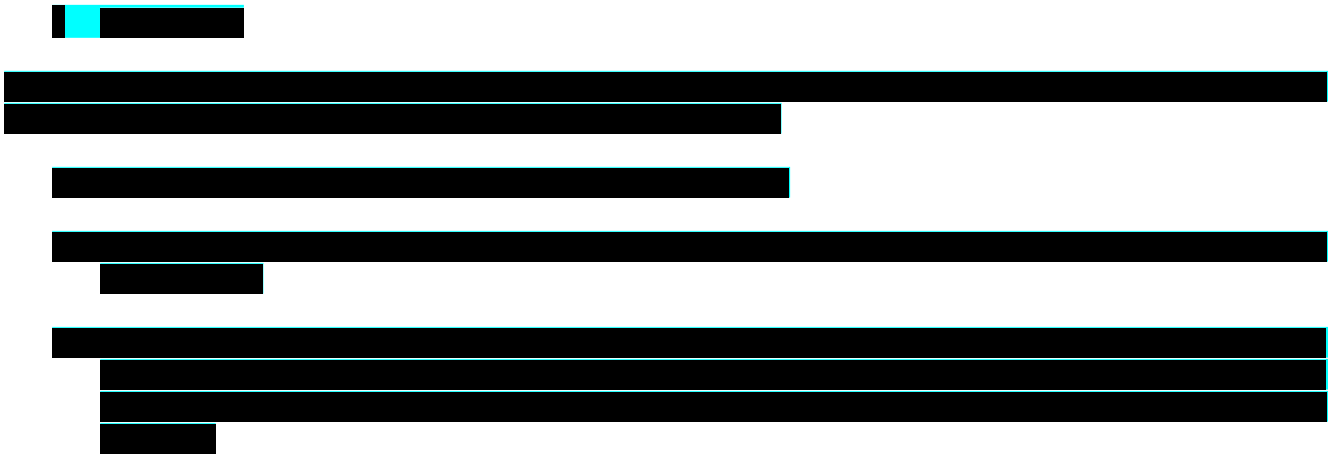
	Brief description	NPV
Option 1	Status Quo – do nothing	Not viable
Option 2	Adopt a standalone CLM	($1.6M)
Option 3	Implement a fully integrated CLM	($2.3M)
Option 4	No CLM, 2 additional FTE[32]	($1.6M)

A centralised CLM system will capture, track, and manage all contracts throughout their lifecycle and support compliance with new and emerging obligations.

We describe these obligations below and illustrate why we expect an increase in the volume and complexity of our workload with respect to contract lifecycle management.

[redacted]

[32] Salary per Hays Salary Guide FY24/25



5.2.2.2 Modern Slavery Act 2018 (MSA)

JGN must implement effective procurement practices to assess and address modern slavery risks across its operations and supply chains. The MSA requires entities to prepare and publish an annual modern slavery statement that describes the steps taken to assess and address modern slavery risks. To comply JGN must include:

1. a description of structure, operations, and supply chains, including information about the goods and services it provides and the countries in which it operates

2. a description of the associated modern slavery risks, including information about the specific types of slavery or trafficking that may occur in its operations or supply chains

3. a description of the actions the entity has taken to assess and address modern slavery risks in its operations and supply chains, including information about the due diligence processes it has undertaken, the policies and procedures it has implemented, and the training it has provided to its employees and business partners

4. a description of any actions taken to support the identification and protection of victims of modern slavery and to prevent modern slavery from occurring in its operations and supply chains

5. a description of the performance indicators and targets used to measure the effectiveness of the actions to address risks

6. the name of the person responsible for ensuring that JGN complies with the reporting requirements under the MSA

7. a statement that the information provided in the MSS is accurate and complete to the best of the person's knowledge and belief.

5.2.2.3 Scope 3 Emissions Reporting

Climate-related financial disclosures will soon include scope 3 emissions reporting (in addition to scope 1 and 2). By disclosing scope 3 emissions, the aim is to enhance transparency and accountability and ultimately drive emissions reductions across the economy. This regulatory measure recognises the interconnectedness of emissions across supply chains and acknowledges the need for collective action to combat climate change effectively. JGN's mandatory reporting empowers stakeholders, including government agencies, investors, customers, and the public, with valuable information to make informed decisions and hold companies accountable for their environmental performance.

5.3 Asset Investment Optimisation

In its draft decision, the AER supports the benefits of this project and found that the associated costs appear prudent and efficient pending confirmation. However, the AER has requested that we provide details of the costs to support the legacy system, and how these costs (or cost savings) have been accounted for in the proposed costs for this project.[33]

We confirm that there are no related opex cost savings. Historical opex costs incurred to support our end-of-life legacy systems, and how these have been treated are outlined below:

[redacted]

- System Support—With the maturity of our [redacted], support is relatively low; approximately one full FTE supports the [redacted] and other systems across many staff. Once the new system is implemented, this FTE function (again, across many staff) will still be required to support the other systems and proposed new solution.

- Front-line staff—The impacted systems with Asset Investment Optimisation are back-end systems, therefore, no savings in operations are expected, as the front-line staff functions and operations are unchanged.

[33] AER, JGN access arrangement 2025-30 - Draft decision - Attachment 6 operating expenditure, November 2024, p. 26.

6. Category-specific forecasts

In its draft decision, the AER:

1. reclassified our licence fees to an opex step change
2. proposed that our Safeguard Mechanism costs be fully treated as an annual true-up
3. reclassified our proposed costs for supporting customers experiencing vulnerability as a category-specific forecast
4. recalculated our UAG and debt-raising costs for consistency with its draft decision on other matters
5. included socialised abolishment costs in the opex forecast.

We accept the AER's draft decision other than treating our licence fees as an opex step change. This is because we have no control over the fees and levies charged to us, and we do not believe treating them as a part of base opex is in the long-term interests of our customers. We provide more details on the licence fees in section 6.1 below.

We have recalculated the socialised abolishment costs based on the revised demand forecast and our re-proposed abolishment charges. We provide our calculation of the forecast socialised abolishment costs for the category-specific forecast in section 6.2 below.

We have recalculated our forecast UAG and debt-raising costs for consistency with other parts of our Revised 2025 Plan.

Table 6–1 sets out our forecast Transportation RS category-specific opex in our 2025 Plan and Revised 2025 Plan, compared with the AER's draft decision.

Table 6–1: Forecast Transportation RS category-specific opex for the 2025-30 period ($2025M)

Description	2025 Plan	AER draft decision	Revised 2025 Plan
UAG	145.8	141.7	139.3
Licence fees and government levies	21.3	-	24.1
Safeguard Mechanism costs	10.4	-	-
Support for customers experiencing vulnerability	-	2.7	2.7
Debt-raising costs (the AER adjusts these separately)	9.7	9.5	9.6
Socialised abolishment costs	-	66.4	16.3
Total	**187.2**	**220.2**	**192.0**

6.1 Licence fees

The AER's draft decision treated licence fees as part of base opex rather than as a category-specific forecast with a true-up in the tariff variation mechanism. It considers the year-on-year variation to be relatively minor in the context of total opex and that this approach aligns better with the incentive-based regulatory framework, with the forecasting risk shared with customers through the efficiency carryover mechanism (**ECM**).

Inconsistency with electricity distribution networks

In the draft decision, the AER referred to its rejection of Ausnet's proposal of recovering Energy Safe Victoria (**ESV**) levies through the tariff variation mechanism. Ausnet's proposed treatment is consistent with that of the Victorian electricity distribution networks, where the exact levies are recovered as a jurisdictional scheme amount

via annual pricing proposals. The AER rejected this on the basis that the provision of recovering jurisdictional scheme amounts in the National Electricity Rules (**NER**) is absent in the National Gas Rules (**NGR**)[34].

We believe it is important to maintain consistency in the incentive-based regulatory framework between gas and electricity distribution networks. The AER has sought such consistency by requiring JGN to apply the updated electricity Capital Expenditure Sharing Scheme (**CESS**) guideline to the Access Arrangement (**AA**). It also sought consistency with the NER when assessing JGN's cost passthrough mechanism in the AA.

However, in assessing the licence fees, the AER departed from this principle by introducing inconsistent incentives and risk-sharing between the Efficiency Benefit Sharing Scheme (**EBSS**) for electricity and the ECM for gas networks. In Ausnet's example, ESV levies are excluded from EBSS in its electricity distribution network but included in ECM in its gas distribution network, creating unnecessary discrepancies for identical cost categories.

Windfall gains or losses in the ECM

[redacted]

Table 6–2: Comparison of ECM outcome with and without licence fees in 2020-25 ($2025M)

ECM Carryover Amounts	2025-26	2026-27	2027-28	2028-29	2029-30	Total
Status quo – exclude licence fees from opex	[redacted]					
AER proposed – include licence fees in opex						
Difference in ECM						

We do not believe such arbitrary ECM outcomes are in the long-term interest of our customers, as they distort incentives and do not reflect actual efficiency improvements.

JGN's position

JGN's licence fees have been treated as a category-specific forecast with a true-up mechanism in the price control formula for the past two regulatory periods. The nature of the costs is not expected to change for the next regulatory period.

Further, JGN's true-up over this period has been based on actual costs incurred and as we have not received an invoice relating to the annual authorisation fee since July 2017 (when invoices for 2015 and 2016 were received) the forecast costs have been returned to customers via the existing true-up mechanism. The Gas Supply Act still places an obligation on JGN to pay the annual authorisation fee determined by the Minister.

Given the benefits it has delivered to customers over the past two regulatory periods, the potential for arbitrary ECM outcomes and the importance of alignment with electricity network treatment, we see no compelling reason to change our current approach for the next regulatory period. We have therefore re-proposed licence fees as a category-specific forecast in our revised proposal.

6.2 Socialised abolishment costs

The AER's draft decision on JGN's small customer abolishment tariff is to reduce the cost-reflective tariff by 25%, bringing it down to $1,104 from $1,472 ($2025-26), and to socialise most of that cost, giving an abolishment tariff of $250 ($2025-26). The AER also suggested splitting the abolishment service into two categories: a cost-reflective temporary abolishment service for renovation or rebuild sites, and a partially socialised permanent

34 AER, *AusNet 2023-28 - Draft Decision - Attachment 6 - Operating expenditure - December 2022*, Pg. 19.

abolishment service ($250, $2025-26) to encourage households permanently leaving the network to opt for abolishment.[35]

We note that correspondence cited by the AER in its draft decision from the NSW safety regulator within the NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW) indicates that it supports the socialisation of abolishment tariffs, meaning that the AER is unlikely to change its draft decision on this matter. Therefore, although we disagree with AER's rationale for socialising a proportion of small customer connection abolishment costs across Transportation RS tariffs, we have decided to propose three charges for the abolishment service for small customers:

1. Standard Residential Connections where the request does not relate to potential construction (new partially socialised reference tariff)
2. Standard Residential Connections where the request does relate to construction (existing cost-reflective reference tariff)
3. Individually priced for all other abolishments (existing cost-reflective reference tariff).

These charges will be applied from 1 July 2026 once we have made the necessary system and process changes to enable them to be activated.

Abolishment – Standard Residential Connections partially socialised reference tariff

Our price for an abolishment of a Standard Residential Connection where there are no current or anticipated redevelopment, renovation or other construction works will be $250 in 2025-26. This new service will be partially socialised for the shortfall between $1,472 and $250 per abolishment ($2026).

Abolishment – Standard Residential Connections cost-reflective reference tariff

We will continue to offer a cost-reflective Abolishment service for a Standard Residential Connection where there are current or anticipated redevelopment, renovation or other construction works at $1,472 per meter ($2025-26) and individually priced for all other abolishments. There will be no subsidisation for this service.

Adopting AER's approach

We have adopted the AER's approach in its draft decision to calculate the forecast socialised abolishment costs. It is calculated as the product of:

- the difference in tariffs between the fully cost-reflective abolishment service ($1,435, Real $2025) and the partially socialised abolishment service ($244, Real $2025)
- forecast volume of the small customer permanent abolishment service over the 2025-30 period.

35 AER, Draft decision – JGN (NSW) access arrangement 2025 to 2030, Attachment 9 – Reference tariff setting, November 2024, p. 12.

Table 6–3 sets out the calculation of the forecast socialised abolishment costs.

Table 6–3: Forecast socialised abolishment costs ($2025)

Items	2025-26	2026-27	2027-28	2028-29	2029-30	Total
Tariff for the fully cost-reflective temporary abolishment service (A) ($)	1,435	1,435	1,435	1,435	1,435	
Tariff for the partially socialised abolishment service[36] (B) ($)	244	244	244	244	244	
Cost per abolishment to be socialised (C=A-B) ($)	1,191	1,191	1,191	1,191	1,191	
Forecast volume for the partially socialised abolishment service (D) ($)	1,513	2,283	3,051	3,809	4,547	15,203
Socialised abolishment cost (E=CxD) ($M)		2.7	3.6	4.5	5.4	16.3

Note: The socialised abolishment cost in 2025-26 is zero as the partially socialised abolishment tariff will apply from 2026-27 once the system and process changes are implemented.

Our response to other aspects of the abolishment service is provided in *JGN - RP - Att 7.1 - Abolishments – 20250115-Public*.

[36] $244 in $2025, or $250 $2026.

7. Summary of proposed revisions to Initial Proposal AA

Table 7-1: Explanation of proposed relevant revisions to the Initial Proposal AA

Clause	2020 AA reference	2025 AA reference	Summary of proposed changes
Operating expenditure efficiency carryover mechanism			
Incentive mechanism	12.1	12.1	Clause 12.1 is proposed to be amended to: • exclude from the operation of the efficiency carryover mechanism: – **any** Safeguard Mechanism and other carbon scheme costs recovered through the reference tariff variation mechanism**;** – **any abolishment service costs** included as Transportation Reference Services operating expenditure; and – **operating expenditure for supporting customers experiencing vulnerability;** • delete the exclusion for the cost of any Relevant Tax**;** • **provide that the forecast operating expenditure amounts used for measuring efficiencies are equal to the forecast approved in the AER's most recent post-tax revenue model plus any other operating expenditure approved by the AER;** • delete the table setting out the forecast operating expenditure amounts**;** • **include a new paragraph (i), providing that where JGN changes its classification of costs during the Access Arrangement Period, it must maintain the original accounting treatment of such costs for the purposes of the efficiency carryover mechanism and CESS;** • **include a new paragraph (j), providing that the approved operating expenditure for each year will be adjusted for approved pass through amounts or expenditure; and** • **include a new paragraph (k), providing that the incremental efficiency gains or losses are carried over in real dollars.**