Smoothing cost recovery when gas demand is declining

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Executive summary

We have prepared this report at the request of Jemena Gas Networks (JGN). Our report assesses the approach and reasoning that the Australian Energy Regulator (AER) has taken in its draft decision dated 29 November 2024, in which the AER decided to determine a regulatory depreciation allowance for the 2025-30 regulatory period of $542.1 million (nominal dollars).

This amount is lower than the $717.4 million (nominal dollars) regulatory depreciation allowance proposed by JGN. The AER has derived this lower amount by calculating the regulatory depreciation allowance that is consistent with a constant or zero growth rate real price path. This contrasts with the 1.5 per cent growth rate real price path that the AER previously approved for the Victorian gas distribution businesses.

In this report, we assess the AER's draft decision against JGN's proposal by reference to their respective consistency with:

- the National Gas Objective (NGO) as it relates to the long term interests of gas consumers;

- the depreciation criteria in rule 89 of the National Gas Rules (NGR), which require a depreciation schedule that promotes efficient growth in the market for reference services; and

- the revenue and pricing principles, which include that service providers should be provided with a reasonable opportunity to recover at least their efficient costs.

JGN's proposed depreciation allowance reflects not only the anticipated decline in demand for gas but also the potential shutdown of its network. Any shutdown will require JGN to incur additional costs associated with abolishment and decommissioning, which it may pass onto consumers. For completeness, we also include in this report:

- an assessment of the AER's draft decision regarding the socialisation of abolishment costs; and

- a discussion of the recovery of decommissioning costs, which the AER has not considered as part of its draft decision.

Impact of declining gas demand on distribution prices and assets

There is evidence that gas demand in New South Wales (NSW) will decline in the long term as NSW transitions towards its net zero emissions targets. This will in turn lead to declining utilisation of JGN's gas distribution network.

In the context of the AER's regulation of JGN's gas distribution network, this prospect is problematic because the current design of the 'building block' regulatory framework generates relatively smooth price profiles only in an environment where gas demand is expected either to grow or to remain stable.

The use of real straight-line depreciation in the building block framework spreads the recovery of assets evenly over time. Since gas demand is expected to decline, the building block model will generate successively higher prices for gas distribution services because it divides maximum allowed revenues by a smaller quantity of demand. In turn, successively higher prices for gas distribution services will tend to accelerate the decline in gas demand. Over time, this combination of effects is likely to cause JGN's assets to become stranded, such that the willingness to pay of remaining customers is not enough for JGN to recover its efficient costs.

To mitigate these effects on prices for gas distribution services and JGN's gas assets, JGN has proposed that it adjust its depreciation schedule to bring forward $300 million of depreciation for the 2025-30 regulatory period.

Existing regulatory framework for gas distributors

The regulatory framework that applies to gas pipelines is set out in the National Gas Law (NGL) and the NGR. Three key elements of the regulatory framework are relevant to our assessment of the AER's draft decision; the NGO, depreciation criteria, and revenue and pricing principles.

The NGO refers to the long term interests of gas consumers, which can be challenging to evaluate in circumstances where the future demand for gas is uncertain. The AER states that the uncertainty of future gas demand means the long term interests of gas consumers will be served through:

- the promotion of efficient investment in, operation and use of the gas networks; and
- the maintenance of affordable and stable (or predictable) prices for gas distribution services.

Economic principles suggest that the long term interests of gas consumers will also be served through:

- setting prices for gas distribution services that fall between avoidable and standalone cost, which ensure efficient decision-making by service providers and gas consumers;
- delaying the shut down and decommissioning date of JGN's gas distribution network, since it allows consumers to continue to benefit from use of their own and JGN's sunk assets for as long as possible;
- ensuring the energy transition is carried out in an orderly manner, including recognition of option values and minimising the probability and expected economic costs associated with a significant disruption to Australia's energy system; and
- ensuring that JGN receives sufficient cash flows to maintain gas distribution services that are safe, reliable and secure.

However, there are inherent trade-offs between goals that promote the long term interests of gas consumers in an environment where gas demand is anticipated to decline. Primary among these trade-offs are the interests of current and future gas consumers, whereby maintaining low prices for gas distribution services for one group of consumers may lead to high and unstable price outcomes for other consumers.

Further, the NGR include rules for providing investors with a return of capital that matches regulatory depreciation of the projected capital base set at the start of each regulatory period, including the depreciation criteria. The depreciation criteria do not specify a depreciation schedule, but rather require a depreciation schedule that promotes efficient growth in the market for reference services. The prospect of falling gas demand implies that negative growth in the market for reference services is efficient under the depreciation criteria, because it reflects the changing preferences of consumers and the availability of competing technologies. An adjustment to increase JGN's depreciation schedule for the 2025-30 regulatory period reflects this negative growth.

Finally, the revenue and pricing principles include the need to provide for efficient cost recovery, incentives to promote economic efficiency, and a return commensurate with the risks associated with providing reference services. Of note, the principles require JGN to have a reasonable opportunity to recover at least the efficient costs it incurs to provide services and comply with regulations. Given the current regulatory arrangements provide for (and sometimes require) JGN to make large sunk investments, the revenue and pricing principles provide for JGN to take steps to mitigate the asset stranding risks that arise from the projected decline in demand for gas distribution services.

Depreciation and the long term interests of gas consumers

Adopting a depreciation schedule that leads to a stable path for reference tariffs promotes the long term interests of gas consumers, because it:

- generates predictable signals as to the cost of gas services, which allow consumers to make efficient decisions regarding whether and when to incur substantial costs associated with gas connection, gas usage or gas disconnection; and

- maintains real prices that are relatively stable across time for current and future gas consumers.

The use of real straight-line depreciation can only give rise to these outcomes when gas demand is stable or growing. In an environment with declining gas demand, a faster upfront depreciation rate is required to deliver a stable path for reference tariffs. Such a depreciation schedule allocates the recovery of costs away from JGN's narrower base of future customers towards its broader base of current customers, resulting in a smaller difference between the real level of prices paid by current and future customers for gas distribution services.

Our analysis shows that JGN's proposal to adjust real straight-line depreciation by $300 million will smooth real prices for gas distribution services more effectively across regulatory periods than the depreciation schedule allowed by the AER's draft decision. This provides more affordable and stable prices for gas distribution services over the long term, thus promoting the long term interests of gas consumers. In particular, we expect that JGN's proposal will:

- have a greater smoothing effect on price paths for residential and commercial customers across regulatory periods between now and 2050, relative to the AER's proposal;

- more substantively reduce the price difference between current and future customers that would otherwise result from application of the real straight-line depreciation approach; and

- more substantively reduce the extent to which future customers incur higher gas bills.

We also assess the AER and JGN's respective proposed depreciation adjustments against the depreciation criteria, and find that JGN's proposal is more consistent in relative terms, which promotes the long term interests of consumers. We summarise our analysis in the table below.

Table E. 1: Relative consistency of JGN's and the AER's proposals with to the depreciation criteria

Criteria	Relative consistency	Reasoning
(1) The depreciation schedule should be designed:		
(a) so that reference tariffs will vary, over time, in a way that promotes efficient growth in the market for reference services	**JGN more consistent**	JGN's proposed depreciation adjustment better promotes efficient (negative) growth in the market by bringing forward depreciation.
(b) so that each asset or group of assets is depreciated over the economic life of that asset or group of assets	**JGN more consistent**	JGN's higher proposed depreciation amount brings it closer to depreciating the value of its assets over their economic lives, relative to the amount proposed by the AER, given use of its assets will likely cease before they reach the end of their design lives.
(c) so as to allow, as far as reasonably practicable, for adjustment reflecting changes in the expected economic life of a particular asset, or a particular group of assets	**JGN more consistent**	JGN's proposed depreciation amount better adjusts the depreciation schedule to reflect changes in the expected economic life of its assets, which will likely cease by 2050.
(d) so that (subject to the rules about capital redundancy), an asset is depreciated only once (ie that the amount by which the asset is depreciated over its economic life does not exceed the value of the asset at the time of its inclusion in the capital base (adjusted, if the accounting method approved by the AER permits, for inflation))	**JGN and AER similarly consistent**	Both JGN and the AER depreciate assets once.
(e) so as to allow for the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs	**JGN likely more consistent**	JGN's proposed depreciation adjustment provides a greater amount of cash flow relative to the AER in the near term, which is more likely to meet JGN's reasonable needs for cash flow to cover financing, non-

		capital and other costs.
(2) Compliance with subrule (1)(a) may involve deferral of a substantial proportion of the depreciation, particularly where:		
(a) the present market for pipeline services is relatively immature	**JGN more consistent**	JGN's proposed depreciation adjustment better promotes efficient (negative) growth in the market by bringing forward depreciation.
(b) the reference tariffs have been calculated on the assumption of significant market growth		
(c) the pipeline has been designed and constructed so as to accommodate future growth in demand		

Finally, the AER proposes a constant real price path, starting from the final prices in the current regulatory period. It has done so to be 'prudent' and allow 'a measured start to accelerated depreciation while maintaining price affordability for consumers'. By its approach, the AER appears to prioritise near or short term price stability for existing gas consumers. However, we find that maintaining price affordability over the short term will cause price volatility to be transferred into future periods, thus allocating risks away from the broader base of current customers onto a narrower base of future customers. Allocating risks in this manner will not promote the long term interests of gas consumers.

The AER notes that there is scope for JGN to vary its access arrangement if significant changes occur. In our opinion, there is little comfort to draw from this possibility. The impact of applying an overly conservative approach for JGN's 2025-30 regulatory period is irreversible and may lead to higher price uncertainty for consumers and regulatory costs for JGN in future. Further, the AER's draft decision provides little guidance as the justification for its proposed constant real price path, rendering unclear the basis on which JGN could establish the case for an alternative real price path if circumstances were to change.

Depreciation and the reasonable opportunity for cost recovery

Adjusting JGN's depreciation in line with its proposal will provide a reasonable opportunity for it to recover its costs as specified by the revenue and pricing principles, whilst still giving rise to a substantial risk that it will be unable to recover all of these costs.

In contrast, the AER's draft decision focuses on short term policy settings. Specifically, the AER states that it has allowed some level of accelerated depreciation in 'recognition of *early indications* that JGN may potentially face some degree of stranded asset risk in NSW' (emphasis added).

However, the focus of the NGO on the long term interests of consumers indicates that long term policy objectives should be the focal point of the AER's assessment, rather than short term indicators of policy progress towards these objectives. In particular, the AER should have greater regard to the NSW and Australian governments' legislated net zero targets by 2050, which are consistent with the updated NGO provision regarding the long term interests of gas consumers with respect to the achievement of targets by relevant jurisdictions. Any short term policy measures implemented between the time of writing and 2050 can be expected to enable the achievement of these targets.

The fact that JGN has incurred capital expenditure on assets with a design life of up to 80 years, while legislated targets will necessitate a substantial reduction or cessation in the use of gas assets within the next 25 years, is more relevant to this assessment than the presence or extent of policy measures in place at the beginning of, or over the course of, the next access arrangement period. These legislated targets effectively reduce the economic life of JGN's gas assets, so that JGN's proposed depreciation adjustment, rather than the AER's proposed depreciation allowance, provides a more reasonable opportunity for cost recovery.

In addition, we find there is no sound basis for the AER's draft decision to set a zero real price path constraint for JGN, being less than the 1.5 per cent constraint applied to gas distribution businesses in Victoria. Our reasons are three-fold. Firstly, AEMO's projections suggest that the rate of future decline in residential and commercial gas consumption will be broadly similar across NSW and Victoria. This

contradicts the AER's conclusion that the policy settings in NSW are less indicative of the reduced role for gas networks in the state. Further, the AER's assessment does not take into account the magnifying effect on the risks faced by JGN as derived from its obligation to incur capital expenditure on new gas connections for requesting customers who, thereafter, may disconnect from the network before JGN has recovered the costs of these connections.

In addition, the AER's real price growth constraint affects JGN more adversely than it does the Victorian gas distributors, because:

- JGN's rate of return on capital for the 2020-25 regulatory period is materially lower than that applied to the Victorian gas distributors, while its rate of return on capital for the 2025-30 regulatory period is materially higher than that applied to the Victorian gas distributors; and

- the AER's draft decision includes a one-off revenue adjustment that increases JGN's revenues for the 2025-30 regulatory period.

Accordingly, there is no sound basis by which the AER would set a real price growth constraint for JGN that is less than the 1.5 per cent constraint applied to gas distribution businesses in Victoria. Rather, JGN is likely to require at least a 1.5 per cent per annum real price increase in order to provide it a reasonable opportunity for cost recovery.

Although the AER has made an allowance for bringing forward depreciation, albeit to a lesser extent than that proposed by JGN, limiting the extent of action to address the higher future prices for gas distribution services faced by customers and stranded asset risk faced by JGN reduces JGN's opportunity to recover its efficient costs. This is due to the greater competition JGN will likely face through the potential electrification of gas demand as consumers' willingness to pay for gas falls concurrent with an increase in prices for gas distribution services.

Finally, two stakeholders made submissions regarding JGN's asset stranding risk. The first submits that JGN should bear the asset stranding risks associated with the projected decline in demand for gas distribution services in a similar fashion to businesses that face disruption risks in competitive markets. Such an approach does not conform with the revenue and pricing principles. Regulated businesses are prevented from enjoying the upside benefits of a rate of return on capital that exceeds the regulatory benchmark. If these businesses are also required to take on the downside risks associated with the declining demand for gas distribution businesses, then they cannot expect to recover fully their efficient costs. This is not consistent with the revenue and pricing principles that require regulated businesses be provided with a reasonable opportunity to recover at least their efficient costs.

The second stakeholder submits that JGN bears no asset stranding risk. This is incorrect. In addition to the substantial amount of JGN's capital base that remains unrecovered as at 2050 under all four scenarios considered in its modelling, JGN also bears additional asset stranding risks associated with:

- the energy transition proceeding at a faster pace than assumed in the model's four scenarios;

- a negative feedback loop in which rising prices for gas distribution services in response to falling demand trigger a further decline in demand; and

- the recovery of decommissioning costs.

Recovering shutdown costs

Declining demand for gas raises the prospect for an eventual shutdown of JGN's distribution network, which would impose additional costs on JGN, including abolishment and decommissioning costs.

The AER's draft decision considers the abolishment costs that will be imposed on consumers. Specifically, the AER's draft decision is:

- to reduce the small customer connection abolishment charge from JGN's proposed $1,472 per meter to $1,104 per meter; and

- to socialise the abolishment cost partially, such that:

  > the abolishment tariff is set at $250, which will be paid by the requesting customer; and

  > the remaining $854 abolishment charge is recovered through gas transportation tariffs, which will be socialised across JGN's remaining customers through an additional operating expenditure allowance.

In our opinion, the AER's draft decision on abolishment costs is inconsistent with the NGR and NGL. Specifically, we find that the AER's draft decision would be likely to incentivise customers to request disconnection earlier than otherwise, because the cost implications of their decisions will be imposed either on other customers, or on JGN if it cannot recover these costs from those other customers. As a result, future customers will face higher prices for gas distribution services by consequence of current customers who disconnected earlier. This is not in the long term interest of gas consumers.

The AER's draft decision on abolishment costs also reduces JGN's opportunity to recover its costs given:

- the proposed partial socialisation approach will further incentivise customers to disconnect from the network, increasing prices for gas distribution services for remaining customers and encouraging further disconnections, thereby increasing the risk JGN will not be above to recover its efficient costs; and

- the proposed abolishment charge is below JGN's avoidable cost of providing that service.

Further, the AER has not considered the implications of JGN being required to incur future decommissioning costs as demand for its gas distribution services continues to decline. These costs may be substantial and the NGR currently does not specify how these decommissioning costs, or other costs associated with the shutdown of the network, will be recovered.

However, if JGN is required to recover these costs from future customers, this will further increase the disparity of prices paid as between current and future customers. Allowing JGN to adapt the pace of depreciation of its capital base for the 2025-30 regulatory period would reduce some of this disparity in prices paid as between current and future customers.

1. Introduction

We have prepared this report at the request of Jemena Gas Networks (JGN). Our report assesses the approach and reasoning that the Australian Energy Regulator (AER) has taken in its draft decision dated 29 November 2024, in which the AER decided to determine a regulatory depreciation allowance for the 2025-30 regulatory period of $542.1 million (nominal dollars).[1]

This amount is lower than the $717.4 million (nominal dollars) regulatory depreciation allowance proposed by JGN. The AER derived this lower amount by calculating the regulatory depreciation allowance that is consistent with a constant or zero growth rate real price path.[2] This contrasts with the 1.5 per cent real price path that the AER previously approved for the Victorian gas distribution businesses.[3]

In this report, we assess the AER's draft decision against JGN's proposal by reference to their respective consistency with:

- the National Gas Objective (NGO) and depreciation criteria as they relate to the long term interests of gas consumers;[4] and

- the revenue and pricing principles, which include that service providers should be provided with a reasonable opportunity to recover at least their efficient costs.[5]

In undertaking this assessment, we refer extensively to the confidential version of JGN's 'future of gas' 2050 model, which uses the AER's standard building block cost framework to assess how end-customer gas prices compare with the cost of electrification up to 2050. The model contains four scenarios developed by JGN's expert panel, namely:[6]

- **'electric tortoise'**, where residential customers slowly electrify and industrial users transition to biomethane while hydrogen remains not commercially viable, such that the energy transition is driven by business and community investment;

- **'electric hare'**, where decarbonisation is supported by strong government policy driving electrification across industry and residential customers, with limited use of renewable fuels for hard-to-abate sectors;

- **'market hydrogen'**, where a near-term technological breakthrough driven by the market results in renewable gases becoming competitive with electrification, creating a diverse but fragmented energy mix; and

- **'big hydrogen'**, where government policy support underpins a hydrogen export economy with a renewable gas target and certification, subsidies, and tax-offsets, driving down the cost of hydrogen production.

We have focused our analysis on the 'electric tortoise' scenario, particularly since JGN's expert panel considers that this scenario has the greatest likelihood of occurring.[7]

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[1] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 4 - Regulatory depreciation*, Draft decision, November 2024, p 1.

[2] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 4 - Regulatory depreciation*, Draft decision, November 2024, pp 19-21.

[3] See: AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 4 - Regulatory depreciation*, Draft decision, November 2024, table 4.5.

[4] NGL, s 23; and NGR version 82, rule 89.

[5] NGL, s 24.

[6] See: Jemena, *Jemena Gas Networks 2025 plan*, June 2024, pp 14, 52.

[7] See: Jemena, *Jemena Gas Networks 2025 plan*, June 2024, p 14.

Furthermore, JGN's proposed depreciation allowance reflects not only the anticipated decline in demand for gas but also the potential shutdown of its network. Any shutdown will require JGN to incur additional costs associated with abolishment and decommissioning, which it may pass onto consumers. For completeness, we also include in this report:

- an assessment of the AER's draft decision on abolishment costs; and

- a discussion of the recovery of decommissioning costs, which the AER has not considered as part of its draft decision.

1.1   Context for this report

There is considerable uncertainty regarding the future of gas in New South Wales (NSW) and Australia generally as the economy transitions towards net zero emissions. The AER recognises that demand for natural gas is likely to decline gradually, which will result in higher prices for gas distribution services over time as customers disconnect from the network.[8]

This projected decline in gas demand exposes gas distributors to material asset stranding risks, whereby the prices for gas distribution services that these businesses must charge to enable full recovery of their efficient costs may exceed their customers' maximum willingness to pay.

In response to these asset stranding risks, the AER published an information paper in 2021 setting out its preliminary view that it may be appropriate to bring forward gas distributors' return of capital if there is sufficient evidence to demonstrate and quantify the pricing risk and stranded asset risk arising from demand uncertainty.[9]

In this context, JGN's proposal for the 2025-30 regulatory period includes the bringing forward of $300 million in depreciation, as compared to the AER's approach of using real straight-line depreciation.[10] JGN's proposal for faster depreciation of its assets is based on factors such as:[11]

- government policies that may affect demand for gas and gas connections in NSW and Australia;

- forecasts of customer demand and overall energy prices under four scenarios that JGN considers plausible;

- potential impacts on current and future customers and investors;

- consistency with the NGO and AER guidance; and

- assessment of the appropriate time to accelerate depreciation.

The AER's draft decision is to accept JGN's proposal to bring forward depreciation. However, the AER has decided to bring forward a lower amount of depreciation, being $156 million, as compared to JGN's proposed $300 million adjustment.[12]

This report assesses the approach and reasoning behind the AER's draft decision to bring forward JGN's return of capital by $156 million instead of $300 million, particularly by reference to its consistency with the

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[8] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 4 - Regulatory depreciation*, Draft decision, November 2024, p 11.

[9] AER, *Regulating gas pipelines under uncertainty*, Information paper, November 2021, p ix.

[10] Jemena, *Jemena Gas Networks (NSW) Ltd 2025-30 Access Arrangement Proposal, Attachment 7.3: Depreciation approach*, 28 June 2024, p 7.

[11] Jemena, *Jemena Gas Networks (NSW) Ltd 2025-30 Access Arrangement Proposal, Attachment 7.3: Depreciation approach*, 28 June 2024, pp 7-38.

[12] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 4 - Regulatory depreciation*, Draft decision, November 2024, p 1.

NGO, the depreciation criteria in rule 89 of the National Gas Rules (NGR) and the revenue and pricing principles.

1.2 Structure of this report

The remainder of our report is structured as follows:

- section 2 describes how the projected decline in gas demand in NSW leads to higher prices for gas distribution services and asset stranding risks under the 'building block' regulatory model;

- section 3 provides a high-level overview of three key elements of the regulatory framework for gas distribution businesses that are relevant to our assessment of the AER's draft decision;

- section 4 sets out our assessment regarding whether the AER's proposed depreciation adjustment of $156 million is in the long term interests of gas consumers;

- section 5 sets out our assessment regarding whether the AER's proposed depreciation adjustment of $156 million is consistent with providing JGN a reasonable opportunity to recover at least its efficient costs;

- section 6 addresses the recovery of costs associated with the potential shut down of JGN's network, including an assessment of the AER's draft decision regarding the abolishment costs and a discussion of decommissioning costs, which are not considered in the AER's draft decision;

- appendix A1 sets out projections of JGN's smoothed price paths derived from scenarios in JGN's future of gas model; and

- appendix A2 sets out projections comparing JGN's prices against estimates of customers' maximum willingness to pay.

2. Declining gas demand and distribution prices

There is evidence that gas demand in NSW will decline in the long term as NSW transitions towards its net zero emissions targets.[13] This will in turn lead to declining utilisation of JGN's gas distribution network.

In the context of the AER's regulation of JGN's gas distribution network, this prospect is problematic because the current design of the 'building block' regulatory framework generates relatively stable price profiles only in an environment where gas demand is expected either to grow or to remain stable.

The use of real straight-line depreciation in the building block framework spreads the recovery of assets evenly over time. Since gas demand is expected to decline, the building block model will generate higher prices for gas distribution services because it divides maximum allowed revenues by a smaller quantity of demand. In turn, higher prices for gas distribution services will tend to accelerate the decline in gas demand. Over time, this combination of effects is likely to cause JGN's assets to become stranded, such that the willingness to pay of remaining customers is not enough for JGN to recover its efficient costs.

To mitigate these effects on prices for gas distribution services and JGN's gas assets, JGN has proposed that it adjust its depreciation schedule to bring forward $300 million of depreciation for the 2025-30 regulatory period.

In sections 2.1 and 2.2 below we discuss:

- how demand for JGN's gas pipeline services is projected to decline due to long term policy objectives relating to the transition towards net zero; and

- how the projected decline in demand for JGN's gas pipeline services leads to higher prices for gas distribution services and potential asset stranding risks.

2.1   Demand for JGN's gas pipeline services is projected to decline

JGN identifies that its gas network faces significant challenges and uncertainties due to the ongoing transition towards a low-carbon economy.[14] These challenges arise because of consequential uncertainty of demand for JGN's gas pipeline services.

The Australian and NSW governments have committed to reducing greenhouse gas emissions, ie:

- the Australian government has legislated a target of net zero greenhouse gas emissions by 2050 and will update its 2035 target by the end of February 2025;[15] and

- the NSW government has also legislated a target of net zero emissions by 2050 and aims to cut emissions by 70 per cent by 2035 compared to 2005 levels.[16]

The Australian government published its future gas strategy in May 2024 in which it sets out its plan for gas production and consumption in Australia. The future gas strategy forecasts that gas consumption by domestic and small businesses on the east coast will decline by between 49 per cent and 72 per cent from

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[13] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 4 - Regulatory depreciation*, Draft decision, November 2024, p 11.

[14] Jemena, *Jemena Gas Networks (NSW) Ltd 2025-30 Access Arrangement Proposal*, Attachment 7.3: Depreciation approach, 28 June 2024, p 1.

[15] Department of Climate Change, Energy, the Environment and Water, https://www.dcceew.gov.au/climate-change/emissions-reduction/net-zero, accessed 3 December 2024.

[16] NSW Climate and Energy Action, https://www.energy.nsw.gov.au/nsw-plans-and-progress/government-strategies-and-frameworks/reaching-net-zero-emissions/net-zero, accessed 4 December 2024.

2023 to 2043. This decline is driven by higher rates of electrification and lower growth in new household and commercial gas connections.[17]

The NSW government will also develop a NSW gas decarbonisation roadmap in the second half of 2026 that provides clarity on gas decarbonisation and the role of gas in the future of the energy system in NSW.[18]

JGN also highlights that gas customers are becoming increasingly concerned with the environmental and social impacts of their energy use. They are seeking solutions that are more sustainable and affordable.[19]

Consistent with the above observations, the Australian Energy Market Operator (AEMO) forecasts a gradually declining trajectory for annual gas consumption across residential, commercial and industrial customers in NSW across its three scenarios.

We show AEMO's forecasts in figure 2.1 below, where it can be seen that annual gas consumption across residential, commercial and industrial customers in NSW is forecast to decline by between 24 and 30 per cent between 2024 and 2043, depending on the assumed scenario.[20]

Figure 2.1: Forecasts of residential, commercial and industrial gas consumption in New South Wales
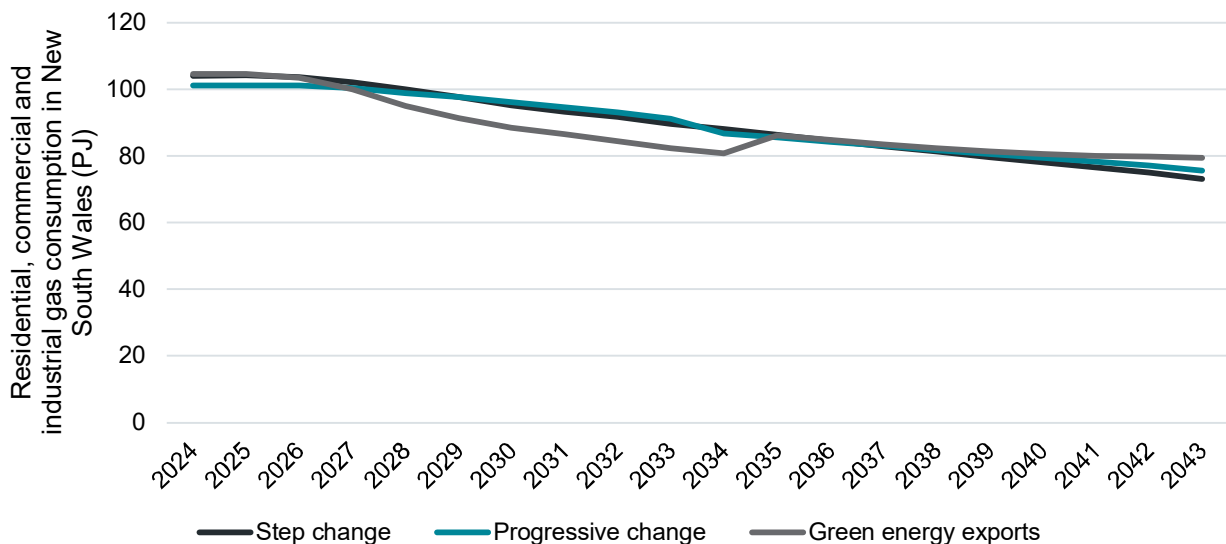
Source: AEMO, https://aemo.com.au/energy-systems/gas/gas-forecasting-and-planning/gas-forecasting-data-portal, accessed 11 December 2024.

JGN's future of gas model similarly projects that demand for its gas pipeline services will decline materially. This can be seen in figure 2.2, which shows the projected number of customers out to 2050 under the 'electric tortoise' scenario.

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[17] Australian Government, *Future gas strategy*, May 2024, pp 5, 18; and Office of the Chief Economist, *Future gas strategy*, Analytical report, May 2024, p 41.

[18] NSW Department of Climate Change, Energy, the Environment and Water, *NSW consumer energy strategy*, September 2024, pp 73, 79.

[19] Jemena, *Jemena Gas Networks (NSW) Ltd 2025-30 Access Arrangement Proposal*, Attachment 7.3: Depreciation approach, 28 June 2024, p 1.

[20] AEMO, https://aemo.com.au/energy-systems/gas/gas-forecasting-and-planning/gas-forecasting-data-portal, accessed 11 December 2024.

Figure 2.2: Number of customers sharing costs (electric tortoise scenario)
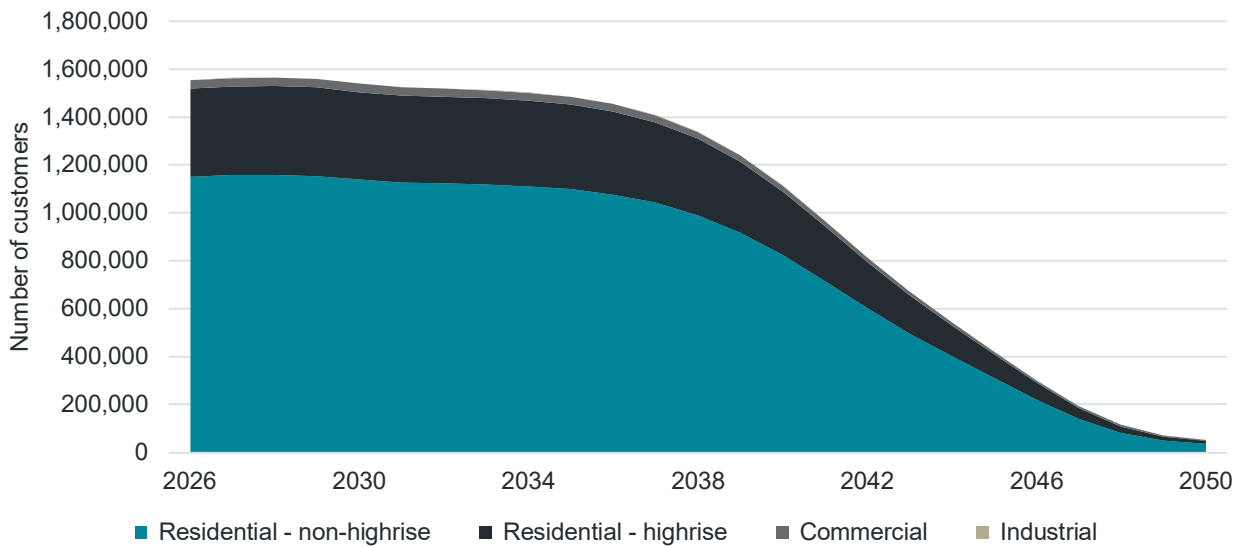
Source: Jemena, *JGN - Att 7.8M - Future of gas model - June 2024*, Spreadsheet, 28 June 2024, worksheet 'Dashboard_ET300', chart labelled 'Number of customers sharing costs'.

In figure 2.3 below we show the corresponding projected gas throughput out to 2050 under the 'electric tortoise' scenario. The figure shows that gas throughput is similarly projected to decline materially.

Figure 2.3: Gas throughput (electric tortoise scenario)
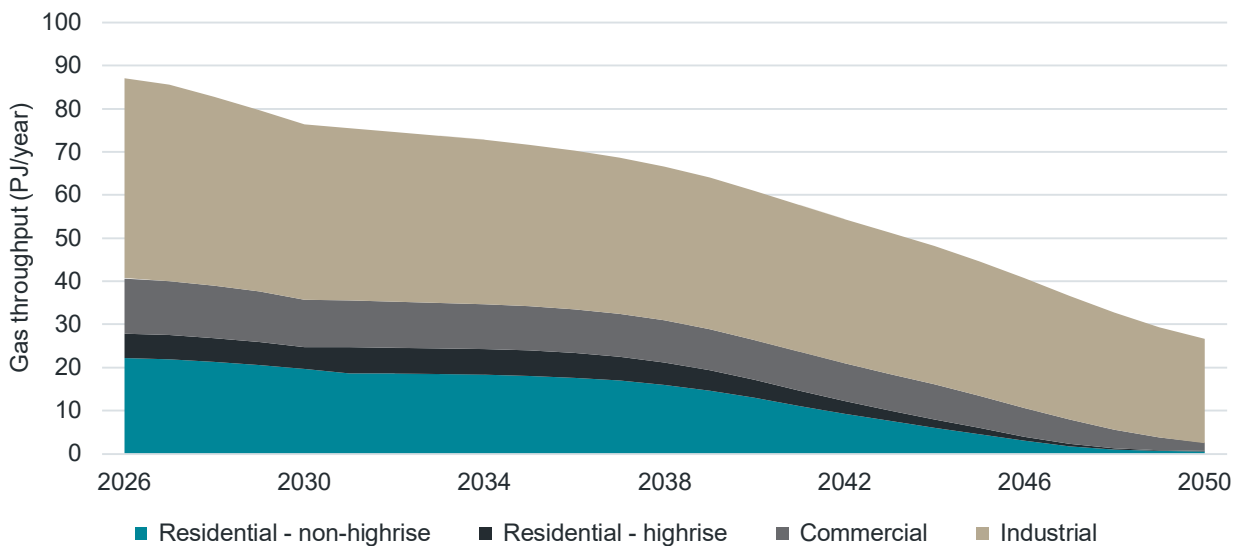
Source: Jemena, *JGN - Att 7.8M - Future of gas model - June 2024*, Spreadsheet, 28 June 2024, worksheet 'Dashboard_ET300', chart labelled 'Gas throughput'.

2.2   Falling demand leads to higher prices and risks of asset stranding

The NGR specify that JGN's total revenue for each regulatory year is to be calculated using the building block approach, consisting of:[21]

- a return on the projected capital base for the year;

- depreciation on the projected capital base for the year;

- the estimated cost of corporate income tax for the year;

- increments or decrements for the year resulting from the operation of an incentive mechanism to encourage gains in efficiency; and

- a forecast of operating expenditure for the year.

This approach is designed to allow investors to recover their sunk costs by:

- depreciating assets only once across their economic lives, thereby achieving a return of capital; and

- providing an annual return on capital allowance for undepreciated assets, ie, the value of the capital base.

The projected decline in demand for JGN's services that we describe in section 2.1 above is problematic for JGN and its customers. This is because JGN will recover its annual revenue allowance from a shrinking base of customers, potentially resulting in:

- higher prices for gas distribution services over time for those remaining gas customers on JGN's network; and

- asset stranding risks, because the aggregate willingness to pay of remaining customers may not be enough for JGN to recover its efficient costs.

We discuss these issues in sections 2.2.1 to 2.2.2 below.

2.2.1   Declining demand will substantially increase JGN's 2050 gas distribution prices

In figure 2.4 below we show the average annual network bill for JGN's residential customers under the 'electric tortoise' scenario using the AER's standard real straight-line depreciation profile. In this scenario, the average annual network bill increases from $340 in 2026 to $1,516 in 2050, ie, a 346 per cent real increase.

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[21] NGR version 82, rule 76.

Figure 2.4: Average annual network (Jemena) bill – residential (electric tortoise scenario; real straight-line depreciation)

We show in figure 2.5 below the average annual network bill for Jemena's commercial customers under the 'electric tortoise' scenario using the AER's standard real straight-line depreciation profile. In this scenario, the average annual network bill increases from $2,208 in 2026 to $13,900 in 2050, ie, 530 per cent real increase.

Figure 2.5: Average annual network (Jemena) bill – commercial (electric tortoise scenario; real straight-line depreciation)

In section 4.1 below we show how the application of a presumptive real straight-line rate of depreciation will not promote the long term interests of gas consumers in an environment with falling gas demand.

2.2.2   Declining demand creates potential asset stranding risks for JGN's distribution network

Asset stranding occurs when prices derived by reference to the applicable regulatory framework are higher than customers' maximum willingness to pay. In such a scenario, the service provider will only achieve partial recovery of its costs and some of its assets will be stranded.

In figure 2.6 below we show the end-customer gas and electricity prices for JGN's residential customers under the 'electric tortoise' scenario, based on the AER's presumptive real straight-line depreciation profile. The figure shows that the end-customer gas price is projected to be below the corresponding electricity price from 2040 onwards. From this point forward, JGN will be unable to recover its costs fully, since charging the maximum price calculated under the building block framework will incentivise JGN's customers to exit the gas network in favour of electrification.

JGN's future of gas model shows similar results for its commercial customers, except that the end-customer gas price is projected to be below the corresponding electricity price from 2047 onwards.[22]

Figure 2.6: End-customer energy price – residential (electric tortoise scenario; real straight-line depreciation)
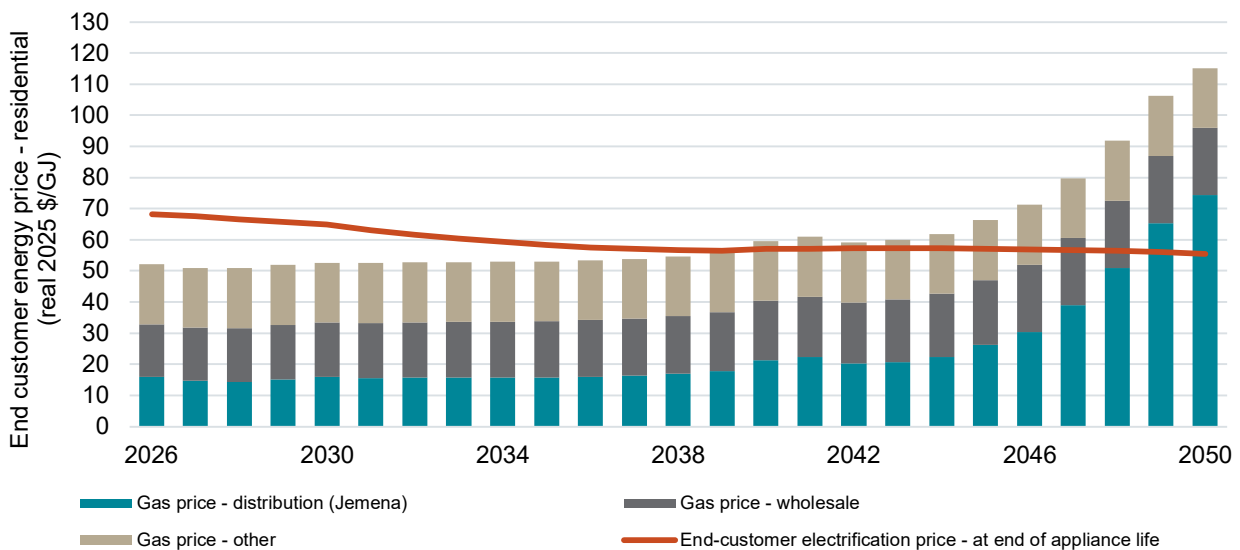
Source: Jemena, *JGN - Att 7.8M - Future of gas model - June 2024*, Spreadsheet, 28 June 2024, worksheet 'Dashboard_ET300', chart labelled 'End-customer energy price - Residential'.

In figure 2.7 below we show JGN's capital base under the 'electric tortoise' scenario using the AER's presumptive real straight-line depreciation profile. JGN projects that its capital base in 2050 will be $1.798 billion, being the amount reflecting JGN's under-recovered costs if the gas distribution network were to shut down in 2050.

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[22] See: Jemena, *JGN - Att 7.8M - Future of gas model - June 2024*, Spreadsheet, 28 June 2024, worksheet 'Dashboard_ET300', chart labelled 'End-customer energy price – Commercial'.

Figure 2.7: Capital base by investment period (electric tortoise scenario; real straight-line depreciation)
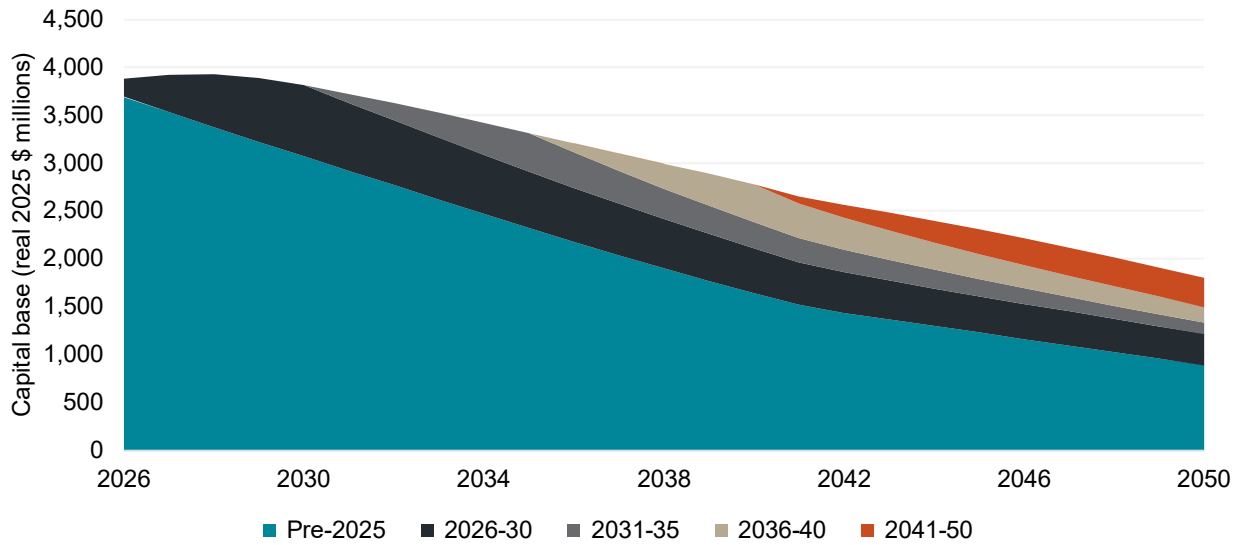
Source: Jemena, *JGN - Att 7.8M - Future of gas model - June 2024*, Spreadsheet, 28 June 2024, worksheet 'Dashboard_ET300', chart labelled 'RAB by investment period'.

3. Regulatory framework for gas distributors

The regulatory framework that applies to gas pipelines is set out in the National Gas Law (NGL) and the NGR. Three key elements of the regulatory framework are relevant to our assessment of the AER's draft decision. These comprise:

- the NGO, which refers to the long term interests of gas consumers;

- the depreciation criteria, which require a depreciation schedule that promotes efficient growth in the market for reference services; and

- the revenue and pricing principles, which include efficient cost recovery, incentives to promote economic efficiency, and allowing a commensurate return for businesses providing reference services.

We discuss these components of the regulatory framework for gas distributors in sections 3.1 to 3.3 below.

3.1   National Gas Objective

The NGL includes the NGO, which focuses on the long term interests of gas consumers, ie:[23]

> The objective of this Law is to promote efficient investment in, and efficient operation and use of, covered gas services for the long term interests of consumers of covered gas with respect to—
>
> (a) price, quality, safety, reliability and security of supply of covered gas; and
>
> (b) the achievement of targets set by a participating jurisdiction—
>
> > (i) for reducing Australia's greenhouse gas emissions; or
> >
> > (ii) that are likely to contribute to reducing Australia's greenhouse gas emissions.

Achieving the NGO is challenging in circumstances where the future demand for gas is uncertain. In sections 3.1.1 and 3.1.2 below, we discuss:

- actions that serve the long term interests of gas consumers when future demand is uncertain; and

- the trade-offs involved in promoting the long term interests of gas consumers.

3.1.1   Promoting the long term interests of gas consumers when future demand is uncertain

In its information paper published in 2021, the AER states that the uncertainty of future gas demand means the long term interests of gas consumers will be served through:[24]

- promoting the efficient investment in, operation and use of the gas networks; and

- maintaining affordable and stable (or predictable) prices for gas distribution services.

In addition to these two goals, economic principles suggest that the long term interests of gas consumers will also be served through:

- setting prices for gas distribution services that fall between avoidable and standalone cost, which ensure efficient decision-making by service providers and gas consumers;

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[23] NGL, s 23.

[24] AER, *Regulating gas pipelines under uncertainty*, Information paper, November 2021, p 29; and AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 4 - Regulatory depreciation*, Draft decision, November 2024, p 22.

- delaying the shut down and decommissioning date of JGN's gas distribution network, since it allows consumers to continue to benefit from their use of their own and JGN's sunk assets for as long as possible;

- ensuring the energy transition is carried out in an orderly manner, including recognition of option values and minimising the probability and expected economic costs associated with a significant disruption to Australia's energy system; and

- ensuring that JGN receives sufficient cash flows to maintain gas distribution services that are safe, reliable and secure.

We explain below how each of these actions will promote the long term interests of consumers under the NGO.

First, setting prices for gas distribution services that fall between avoidable and standalone cost promotes the NGO by allowing gas consumers to make efficient decisions regarding whether and when to incur substantial costs associated with gas connection, gas usage or gas disconnection. This may include decisions that involve purchasing expensive equipment that uses gas and/or potentially undertaking substantial construction works to accommodate gas supply and equipment.

Second, it is likely that some gas consumers have incurred substantial sunk capital expenditure that can only continue to be used if JGN's gas distribution network remains operational. Delaying the shut down and decommissioning date of JGN's gas distribution network thus promotes the NGO by allowing gas consumers to continue enjoying the benefits of using the sunk assets that both they and JGN have already incurred, and which have not reached the end of their technical useful lives.

Third, the AER identifies that there is considerable uncertainty regarding the role of JGN's network while Australia transitions towards net zero.[25] An orderly energy transition promotes the NGO by maintaining optionality that accounts for the range of potential paths that Australia may take as it continues to navigate the energy transition.

Put another way, gas consumers benefit from the option value associated with JGN continuing to operate its gas distribution network, since it provides them with a backup energy source in case the process of electrification ends up being slower and/or more expensive than projected. The value that gas consumers derive from this optionality may be substantial since the consequences of a significant disruption to Australia's energy system are likely to be very costly if these consumers cannot access an alternative energy source.

Finally, the AER observes that safety concerns may arise as customers leave the distribution network, such as those associated with having large numbers of unused gas connections in situ for indefinite periods.[26] It is in the long term interest of gas consumers for distributors to maintain gas distribution services that are safe, reliable and secure, and for distributors to be in receipt of sufficient cash flows to do so.

3.1.2   Trade-offs between goals promoting the long term interests of gas consumers

There are inherent trade-offs between the goals that promote the long term interests of gas consumers, particularly in an environment where gas demand is anticipated to decline.

For example, service providers have an incentive to make efficient investments only if they can expect to recover those sunk costs while receiving a return on capital commensurate with the risks associated with the investment. However, providing this incentive may result in unaffordable or volatile prices for gas distribution services if service providers are required to recover these costs from a small and declining customer base.

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[25] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 4 - Regulatory depreciation*, Draft decision, November 2024, p 11.

[26] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 9 – Reference tariff setting*, Draft decision, November 2024, p 16.

The AER has also acknowledged that gas consumers may have conflicting interests. For example, the AER states that the uncertainty in future gas demand means that it will need to balance the interests of current and future consumers.[27] The AER considers that the NGL and NGR do not limit its ability to target economically efficient outcomes in a manner that takes into account the differing implications on gas consumers.[28]

We discuss in section 4 below how asset stranding risks can be managed to promote the long term interests of consumers, consistent with the NGO.

3.2 Depreciation criteria

The building block model that we describe in section 2.2 above provides investors with a return of capital that matches regulatory depreciation of the projected capital base.[29] Rule 89 of the NGR specifies criteria for establishing the amount of depreciation, stating that:[30]

(1) The depreciation schedule should be designed:

(a) so that reference tariffs will vary, over time, in a way that promotes efficient growth in the market for reference services; and

(b) so that each asset or group of assets is depreciated over the economic life of that asset or group of assets; and

(c) so as to allow, as far as reasonably practicable, for adjustment reflecting changes in the expected economic life of a particular asset, or a particular group of assets; and

(d) so that (subject to the rules about capital redundancy), an asset is depreciated only once (ie that the amount by which the asset is depreciated over its economic life does not exceed the value of the asset at the time of its inclusion in the capital base (adjusted, if the accounting method approved by the AER permits, for inflation)); and

(e) so as to allow for the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs.

(2) Compliance with subrule (1)(a) may involve deferral of a substantial proportion of the depreciation, particularly where:

(a) the present market for pipeline services is relatively immature; and

(b) the reference tariffs have been calculated on the assumption of significant market growth; and

(c) the pipeline has been designed and constructed so as to accommodate future growth in demand.

Importantly, in the context of the AER's draft decision:

- the depreciation criteria in the NGR do not specify any particular rate or schedule of depreciation; and

- a faster rate of depreciation can be expected to promote efficient, negative growth in demand for reference gas services.

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[27] AER, *Regulating gas pipelines under uncertainty*, Information paper, November 2021, p 27.

[28] AER, *Regulating gas pipelines under uncertainty*, Information paper, November 2021, pp 58-59.

[29] The AER's standard approach for calculating regulatory depreciation is to use real straight-line depreciation less indexation of the capital base. See: AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 4 - Regulatory depreciation*, Draft decision, November 2024, p 8.

[30] NGR version 82, rule 89.

We discuss these observations in sections 3.2.1 and 3.2.2 below.

3.2.1   Depreciation criteria in the NGR do not specify a depreciation schedule

The depreciation criteria do not specify a depreciation schedule to be applied for gas distribution services.

One possible approach that would balance the long term interests of gas consumers is to choose a depreciation schedule that results in little or no real price growth over the remaining life of JGN's gas distribution network.[31] Such an approach would result in current and future consumers paying the same real price for gas distribution services, and provide stable and predictable prices to support customer investment over time.

Consistent with this principle, the AER's standard approach is to apply a real straight-line depreciation schedule with an expected economic life consistent with the period over which an asset reasonably can be expected to be in use economically.[32] However, the AER's standard approach to determining the economic life of an asset is to establish a proxy for economic life by means of the asset's design life.[33]

The AER explains that applying real straight-line depreciation allows for smooth changes in reference tariffs, in addition to satisfying the depreciation criteria in the NGR:[34]

> We consider that the straight-line method satisfies the NGR's depreciation criteria. This is because the straight-line method smooths changes in the reference tariffs, promotes efficient growth of the market, allows assets to be depreciated only once and over its economic life, and allows for a service provider's reasonable needs for cash flow.

The observation that real straight-line depreciation may not work well in all circumstances is consistent with rules 89(1)(a) and 89(2), which provide scope to defer depreciation in anticipation of significant market growth:[35]

> (1) The depreciation schedule should be designed:
>
> > (a) so that reference tariffs will vary, over time, in a way that promotes efficient growth in the market for reference services; and
> >
> > …
>
> (2) Compliance with subrule (1)(a) may involve deferral of a substantial proportion of the depreciation, particularly where:
>
> > (a) the present market for pipeline services is relatively immature; and

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[31] This approach is referred to in the ACCC's 1998 gas access determination for the Victorian Principal Transmission System, and is referred to there as the current cost accounting or CCA approach. See: ACCC, *Access Arrangement by Transmission Pipelines Australia Pty Ltd and Transmission Pipelines Australia (Assets) Pty Ltd for the Principal Transmission System, Access Arrangement by Transmission Pipelines Australia Pty Ltd and Transmission Pipelines Australia (Assets) Pty Ltd for the Western Transmission System, Access Arrangement by Victorian Energy Networks Corporation for the Principal Transmission System*, Final decision, 6 October 1998, pp 24-26.

[32] AER, *Regulating gas pipelines under uncertainty*, Information paper, November 2021, p 30.

[33] We note that departures from this standard include final decisions by the AER regarding ActewAGL and Australian Gas Networks (AGN) in Victoria and Albury, as well as the AER's draft decision for JGN for the 2025-30 regulatory period. For ActewAGL, the AER approved a variation in the remaining useful lives for some of ActewAGL's assets. See: AER, *Access arrangement proposal | ACT, Queanbeyan and Palerange gas distribution network*, Final decision, March 2010, pp 35-37. For AGN and JGN, the AER deviated from its standard approach for the two DNSP's 'future of gas' asset class. See: AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 4 - Regulatory depreciation*, Draft decision, November 2024, p 24; and AER, *Australian Gas Networks (Victoria & Albury) gas distribution access arrangement 1 July 2023 to 30 July 2028, Attachment 4: Regulatory depreciation*, Final decision, June 2023, p 13.

[34] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 4 - Regulatory depreciation*, Draft decision, November 2024, p 5.

[35] NGR version 82, rule 95(1)(a), (2).

(b) the reference tariffs have been calculated on the assumption of significant market growth; and

(c) the pipeline has been designed and constructed so as to accommodate future growth in demand.

The economic principles implicit in rules 89(1)(a) and 89(2) indicate that depreciation may be deferred if future demand is expected to increase similarly suggest that depreciation may be brought forward if future demand is expected to decline. The AER's preference for real straight-line depreciation as having some form of incumbency in its regulation of gas distribution businesses is not reflected in the NGR.

Consistent with this, the AER and the Australian Competition and Consumer Commission (ACCC) have long contemplated the potential to adjust service providers' depreciation schedules in response to the risk of significant demand reductions. For example, the ACCC stated in a decision published in 1998 that:[36]

If such a risk is significant the preferred method of compensation would be by the introduction of a faster rate of economic depreciation.

We explore this principle further in section 3.2.2 below.

3.2.2 Faster depreciation promotes efficient negative growth in demand

The AER currently uses the term 'accelerated depreciation' to describe a depreciation schedule with a faster rate of depreciation compared to a real straight-line path. Consistent with our discussion in section 3.2.1 above, the term 'accelerated depreciation' conveys an inaccurate presumption of incumbency for the AER's real straight-line depreciation approach. Instead of establishing real straight-line depreciation as a starting point, rules 89(1)(a) and 89(2) require that the AER's starting point should be the depreciation schedule that results in reference tariffs that promote efficient growth in the market for reference services.

Falling gas demand means that negative growth in the market for reference services is efficient under the depreciation criteria in rule 89(1)(a), since it reflects the changing preferences of consumers and the availability of competing technologies.

Adjusting JGN's depreciation schedule to achieve a faster rate of economic depreciation over the 2025-30 regulatory period promotes efficient negative growth in two ways. First, adjusting JGN's depreciation schedule would allow gas to remain competitive on price with other energy sources for a longer period, potentially delaying the closure of the gas network and thereby facilitating a more orderly energy transition. This would allow more customers to continue to benefit from use of their own sunk network assets as well as those owned by JGN.

Second, as the AER explains, adjusting service providers' depreciation schedules would mitigate potential price increases in the future, in turn encouraging fewer customers to leave gas networks overall.[37] The combination of shrinking demand and a high level of unrecovered sunk costs for JGN's gas distribution network suggests that bringing forward cost recovery, ie, increasing JGN's revenues and prices for the 2025-30 regulatory period while reducing revenues and prices in subsequent regulatory periods, may encourage fewer customers overall to leave the gas network.

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[36] ACCC, *Access Arrangement by Transmission Pipelines Australia Pty Ltd and Transmission Pipelines Australia (Assets) Pty Ltd for the Principal Transmission System, Access Arrangement by Transmission Pipelines Australia Pty Ltd and Transmission Pipelines Australia (Assets) Pty Ltd for the Western Transmission System, Access Arrangement by Victorian Energy Networks Corporation for the Principal Transmission System*, Final decision, 6 October 1998, footnote 104.

[37] AER, *Regulating gas pipelines under uncertainty*, Information paper, November 2021, p 31.

This effect arises because:

- a shift in revenue over time will result in a smaller change in gas prices in 2025-30 when JGN's customer base is relatively large, compared to a larger effect on gas prices in the future when the revenue increase is applied in subsequent periods once JGN's customer base has shrunk; and

- JGN's customer base is likely to become more price sensitive over time as electricity becomes a more competitive substitute for gas across a wider range of potential uses.[38]

3.3 Revenue and pricing principles

The NGL specifies a set of revenue and pricing principles that apply to pipeline services provided by full regulation pipelines. These revenue and pricing principles include that:[39]

- a 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 or making a regulatory payment;

- a service provider should be provided with effective incentives in order to promote economic efficiency with respect to reference services the service provider provides;

- regard should be had to the capital base adopted for a pipeline in previous access arrangement decisions or in the NGR;

- a reference tariff should allow for a return commensurate with the regulatory and commercial risks involved in providing the reference service to which that tariff relates; and

- regard should be had to the economic costs and risks of the potential for under and over investment and for under and over utilisation of a pipeline with which a service provides pipeline services.

The NGR also specify that full regulation pipelines must adhere to the revenue and pricing principles when:

- allocating between reference and other services on a basis determined or approved by the AER;[40] and

- including an incentive mechanism in their access arrangements.[41]

The AER must take the revenue and pricing principles into account when exercising its discretion in approving or making those parts of an access arrangement relating to a reference tariff.[42] In addition, the revenue and pricing principles are a relevant consideration for an adjudicator determining access disputes for scheme pipelines.[43]

Importantly in the context of the AER's draft decision:

- the revenue and pricing principles require JGN to have a reasonable opportunity to recover at least its efficient costs;

- the regulatory arrangements provide for and sometimes require JGN to make large sunk investments; and

- the revenue and pricing principles allow JGN to take steps to mitigate the asset stranding risks.

We discuss these considerations in sections 3.3.1 to 3.3.3 below.

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[38] AER, *Regulating gas pipelines under uncertainty*, Information paper, November 2021, p 31.

[39] NGL, s 24.

[40] NGR version 82, rule 93(2)(c).

[41] NGR version 82, rule 98(3).

[42] NGL, s 28(2)(a)(i).

[43] NGR version 82, rule 113Y(2)(b); and NGL, s 162.

3.3.1   JGN should have a reasonable opportunity to recover at least its efficient costs

We describe above that the revenue and pricing principles set out in the NGL include that service providers should have a 'reasonable opportunity' to recover at least their efficient costs:[44]

> A scheme pipeline service provider should be provided with a reasonable opportunity to recover at least the efficient costs the service provider incurs in—
>
> (a) providing reference services; and
>
> (b) complying with a regulatory obligation or requirement or making a regulatory payment.

The AER considers that this principle does not equate to a guarantee of cost recovery:[45]

> In our view, **the NGL guiding revenue and pricing principle that regulated businesses should be provided with a *reasonable opportunity* to recover at least the efficient costs they incurred in providing services does not mean gas consumers must guarantee that the regulated businesses recover their costs under any circumstances. That is, regulatory depreciation or risk compensation cannot be adjusted without constraint to guarantee cost recovery for the regulated businesses.** We must have regard to consumers' interest in having affordable and stable or reasonably predictable gas access prices to encourage their use of the gas infrastructure. Having said that, it is fair to note that regulated businesses also have an interest to maintain price affordability to avoid further decline in gas customer numbers. (emphasis added)

Instead, the AER explains in its 2021 information paper that it may be desirable to expose regulated businesses to some stranded asset risk, although the AER also notes that doing so may:[46]

- distort regulated businesses' incentives to make new investments to meet service obligations for existing consumers; or

- increase the overall costs of service.

Consistent with this view, the AER considers that its decision to adjust JGN's depreciation schedule by $156 million reflects the current level of stranded asset risk and allows for better sharing of risks between JGN and its current customer base.[47]

3.3.2   Arrangements reflect that JGN may be required to make large sunk investments

JGN's regulatory framework differs from competitive markets in that it involves arrangements to ensure regulated service providers have an incentive to make large sunk investments.

In particular, the AER explains in its 2016 decision for Australian Gas Networks that the 'regulatory compact' involves allowing regulated service providers to earn a return on partially utilised assets to incentivise them to incur the large sunk costs required to provide the regulated services:[48]

> However, we note that some stakeholders have submitted that not compensating businesses for stranded assets would be consistent with what happens in competitive markets when assets become stranded. **While the regulatory framework allows service providers certain benefits that may not be available in competitive markets (such as being allowed a return on assets that may only be partially utilised), such benefits are traded off so that service providers**

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[44] NGL, s 24(2).

[45] AER, *Regulating gas pipelines under uncertainty*, Information paper, November 2021, p 29.

[46] AER, *Regulating gas pipelines under uncertainty*, Information paper, November 2021, p 28.

[47] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 4 - Regulatory depreciation*, Draft decision, November 2024, pp 10-11.

[48] AER, *Australian Gas Networks Access Arrangement 2016 to 2021, Attachment 5 – Regulatory depreciation*, Final decision, May 2016, p 40.

are willing to make large sunk investments in the first place. That is, such benefits are part of the 'regulatory compact' as some economists have labelled it. (emphasis added)

As such, the regulatory arrangements provides for (and sometimes requires) JGN to make large sunk investments, on the basis it will recover these costs in accordance with the revenue and pricing principles.

3.3.3   Revenue and pricing principles allow JGN to take steps to mitigate the asset stranding risks

The regulatory arrangements to which we refer above also involves limiting the rate of return that regulated businesses can achieve in exchange for higher certainty of returns.[49] Put another way, since service provider businesses are prevented from enjoying the upside benefits from receiving a rate of return on capital that exceeds the regulatory benchmark, the regulatory framework must also shield those service providers from the corresponding downside risks.

Unless this were the case, then regulated businesses would not have an expectation of being able to recover their efficient costs in full, since they will be required to take on all downside risks without receiving the potential upside. This in turn would contradict the revenue and pricing principles that state regulated businesses should be provided with a reasonable opportunity to recover at least their efficient costs.

On these considerations, the revenue and pricing principles provide for JGN to take steps to mitigate the asset stranding risks that arise from the projected decline in demand for gas distribution services, and to recover the efficient costs that it incurs when taking such steps.

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[49] See: New Zealand government gas infrastructure future working group, *NZ gas infrastructure future*, Findings report, 13 August 2021, p 49.

4. Long term interests of gas consumers

Adopting a depreciation schedule that leads to a stable path for reference tariffs promotes the long term interests of gas consumers. However, real straight-line depreciation only gives rise to these outcomes when gas demand is stable or growing. In an environment with declining gas demand, a faster upfront depreciation rate is required to deliver a stable path for reference tariffs.

In this section we assess whether the depreciation schedule in the AER's draft decision, as compared to JGN's proposal, promotes the long term interests of gas consumers with reference to the NGO and depreciation criteria.

In sections 4.1 to 4.4 below we show that:

- the AER's standard real straight-line depreciation does not promote the long term interests of gas consumers when demand is declining;
- JGN's adjusted depreciation smooths future prices more effectively;
- JGN's adjusted depreciation better aligns with the depreciation criteria to the benefit of consumers; and
- the AER's proposed short-term price affordability causes long-term price instability.

4.1   Real straight-line depreciation unsuitable for declining demand

Adopting a depreciation schedule that leads to a stable path for reference tariffs promotes the long term interests of gas consumers because it:

- generates predictable signals as to the cost of gas services, which allows consumers to make efficient decisions regarding whether and when to incur substantial costs associated with gas connection, gas usage or gas disconnection; and
- maintains real prices that are relatively stable across time for current and future gas consumers.

Real straight-line depreciation gives rise to stable reference tariffs in an environment with stable or growing demand. This is consistent with the AER's observation that the legal and regulatory framework for gas networks was conceptualised assuming that future gas demand would be growing or steady.[50] In these circumstances, the use of real straight-line depreciation is also consistent with the NGO, in that reference tariffs that are stable and predictable allow consumers to make efficient decisions regarding whether and when to incur substantial costs associated with gas connection, gas disconnection or gas usage, such as purchasing expensive equipment that uses gas and/or undertaking substantial construction works to accommodate gas supply and equipment.

However, real straight-line depreciation may not be in the long term interests of gas consumers in other circumstances because achieving stable prices requires service providers to recover relatively higher revenues when demand is high, and relatively lower revenues when demand is low.

In the present environment, where gas demand is anticipated to decline, real straight-line depreciation:

- tends to give rise to sharp upward changes in reference tariffs, which will mean that consumers are less able to make efficient decisions regarding gas connection, gas usage or gas disconnection;

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[50] AER, *Regulating gas pipelines under uncertainty*, Information paper, November 2021, p 1.

- allocates disproportionate costs to future consumers,[51] thus requiring a subset of future consumers to pay materially higher prices than other consumers, including current customers;

- risks creating a negative feedback loop in which prices rise in response to falling demand, in turn causing more customers to cancel their connections and leading to even higher prices for remaining consumers; and

- risks causing a disorderly energy transition, which may occur if there was a delay in building up sufficient electricity infrastructure to serve the desired shift to electrification, but consumers no longer have access to JGN's gas distribution network as an alternative energy source after the network has shut down.

In an environment with declining demand, real straight-line depreciation will not generate stable and predictable reference tariffs over the remaining life of JGN's gas distribution network. Instead, it is necessary to adopt a depreciation schedule with a significantly faster rate of economic depreciation. It follows that adjusting JGN's depreciation schedule to provide a faster return of capital is in the long term interest of gas consumers, who will benefit from smoother changes in reference tariffs over the long term.

The AER recognises this phenomenon, with its draft decision to allow for a depreciation adjustment of $156 million. However, we find that JGN's proposed, more substantial depreciation adjustment better smooths future prices over the long term and better aligns with the depreciation criteria, while the AER's draft decision will give rise to long term price instability. We discuss these points in the sections below.

4.2   JGN's adjusted depreciation smooths future prices more effectively

In the context of adjusting depreciation schedules in response to asset stranding risks, the AER states that shortening the lives of existing assets may be construed as contrary to the long term interests of gas consumers if the resulting benefits for consumers are not demonstrated.[52] However, a key benefit for gas consumers arising from adjusting JGN's depreciation schedule is smoother future prices.

We explain in section 1.1 that JGN's regulatory proposal for the 2025-30 regulatory period proposes to bring forward recovery of depreciation by $300 million (ie, 'JGN's proposed depreciation amount') as compared to the adoption of real straight-line depreciation. The AER's draft decision is to accept JGN's proposal to bring forward depreciation at a lower amount of $156 million (ie, 'the AER's proposed depreciation amount').

Although the AER's proposed depreciation amount will generate more stable future real prices for gas distribution services than would arise under use of unadjusted, real straight-line depreciation, JGN's proposed depreciation amount will smooth prices more effectively across regulatory periods. This would ensure that prices for gas distribution services are more affordable and stable over time, which is in the long term interest of gas consumers.

In section 2.2.2, we show that the price for gas distribution services paid by residential customers, which contributes toward the end-customer energy price, will increase over time under the relatively more likely 'electric tortoise' scenario (see figure 2.6). This price trajectory does not take into account the smoothing that is applied to each regulatory period to determine a stable path for reference tariffs.

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[51] In section 3.3.2, we explain that the regulatory framework for gas pipelines involves allowing regulated service providers to earn a return on partially utilised assets to incentivise them to incur the large sunk costs required to provide the regulated services.

[52] AER, *Regulating gas pipelines under uncertainty*, Information paper, November 2021, pp 30-31.

In figure 4.1, we show the smoothed price paths for gas distribution services for JGN's residential customers in each future regulatory period between 2026 and 2050 under the 'electric tortoise' scenario using three different depreciation approaches, ie:[53],[54]

- real straight-line depreciation (blue line);
- AER's proposed depreciation amount (grey line); and
- JGN's proposed depreciation amount (orange line).

Figure 4.1: Distribution price paths for residential customers by regulatory period, 2025-26 to 2049-50 (electric tortoise scenario)
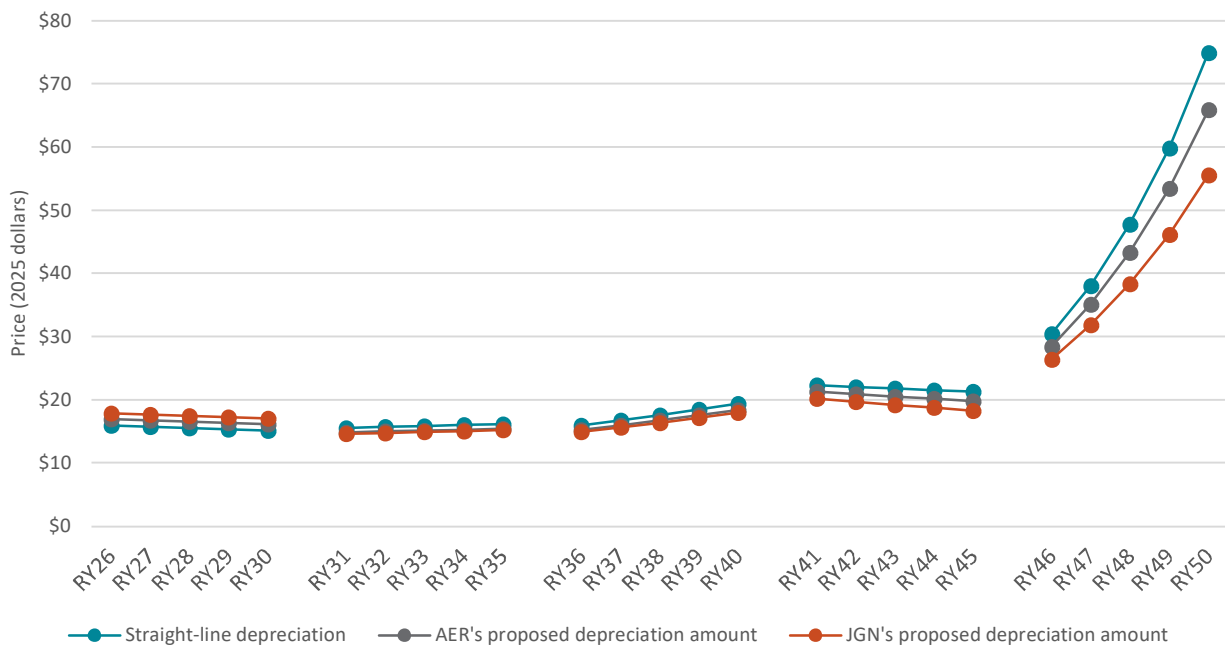
Source: HoustonKemp analysis of Jemena's future of gas model.

The AER's proposed depreciation amount involves some smoothing of future real prices under the 'electric tortoise' scenario in figure 4.1. Put another way, the AER's proposed depreciation amount incrementally flattens the price paths across regulatory periods such that prices are more level over time. This is particularly evident for the 2045-50 regulatory period. However, the smoothing effect resulting from JGN's proposed depreciation amount is more pronounced during the same period, as indicated by the relatively lower price path gradient and much lower price over 2045-50.[55]

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[53] To calculate the smoothed prices for each regulatory period, we start with the unsmoothed price for the first year derived using the building block model. We then determine a constant price growth rate that, when applied over the regulatory period, will yield the same total revenue in net present value (NPV) terms as the unsmoothed building block model prices. Put another way, price smoothing achieves a constant growth rate that ensures the NPV of revenue under the smoothed price path equals the NPV of revenue under the original building block model for the given regulatory period.

[54] We note that JGN's future of gas model incorporates a static rather than dynamic demand forecast. As such, it does not account for the demand elasticity that would prompt the negative feedback loop we refer to in this report.

[55] We note that the total amount of accelerated depreciation required for the upcoming regulatory period under the 'electric tortoise' scenario is approximately $2.4 billion. See: Jemena, *JGN - Att 7.8M - Future of gas model - June 2024*, Spreadsheet, 28 June 2024, worksheet 'Output|Stranding risk and AD', section labelled 'Section 4.1: Accelerated depreciation required and proposed in RY26-30'.

Figure 4.2 shows similar results for JGN's commercial customers, with JGN's proposed depreciation amount resulting in a flatter series of price paths relative to the AER's proposed depreciation amount.

Figure 4.2: Distribution price paths for commercial customers by regulatory period, 2025-26 to 2049-50 (electric tortoise scenario)
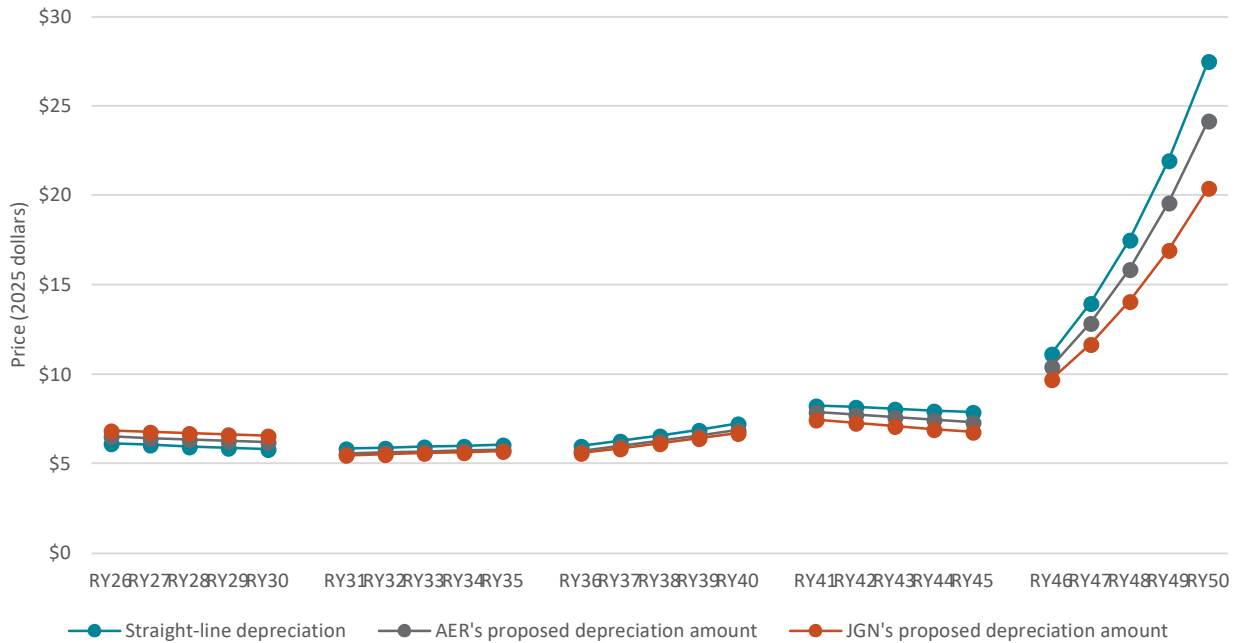
Source: HoustonKemp analysis of Jemena's future of gas model.

The relatively greater smoothing effect of JGN's proposed depreciation amount under the 'electric tortoise' scenario across all future regulatory periods are demonstrated more clearly in figure 4.3 below. Figure 4.3 plots the percentage difference between the smoothed prices for JGN's residential and commercial customers under the AER's proposed depreciation amount and JGN's proposed depreciation amount, as against the real straight-line depreciation approach. Under this plausible future scenario, JGN's proposed depreciation amount demonstrates a greater smoothing effect as indicated by the greater percentage difference in absolute terms compared to the AER's proposed depreciation amount, which increases in magnitude until 2050.[56]

Our analysis shows similar results under the second most likely future scenario, the 'electric hare' scenario, which we set out in appendix A1 below.[57]

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[56] This smoothing effect is also clearer for this scenario when plotting the price paths for all future regulatory periods, excluding the 2026 to 2050 regulatory period. We show this for residential customers in Figure A.1 and for commercial customers in Figure A.2, reported in annexure A1.

[57] We show the smoothed price paths for each regulatory period under the 'electric hare' scenario using each depreciation approach for residential customers in Figure A.3 and for commercial customers in Figure A.4. The percentage difference in distribution price paths for the AER's and JGR's proposed depreciation allowances, incremental to real straight-line depreciation, for both residential and commercial customers is shown in Figure A.5. These figures are reported in annexure A1.

Figure 4.3: Distribution price paths under alternative adjusted depreciation approaches, percentage increment to real straight-line depreciation (electric tortoise scenario)
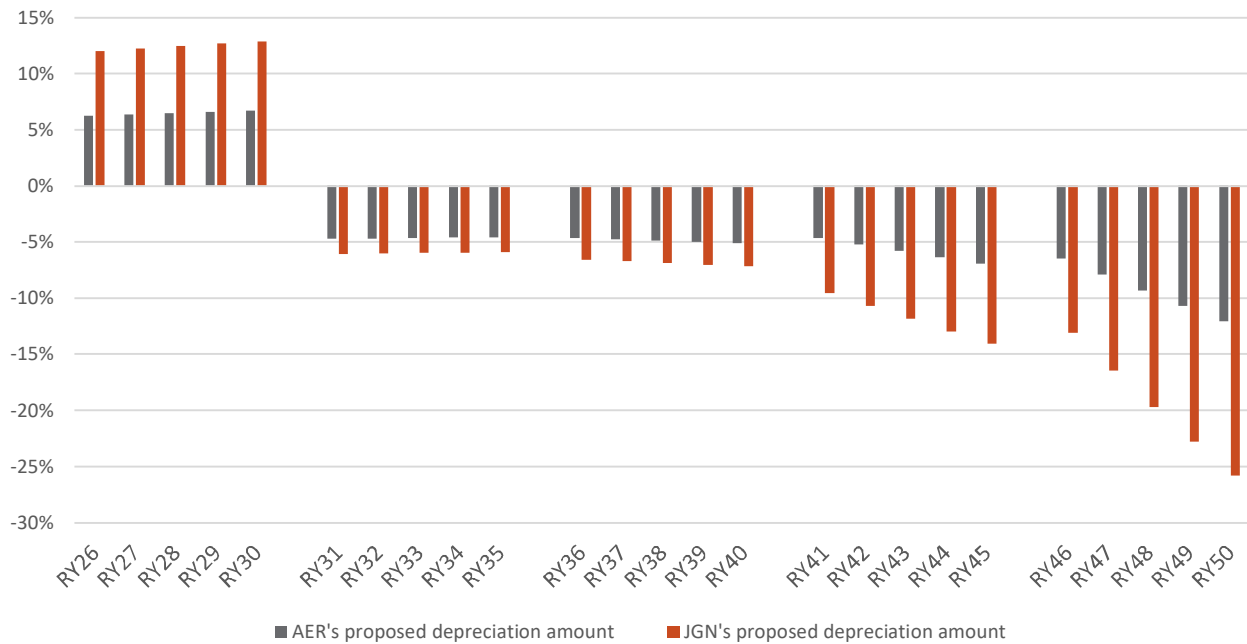
Note: Price differences are the same for residential and commercial customers under both electrification scenarios. Source: HoustonKemp analysis of Jemena's future of gas model.

The smoother price path resulting from JGN's proposed depreciation amount will also reduce the substantial difference in prices paid for gas network services as between current and future customers resulting from the real straight-line depreciation approach. In table 4.1 below, we show the percentage difference between current customer prices and smoothed prices forecast for the final year of all future regulatory periods between 2035 and 2050 for each customer and depreciation approach, under the 'electric tortoise' scenario.

Table 4.1: Difference between current customer prices and smoothed prices in future regulatory years (electric tortoise scenario)

Customer	Current price (2025 dollars)	Depreciation approach	Difference between current and future prices			
			RY35	RY40	RY45	RY50
Residential	$15.83	Real straight-line	2%	22%	34%	373%
		AER's proposed depreciation	-3%	16%	25%	316%
		JGN's proposed depreciation	-4%	13%	15%	251%
Commercial	$6.10	Real straight-line	-1%	19%	29%	351%
		AER's proposed depreciation	-5%	12%	20%	296%
		JGN's proposed depreciation	-7%	10%	11%	235%

Source: HoustonKemp analysis of Jemena's future of gas model.

The analysis we present in table 4.1 shows that applying real straight-line depreciation will result in increasingly higher prices for JGN's customers across future regulatory years relative to the current price, with the exception of commercial customers earlier in 2034-35. For instance, residential customers will pay a future real price in 2034-35 that is two per cent higher than the current price of $15.83 per GJ. By 2049-50, they will pay a price that is 373 per cent higher.

Conversely, in regulatory years where customers face higher future prices under the real straight-line depreciation approach, applying a faster rate of depreciation will result in a lower future price and, as such, a reduced difference between future and current prices relative to the real straight-line depreciation approach. For these years, JGN's proposed depreciation amount is expected to deliver a further reduced price difference relative to the AER's proposal.

For example, residential customers will pay a real price in 2039-40 that is 13 per cent higher than the current price with JGN's proposed depreciation amount, which is:

- three percentage points lower than the 16 per cent price increase resulting from the AER's proposed depreciation amount; and

- nine percentage points lower than the 22 per cent price increase using real straight-line depreciation.

By 2049-50, residential customers will pay a real price that is 251 per cent higher than the current price with JGN's proposed depreciation amount, which is:

- 65 percentage points lower than the 316 per cent price increase resulting from the AER's proposed depreciation amount; and

- 122 percentage points lower than the 373 per cent increase using real straight-line depreciation.

The analysis we present in table 4.1 shows similar findings for commercial customers.

It is important to note that, even after applying JGN's proposed depreciation amount, future customers will still pay a higher price to access gas relative to current prices, particularly in the five years to 2050. However, the adoption of JGN's proposed depreciation amount will reduce the extent of this price increase for the smaller pool of JGN customers using the network in the next 20 to 25 years and, by extension, reduce the extent to which these consumers incur higher gas bills.

We show in figure 4.4 that JGN's proposed depreciation amount will reduce the extent of the expected increase in the average annual bills for residential customers in the ten years to 2050. However, residential customers remaining on the network in the final regulatory period to 2050 will still incur considerably higher annual bills on average, more than double the current average of approximately $300 per GJ. We draw similar conclusions for commercial customers.[58]

Figure 4.4: Average annual residential customer bill using smoothed prices (electric tortoise scenario)
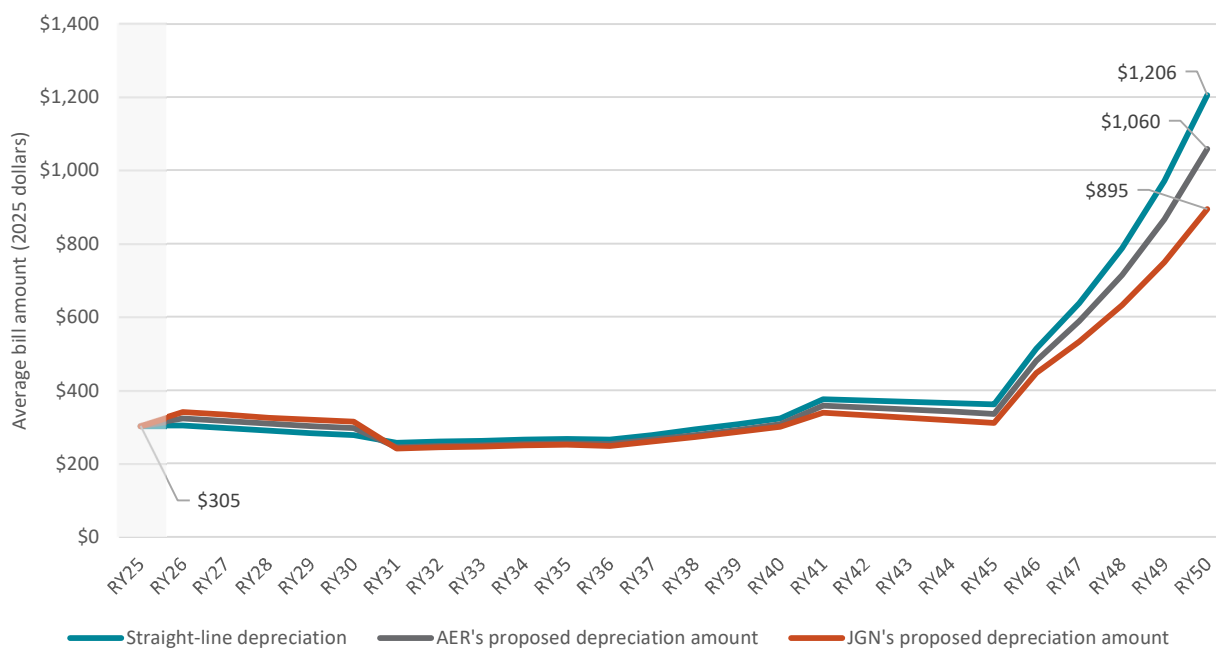
Note: We calculate the average annual residential customer bill for each year by multiplying the smoothed prices by the average of JGN's forecast consumption for residential customers in each regulatory year.
Source: HoustonKemp analysis of Jemena's future of gas model.

4.3   JGN's proposal better aligns with the depreciation criteria

We explain in section 3.2 that the NGR includes a provision for depreciation criteria under rule 89. These criteria take into consideration:

- efficient growth in the market for reference services, ie, rule 89(1)(a) and 89(2);

- the economic life of a given asset, ie, rule 89(1)(b) and 89(1)(c);

- limitations on the amount by which an asset is depreciated over its economic life, ie, rule 89(1)(d); and

- allowing for a service provider's reasonable cash flow needs to meet financing, non-capital and other costs, ie, rule 89(1)(e).

In this section we assess the consistency of JGN's proposed depreciation amount relative to the AER's proposed depreciation amount, against the depreciation criteria. We find that JGN's proposed depreciation amount is more consistent with the depreciation criteria than the AER's proposed amount, and summarise our reasoning in table 4.2 below.

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[58] We show the average annual commercial customer bill using smoothed prices under the 'electric tortoise' scenario in Figure A.6 in annexure A1.

Table 4.2: Relative consistency of JGN's and the AER's proposals with the depreciation criteria

Criteria	Relative consistency	Reasoning
(1) The depreciation schedule should be designed:		
(a) so that reference tariffs will vary, over time, in a way that promotes efficient growth in the market for reference services	**JGN more consistent**	JGN's proposed depreciation adjustment better promotes efficient (negative) growth in the market by bringing forward more depreciation.
(b) so that each asset or group of assets is depreciated over the economic life of that asset or group of assets	**JGN more consistent**	JGN's higher proposed depreciation amount brings it closer to depreciating the value of its assets over their economic lives relative to the amount proposed by the AER, given use of their assets will likely cease before they reach the end of their design lives
(c) so as to allow, as far as reasonably practicable, for adjustment reflecting changes in the expected economic life of a particular asset, or a particular group of assets	**JGN more consistent**	JGN's proposed depreciation amount better adjusts the depreciation schedule to reflect changes in the expected economic life of its assets, which will likely cease by 2050.
(d) so that (subject to the rules about capital redundancy), an asset is depreciated only once (ie that the amount by which the asset is depreciated over its economic life does not exceed the value of the asset at the time of its inclusion in the capital base (adjusted, if the accounting method approved by the AER permits, for inflation))	**JGN and AER similarly consistent**	Both JGN and the AER depreciate assets once.
(e) so as to allow for the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs	**JGN likely more consistent**	JGN's proposed depreciation adjustment provides a greater amount of cash flow relative to the AER in the near term which is more likely to meet JGN's reasonable needs for cash flow to cover financing, non-capital and other costs.
(2) Compliance with subrule (1)(a) may involve deferral of a substantial proportion of the depreciation, particularly where:		
(a) the present market for pipeline services is relatively immature	**JGN more consistent**	JGN's proposed depreciation adjustment better promotes efficient (negative) growth in the market by bringing forward more depreciation.
(b) the reference tariffs have been calculated on the assumption of significant market growth		
(c) the pipeline has been designed and constructed so as to accommodate future growth in demand		

4.3.1   Efficient growth in the market for reference services

We explain in section 3.2.2 that the economic principles implicit in rules 89(1)(a) and 89(2) of the NGR, which indicate that depreciation may be deferred if future demand is expected to increase, similarly suggest that depreciation may be brought forward if future demand is expected to decline. Accordingly, adjusting JGN's depreciation schedule to achieve a faster rate of economic depreciation over the 2025-30 regulatory period promotes efficient negative growth.

When, compared to the AER's draft decision, we find that JGN's faster rate of depreciation better promotes efficient negative growth in the market in two ways. First, as we explain in section 4.2 above, JGN's faster rate of depreciation smooths future prices more effectively. This greater smoothing better mitigates the price increases in future, in turn encouraging fewer customers to leave gas networks overall or a more gradual decline in consumers using JGN's network. Second, JGN's faster rate of depreciation may allow JGN to remain competitive on price with other energy sources for longer, relative to the AER's proposal.

Both of these outcomes are in the long term interests of consumers. Specifically, these eventualities would delay the closure of the gas network, thereby facilitating a more orderly energy transition and allowing consumers more time to use their own assets as well as those operated by JGN.

Relatedly, a delay to the closure of the gas network would also be supported by JGN's proposed $80.8 million investment in renewable gas projects.[59] These investments may extend the life of JGN's pipelines and are expected to reduce customer emissions by 0.35 MtCO$_2$e per year and decarbonise 8.3 per cent of the gas that JGN transports,[60] which would promote the long term interests of consumers who remain on JGN's network.

4.3.2   Economic life of a given asset

Rules 89(1)(b) and 89(1)(c) of the depreciation criteria both refer to the economic life of the asset.

Rule 89(1)(b) provides that each asset or group of assets is to be depreciated over the economic life of that asset or group of assets. Given the use of JGN's assets will likely cease before they reach the end of their design lives, JGN's higher proposed depreciation amount brings it closer to depreciating the value of its assets over their economic lives, relative to the amount proposed by the AER. Put another way, JGN's higher proposed depreciation adjustment is likely to result in less unrecovered asset value compared to the AER's proposed depreciation adjustment, given the likely shorter life of its assets. Consequently, JGN is relatively more consistent on this criterion.

Further, rule 89(1)(c) allows for adjustments such as faster rates of depreciation that reflect changes in the expected economic life of a particular asset, or a particular group of assets. As we explain in section 3.2.1 above, the economic life of JGN's assets is proxied by their design life. However, these assets will likely cease operations by 2050 under the relatively more likely 'electric tortoise' scenario, resulting in useful lives that are shorter than their design life and necessitating a faster rate of depreciation. Under this scenario, JGN would need to bring forward $2.38 billion in depreciation to recover its sunk assets over a shorter useful life.

It follows that JGN's faster rate of depreciation (ie, $300 million) relative to that proposed by the AER (ie, $156 million) better reflects the expected reduction in the economic life of JGN's assets, because it fast tracks a relatively larger amount of depreciation to be paid by a larger customer base. In doing so, JGN allocates risk away from a smaller base of future customers to a broader base of current customer base, which is in the long term interests of consumers.

4.3.3   Limitations on the amount by which an asset is depreciated over its economic life

Rule 89(d) of the depreciation criteria provides that an asset be depreciated only once, subject to capital redundancy rules, such that the amount by which an asset is depreciated over its economic life does not exceed the value of the asset at the time of its inclusion in the capital base.

JGN's and the AER's proposed depreciation amounts both meet this criterion and are therefore similarly consistent. Both proposals are in the long term interests of consumers, since they each ensure that no more than the initial value of an asset is recovered from consumers.

4.3.4   Allowing for reasonable cash flow needs to meet financing, non-capital and other costs

Finally, rule (1)(e) allows for the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs.

JGN explains in its proposal that the application of real straight-line depreciation to derive prices for gas distribution services will likely result in an under-recovery of revenue as customers' willingness to pay falls below prices derived from the building block model. In turn, this will reduce JGN's operating cash flows and

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[59] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 5 - Capital expenditure*, Draft decision, November 2024, p 26; and Jemena, *Jemena Gas Networks (NSW) Ltd 2025-30 Access Arrangement Proposal, Attachment 5.1: Capital expenditure*, 28 June 2024, p 15.

[60] Jemena, *Jemena Gas Networks (NSW) Ltd 2025-30 Access Arrangement Proposal, Attachment 5.1: Capital expenditure*, 28 June 2024, p 15.

ultimately impact its ability to fund its operations and meet its interest obligations to debt holders.[61] Further, JGN explains that a reduction in operating cash flows may also apply downward pressure on its credit rating, making it difficult and expensive for JGN to borrow the funds necessary to maintain the safe operation of its network.[62]

By contrast, bringing forward depreciation will provide JGN with more operating cash flows in the near term to meet its financing, non-capital and other costs. In figure 4.5, we show JGN's operating cash flows in each future regulatory period between 2026 and 2050 under the 'electric tortoise' scenario using the three different depreciation approaches. Both the AER and JGN's proposed depreciation amounts provide JGN with higher operating cash flows relative to the real straight-line depreciation scenario in the near term for the 2025-30 regulatory period. This arises within JGN's modelling because bringing forward more depreciation for the 2025-30 regulatory period will allow JGN to recover more revenue from its current customers for the 2025-30 regulatory period.[63] However, JGN's proposed depreciation amount provides a greater level of operating cash flows relative to the AER's proposed depreciation amounts for each year during this regulatory period.[64]

Figure 4.5: Operating cash flows for JGN (electric tortoise scenario)
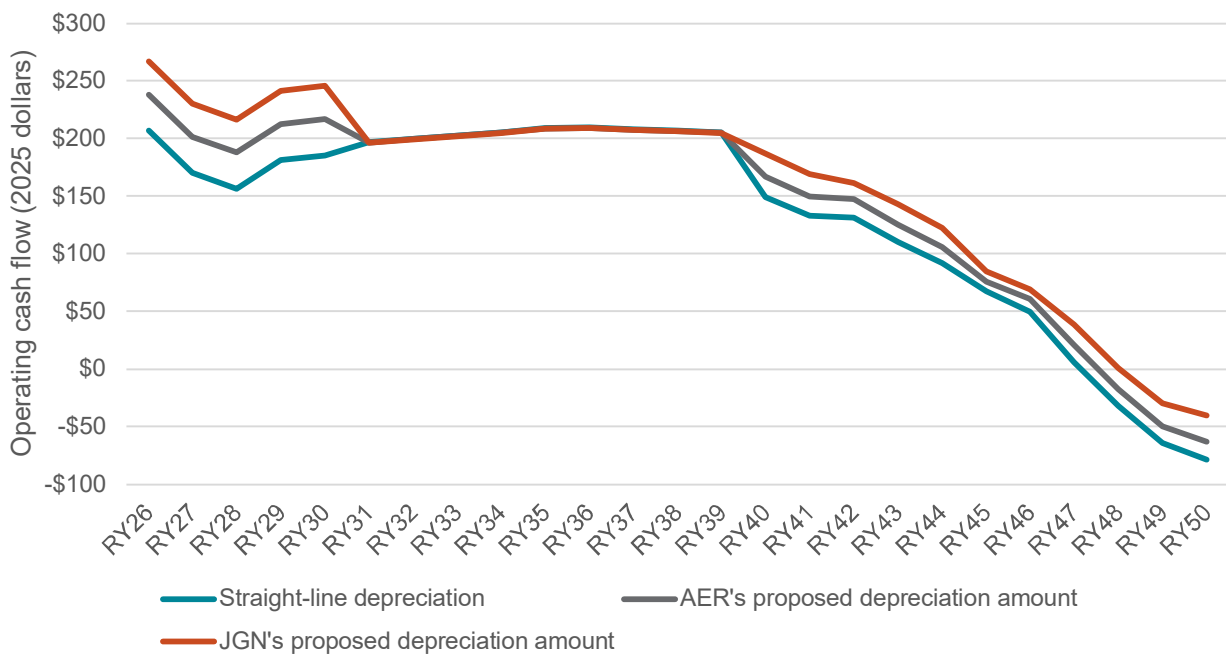
Source: HoustonKemp analysis of Jemena's future of gas model.

As such, allowing JGN to adjust its depreciation schedule by $300 million, rather than the $156 million included in the AER'S draft decision, allows it to earn higher near term cash flows. A greater volume of near term cash flows is likely to better meet JGN's reasonable needs for cash flows to cover financing, non-capital and other costs. This in turn is likely to make it easier for JGN to maintain the sufficient cash flow required to

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[61] Jemena, *Jemena Gas Networks (NSW) Ltd 2025-30 Access Arrangement Proposal, Attachment 7.4: Future of gas analysis*, 28 June 2024, p 26.

[62] Jemena, *Jemena Gas Networks (NSW) Ltd 2025-30 Access Arrangement Proposal, Attachment 7.4: Future of gas analysis*, 28 June 2024, p 26.

[63] Both the AER's and JGN's proposed depreciation allowances also provide JGN with higher operating cash flows relative to the real straight-line depreciation scenario in the longer term for the 2040-45 and 2045-50 regulatory periods. This arises within JGN's modelling because bringing forward depreciation at a faster rate for the 2025-30 regulatory period reduces the value of JGN's asset base in these later regulatory periods, thereby reducing the financing costs incurred by JGN.

[64] We note that JGN's proposed depreciation amount also provides a greater amount of operating cash flows relative to the AER's proposed depreciation amounts for each year during the 2040-45 and 2045-50 regulatory periods.

operate its network safely, reliably and securely, which promotes the long term interests of consumers as we explain in section 3.1.1 above.

4.4 AER's proposal causes long term price instability

In its draft decision, the AER proposes a more conservative and reactive approach to adjusting depreciation. Specifically, we describe in section 1 that the AER's draft decision is to limit JGN's depreciation adjustment using a zero real price growth constraint for the 2025-30 regulatory period to be applied to the final prices in the current regulatory period. This is lower than the 1.5 per cent real price growth constraint that the AER approved for the Victorian gas distribution businesses.[65] The AER states that it has done so to be 'prudent' and to allow 'a measured start to accelerated depreciation while maintaining price affordability for consumers'.[66] By its approach, the AER appears to prioritise near term or short term price stability for existing gas consumers. In the material below we explain below why, in our view, this approach is not in the long term interests of gas consumers.

The AER appears note to consider the trade-offs associated with applying its proposed real price path constraint. While setting a cap on annual real price growth may promote price stability over a single regulatory period, it has the effect of increasing price instability in future regulatory periods, because it allocates risks away from the broader base of current customers onto a narrower base of future customers.

Allocating risks in this way will not promote the long term interests of gas consumers as required by the NGO, because:

- future gas consumers are likely to face real prices that are higher and more volatile compared to the prices that current gas consumers will pay, thus detracting from the AER's preferred principle of achieving constant real prices over the life of JGN's distribution network, and thereby making it more difficult for gas consumers to make effective decisions in relation to behind-the-meter gas investments; and

- it risks causing a negative feedback loop in prices for gas distribution services, which we refer to in the context of real straight-line depreciation in section 4.1, and which risks bringing forward the closure of the gas network, in turn preventing future gas consumers from continuing to benefit from their continued use of JGN's network and their own sunk assets, facilitating a more disorderly energy transition.

Further, the AER observes that there is scope for JGN to vary its access arrangement if significant changes occur, ie:[67]

> We consider that the economic regulatory framework currently provides us the tools we need to address the risks associated with the uncertainty driven by the transition to net zero over the next 5 years. **For example, where significant changes occur as a result of the transition, JGN may need to consider a variation to its access arrangement.** (emphasis added)

In contrast, in our opinion the AER's draft decision to apply a reactive approach towards adjusting JGN's depreciation schedule is less likely to promote the long term interests of gas consumers, as compared to a more proactive approach.

First, as the AER describes, there is less opportunity to adjust service providers' depreciation schedules over time:[68]

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[65] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 4 - Regulatory depreciation*, Draft decision, November 2024, pp 19-21, table 4.5.

[66] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 4 - Regulatory depreciation*, Draft decision, November 2024, p 11.

[67] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Overview*, Draft decision, November 2024, p ix.

[68] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 4 - Regulatory depreciation*, Draft decision, November 2024, p 11.

> Our decision to allow accelerated depreciation is not intended to resolve the stranded asset risk issue, but rather to share some of the risk between JGN and a larger customer base while there is still an opportunity to do so. **The opportunity to apply accelerated depreciation diminishes over time as demand declines and network prices continue to increase.** As such, accelerated depreciation will not remove the need to resolve the broader policy question involving consumers, network businesses and governments on who should pay for the costs of stranding risk associated with past capital investments, or when, and how this will occur. (emphasis added)

The AER's observation is consistent with our analysis set out in figure 2.6 above, whereby the difference between end-customer gas and electricity prices for JGN's residential customers shrinks materially between the 2025-30 and 2030-35 regulatory periods under the 'electric tortoise' scenario. This analysis further shows that adjusting JGN's depreciation schedule eventually has no effect from 2039-40 onwards, at which point the end-customer gas price will be higher than the end-customer electrification price.

Consequently, applying an overly conservative approach for JGN's 2025-30 regulatory period may have irreversible impact if there were to be a material and rapid reduction in demand for JGN's gas distribution services, in which case there would be a higher risk of a disorderly energy transition and future consumers will be subject to higher prices for gas distribution services.

In contrast, applying a proactive approach for JGN's 2025-30 regulatory period is likely to be reversible since the AER can review and potentially readjust JGN's depreciation schedule in future regulatory periods if demand turns out to be higher than anticipated. Put another way, bringing forward depreciation at the rate proposed by JGN, or even faster, over the 2025-30 regulatory period will ensure greater optionality in the future regulation of gas network services, whereas this optionality may be lost by a more conservative approach over this crucial period.

Second, requiring service providers to vary their access arrangements in response to gas policy measures established to achieve legislated emissions reduction targets will lead to increased price uncertainty and higher regulatory costs that ultimately will be borne by consumers. For example, AusNet has recently proposed such a variation in response to material policy changes that were recently passed by the Victorian government.[69] We anticipate that, if the AER continues to apply tight real price path constraints that reduce the scope for adjusting JGN's depreciation schedule, then such reopeners are more likely to be triggered. This can be expected to lead to increased costs associated with regulatory processes that are unlikely to be in the long term interest of end users.

Finally, the AER has provided no explanation or justification for adopting a zero real price growth constraint for JGN, aside from its conclusion that the policy environment in NSW leads to lower asset stranding risks compared to those faced by networks in Victoria and Australian Capital Territory.[70] This provides little guidance as to the justification for its proposed constant real price path, rendering unclear the basis on which JGN could establish the case for an alternative real price path if circumstances were to change. Such unclarity further increases price uncertainty and regulatory costs for both JGN and its customers.

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[69] AusNet, *Gas access arrangement review 2024-28*, Variation Proposal, 30 September 2024.

[70] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 4 - Regulatory depreciation*, Draft decision, November 2024, pp 19-20.

5. Reasonable opportunity for cost recovery

Adjusting JGN's depreciation in line with its proposal will provide it a reasonable opportunity to recover its costs as specified by the revenue and pricing principles, whilst still giving rise to a substantial risk that JGN will be unable to recover all of these costs.

In contrast, we find that the AER's draft decision focuses on short term policy settings, rather than long term policy objectives. Additionally, we find there is no sound basis for the AER's draft decision to set a zero real price path constraint for JGN, given that:

- AEMO projects broadly similar declines in residential and commercial gas consumption for NSW and Victoria, despite the AER's view that the policy environment is different;

- JGN's obligation to incur capital expenditure increases its asset stranding risks; and

- the AER's zero real price growth constraint does not account for JGN's individual circumstances compared to gas distributors in Victoria.

More generally, we find that delaying action to address JGN's asset stranding risks will reduce its opportunity to recover its costs.

Further, in their submissions to the AER:

- Energy Consumers Australia (ECA) implies that JGN should bear all the stranded asset risk associated with the projected decline in gas demand; and

- the Justice Equity Centre (JEC) submits that JGN should still be subject to real straight-line depreciation on the basis that it has not adequately described and quantified the stranding risk of its gas distribution assets and is effectively requesting payment for their future redundancy.

In sections 5.1 to 5.4 below, we:

- explain that the AER focuses on the short term policy settings in NSW in its draft decision, rather than long term policy objectives at the state and national level;

- explain why the basis for the AER's zero real price path constraint is not sound;

- explain why delaying action reduces JGN's opportunity to recover its efficient costs due to the greater competition it will face against electrification; and

- clarify why stakeholder submissions from the ECA and JEC regarding JGN's asset stranding risk are incorrect.

5.1   AER focuses disproportionately on short term NSW policy settings

In its draft decision, the AER focuses on short term policy settings applying in NSW. Specifically, the AER states that it has allowed some level of accelerated depreciation to address early indications of asset stranding risk despite the fact that NSW government policies regarding the future role of JGN's network are still in development:[71]

> Based on the material before us, our draft decision has considered the balance between accepting some accelerated depreciation to reduce JGN's long term asset stranding risk, against the short-term price impacts. Although the policy environment surrounding the future role of JGN's network in NSW is still developing, we have allowed some level of accelerated depreciation in recognition of early indications that JGN may potentially face some degree of stranded asset risk in NSW.

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[71] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030) Overview*, Draft decision, November 2024, p 18.

> However, we consider the level of risk is to a lesser extent than that faced by networks operating in Victoria and ACT at the present time. We consider the real price increase limit of 0% provides a level of accelerated depreciation that is reflective of the outlook and strength of policy signals surrounding the future role of JGN at the present time

By contrast, the focus of the NGO on the long term interests of consumers indicates that long term policy objectives should be the focal point of the AER's assessment, instead of short term indicators of policy progress towards these objectives. In particular, the AER should have had greater regard to the NSW and Australian governments' legislated net zero targets by 2050, which we describe in section 2.1. By the nature of these targets, it can be presumed that these will be the focus of future short term policy settings.

Crucially, JGN has incurred capital expenditure on assets with a design life of up to 80 years, while legislated targets will necessitate a substantial reduction or cessation in the use of gas assets within the 25 years though to 2050. Put another way, the NSW and Australian governments' legislated targets, regardless of short term policy settings, effectively reduce the economic life of JGN's gas assets. Consequently, long term policy objectives are more relevant to the AER's assessment than the presence or extent of policy measures in place over the next access arrangement period.

With long term policy objectives in mind, JGN's proposed depreciation adjustment provides a more reasonable opportunity for cost recovery relative to the AER's draft decision by allowing a greater amount of depreciation to be recovered over the 2025-30 regulatory period.

5.2 Economic basis for AER's zero real price path constraint is not sound

We describe in section 1 above that the AER's draft decision constrains JGN to a zero real price growth constraint for the 2025-30 regulatory period, which is lower than the 1.5 per cent real price growth constraint that the AER has approved for the Victorian gas distribution businesses.[72]

The AER's reasoning reflects its view that the policy environment in NSW generates less risk of asset stranding for gas networks and that it is prudent to maintain price affordability for consumers while allowing a measured start to bringing forward depreciation.[73]

Specifically, in relation to its view on the policy environment, the AER identifies that the NSW government has not implemented a statewide ban on new gas connections. This contrasts with the policy settings in Victoria and the Australian Capital Territory, where:[74]

- the Victorian government has banned natural gas connections in all new homes that require a planning permit in the state; and

- the Australian Capital Territory government has banned new gas network connections in certain circumstances.

The AER cites these differences to support the application of a lower real price growth constraint for JGN as compared to gas distributors in Victoria:[75]

> We consider a lower 'base' real price increase limit compared to Victoria is appropriate as JGN is still required to connect new customers as there is currently no legislation to ban new gas

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[72] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 4 - Regulatory depreciation*, Draft decision, November 2024, pp 19-21, table 4.5.

[73] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 4 - Regulatory depreciation*, Draft decision, November 2024, pp 10-11.

[74] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 4 - Regulatory depreciation*, Draft decision, November 2024, p 12.

[75] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 4 - Regulatory depreciation*, Draft decision, November 2024, p 20.

connections in NSW. This is in contrast with Victoria or the ACT which have already implemented statewide bans on new gas connections and a roadmap to phase out gas.

The AER considers that jurisdiction-wide bans on new gas connections in Victoria and Australian Capital Territory constitute strong policy signals that likely indicate a limited role for gas networks in those jurisdictions beyond 2050.[76,77] The AER appears to reason that the absence of such a policy in NSW implies a weaker policy signal regarding the reduced role for gas networks in the state, with governments in Victoria and Australian Capital Territory targeting earlier net zero target dates and stronger interim targets compared to that of the NSW government.[78]

In our view, the AER's reasoning has two key shortcomings. First, AEMO's projections suggest that the rate of future declines in residential and commercial gas consumption will be broadly similar across NSW and Victoria. This sits uneasily alongside the AER's conclusion that policy settings in NSW are less indicative of the reduced role for gas networks in the state, on which the AER relies to justify a lower real price growth constraint for JGN relative to Victorian gas distribution businesses.

Second, the AER has not closely considered how the requirement for JGN to connect new customers may impact on the likelihood and magnitude of asset stranding risks, as compared to gas distribution businesses in Victoria and the Australian Capital Territory. We find that this obligation magnifies JGN's asset stranding risks relative to those of gas distributors in Victoria.

In addition, we find that the AER's zero real price growth constraint does not account for JGN's unique circumstances.

Consistent with these observations, there is no sound basis by which the AER would set a real price growth constraint for JGN that is less than the 1.5 per cent constraint applied to gas distribution businesses in Victoria.

We explain the above points in sections 5.2.1 to 5.2.3 below before drawing our conclusion in section 5.2.4.

5.2.1   AEMO projects broadly similar gas consumption declines in NSW and Victoria

The AER considers that the policy settings in NSW generate weaker signals regarding the role for gas distribution networks compared to that of policies in Victoria and Australian Capital Territory:[79]

> In our recent decisions for the gas distributors in Victoria and the ACT, we have allowed some level of accelerated depreciation for networks operating in these jurisdictions. In these decisions, the case for accelerated depreciation was supported by jurisdictional policies or legislation to transition away from the use of natural gas by the Victorian and ACT governments. **This included strong policy signals such as jurisdictional wide bans on new gas connections which we acknowledged would likely mean a limited role for gas networks in Victoria and ACT beyond 2050. Conversely, the NSW Government has not made similar policies to date which means JGN is obliged to continue investing and connecting new customers to its network.**
>
> Based on the material before us, our draft decision has considered the balance between accepting some accelerated depreciation to reduce JGN's long term asset stranding risk against the short-term price impacts in the context of the NSW government policies regarding the future role of gas.

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[76] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 4 - Regulatory depreciation*, Draft decision, November 2024, p 19.

[77] We note, however, that the AER published its final decision on access arrangements for Victorian gas distribution businesses a month prior to the Victorian Government's announcement that it was banning natural gas connections in all new homes that require a planning permit in the state. See: AER, *Australian Gas Networks (Victoria & Albury) gas distribution access arrangement 1 July 2023 to 30 July 2028, Overview*, Final decision, June 2023; and Premier of Victoria, https://www.premier.vic.gov.au/new-victorian-homes-go-all-electric-2024, accessed 3 January 2025.

[78] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 4 - Regulatory depreciation*, Draft decision, November 2024, pp 11-12.

[79] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 4 - Regulatory depreciation*, Draft decision, November 2024, p 19.
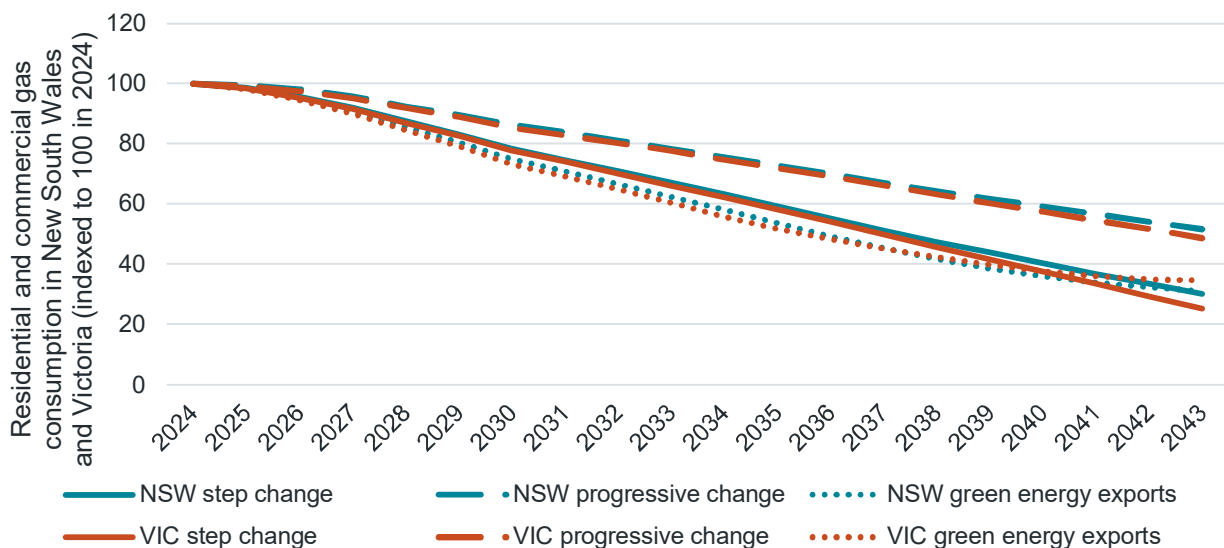
Although the policy environment surrounding the future role of JGN's network in NSW is still developing, we have allowed some level of accelerated depreciation in recognition of early indications that JGN may potentially face some degree of stranded asset risk in NSW, but to a lesser extent than that faced by networks operating in Victoria and ACT. (emphasis added)

Although we agree in principle that the policy environment in Victorian and the Australian Capital Territory may give rise to a faster decline in gas usage, the AER has not demonstrated that the differences in policy settings will:

- exert a material impact on the role for gas networks in the respective states relative to the asset lives and the legislated emissions reduction targets; or

- result in relatively lower asset stranding risks in NSW.

By contrast, AEMO's projections suggest that the future reliance on gas networks will not be materially different between NSW and Victoria, even after controlling for Victoria's gas connection bans.[80] This can be seen in figure 5.1 below, where the future trajectory of residential and commercial gas consumption is broadly similar across both states.[81]

Figure 5.1: Index of residential and commercial gas consumption in New South Wales and Victoria

Source: HoustonKemp analysis of AEMO data, AEMO, https://aemo.com.au/energy-systems/gas/gas-forecasting-and-planning/gas-forecasting-data-portal, accessed 11 December 2024.

In figure 5.2 below we show the corresponding projections of industrial gas consumption in NSW and Victoria. We observe that:

- under the 'step change' scenario, the future trajectory of industrial gas consumption is broadly similar across both states; and

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[80] We note that the ban on new gas connections for Victoria and the Australian Capital Territory are factored into AEMO's forecasts. See: AEMO, *Gas Statement of Opportunities*, March 2024, p 23.

[81] We note that forecast gas consumption for the Australian Capital Territory is included in AEMO's NSW forecast. However, the Australian Capital Territory's contribution to the NSW forecast is likely immaterial. For instance, in its most recently published report on the performance of gas networks, the NSW government reported that 104.2 PJ of natural gas was consumed in 2022-23. In the same period, the Australian Capital Territory government reported total fossil fuel gas consumption in the state, which includes gas heating, hot water and cooking, and excludes transport, was 7,115 TJ or 7.1 PJ. This is equivalent to less than seven per cent of NSW's consumption. See: Department of Climate Change, Energy, the Environment and Water, *NSW 2022-2023 Gas networks Performance report*, 10 October 2024, Table 1, p 10; and ERM, *ACT Greenhouse Gas Inventory for 2023-24*, 31 October 2024, Table 4, p 11.

- under the 'progressive change' and 'green energy exports' scenarios, industrial gas consumption in Victoria declines more materially than in NSW.

However, we note that less weight should be applied to projections of industrial gas consumption, since industrial customers make up a relatively small proportion of JGN's revenues. For example, under the 'electric tortoise' scenario, residential and commercial customers make up 91 per cent of JGN's revenues in the 2025-26 regulatory year, while industrial customers make up 6 per cent of revenues and the remainder is derived from ancillary services.[82,83]

Figure 5.2: Index of industrial gas consumption in New South Wales and Victoria
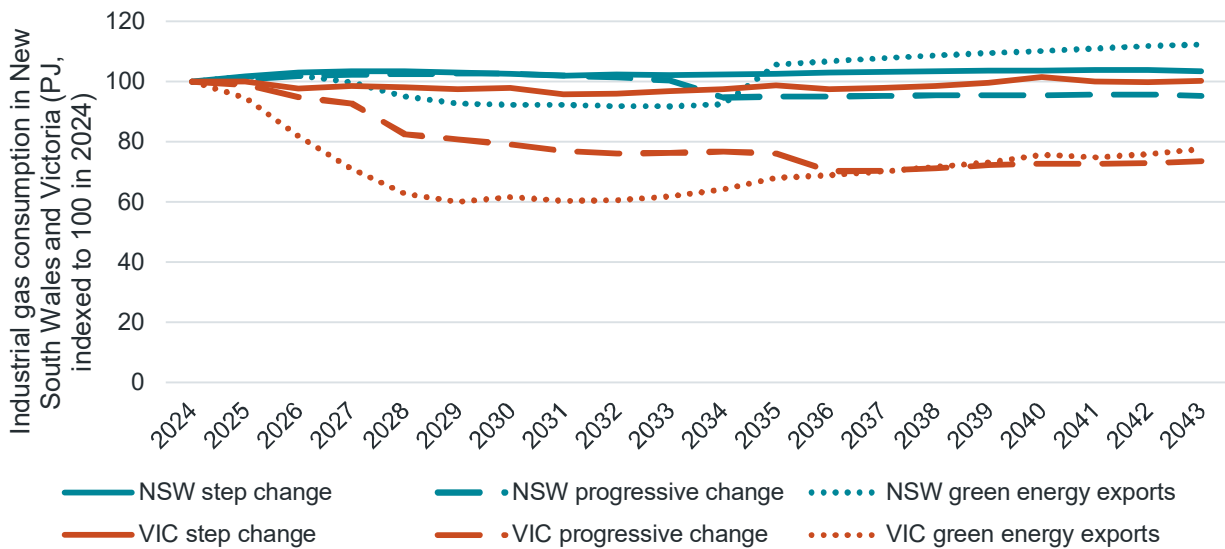
Contrary to the AER's draft decision, AEMO's projections suggest that the current differences in policy settings for NSW and Victoria do not have a material impact on the future role of gas distribution networks in their respective states.

This is at odds with the AER's conclusion that the policy settings in NSW are less indicative of the reduced role for gas networks in the state relative to Victoria, on which the AER relies to justify a lower real price growth constraint for JGN.

5.2.2   JGN's capital expenditure obligation increases asset stranding risks

Unlike gas distributors in Victoria and the Australian Capital Territory, which have introduced statewide bans on new connections, JGN is obliged to incur capital expenditure to connect new customers. The absence of a ban on new connections in NSW not only raises the magnitude of the potential for asset stranding but also increases the probability that JGN's assets will be stranded, relative to distributors in states with bans.

We explain the reasoning for these findings below.

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[82] Jemena, *JGN - Att 7.8M - Future of gas model - 20240628 – Confidential*, Spreadsheet, 28 June 2024, worksheet 'Calc|WTP and cashflow' cells T73:T76.

[83] Note, these proportions hold regardless of whether real straight-line or accelerated depreciation, including that proposed by JGN or the AER in its draft decision, are applied to JGN'S future of gas modelling for the 'electric tortoise' scenario.

JGN is obliged to incur capital expenditure to connect new customers

The JEC submits that JGN's proposal to adjust its depreciation schedule is inconsistent with its large, proposed capital expenditure program for connecting new customers and installing new meters, which increases the risk of asset stranding.[84]

Under the NGR, JGN is obliged to prepare an access offer in response to an access request.[85] The NGR provides JGN only limited scope to refuse to make an access offer, such as due to technical infeasibility or concerns about safety and reliability.[86]

The size of JGN's large, proposed capital expenditure program for connecting new customers is driven by its forecasts of customer connections and unit rates. The AER considers these forecasts to be reasonable, prudent and efficient.[87]

It follows that there is no inconsistency between JGN's proposal to adjust its depreciation schedule and its large, proposed capital expenditure program for connecting new customers, since JGN's proposal reflects its compliance with regulatory obligations and not a commercial decision to grow its business. This is also consistent with JGN's initiatives to lower the capital intensity of new connections and its proposed unit cost reductions relative to its costs for the 2022-23 regulatory year.[88]

Notwithstanding, we agree with the JEC that JGN's large capital expenditure program as required under the NGR magnifies its asset stranding risks, as compared those that would apply if it were able to avoid this expenditure.

Asset stranding risks reflect both the likelihood of assets becoming stranded and the magnitude of the potential economic losses. We explain below that the combination of having no statewide ban on new gas connections in NSW while continuing to have a regulatory obligation to incur capital expenditure on new connections for requesting customers increases both the likelihood and magnitude of these risks for JGN.

Absence of a statewide ban on new gas connections raises the magnitude of JGN's asset stranding

We explain above that JGN is obliged under the NGR to prepare an access offer in response to an access request and has limited scope for refusing a requesting customer.[89]

In addition, the NGR restricts JGN's connection charges to be no more than the amount by which the present value of its capital expenditure for the relevant connection exceeds the present value of its expected incremental revenue.[90]

JGN has identified that, in meeting its obligation to connect a requesting customer, it faces the risk that the customer may subsequently disconnect from the network before JGN has recovered sufficient revenue to cover the cost of the connection.[91] In other words, JGN faces asset stranding risks as a result of meeting this obligation.

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[84] Justice and Equity Centre, *Jemena Gas Networks access arrangement 2025-30: Issues paper*, 20 September 2024, p 19.

[85] NGR version 82, rule 105E(1).

[86] NGR version 82, rule 105E(4).

[87] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 5 - Capital expenditure*, Draft decision, November 2024, p 21.

[88] Jemena, *Jemena Gas Networks (NSW) Ltd 2025-30 Access Arrangement Proposal, Attachment 5.1: Capital expenditure*, 28 June 2024, p 8.

[89] NGR version 82, rule 105E.

[90] NGR version 82, rule 119M(1).

[91] Jemena, *Jemena Gas Networks (NSW) Ltd 2025-30 Access Arrangement Proposal, Attachment 5.1: Capital expenditure*, 28 June 2024, p 8.

Under such conditions, the lack of a statewide ban on new gas connections in NSW means that JGN must continue to incur capital expenditure on new gas connections for requesting customers, even though it is uncertain whether JGN will be able to recover these costs fully.

To the extent that JGN is unable to require connecting customers to pay sufficient upfront contributions that will cover its full costs on connecting capital expenditure, then these assets will be partially stranded if JGN cannot fully depreciate its new connection assets before:

- the point in time when end-user gas prices exceed customers' maximum willingness to pay; and/or
- JGN shuts down its gas distribution network, whether for commercial, legal or regulatory reasons.

Conversely, a jurisdictional ban on new natural gas connections, such as those in place in Victoria and the Australian Capital Territory, would have the effect of reducing the magnitude of asset stranding risks for gas distributors, who would no longer be required to incur capital expenditure in response to access requests from customers that would have requested new connections but for the ban. These gas distributors will avoid the prospect of asset stranding in relation to the capital expenditure that they would have had to incur on new connections in the absence of the statewide ban, and for which the prospect of cost recovery is uncertain.

In this way, the combination of having no statewide ban on new gas connections in NSW while continuing to have a regulatory obligation to incur capital expenditure on new connections for requesting customers increases the magnitude of JGN's assets that have the potential to become stranded, relative to a counterfactual in which JGN was instead subject to the policy settings that currently apply in Victoria and Australian Capital Territory.

Absence of a statewide ban on new gas connections may raise JGN's probability of asset stranding

The obligation to connect a requesting customer also increases the probability that JGN ends up holding assets that have become stranded. For example, we understand that the medium pressure service lines installed for each new connection are being given a regulatory depreciation life of 50 years, which is double the 25-year period between the time of writing and NSW's and Australia's net zero target.

If JGN cannot recover fully the cost of new connections before the new customer disconnects from the network, then the corresponding unrecovered costs can only be recovered from JGN's remaining customers. These customers will face higher gas bills and thus will have an additional incentive to leave the network, which further increases prices for customers that remain and increases the likelihood that JGN's assets will become stranded once prices for gas distribution services exceed its customers' maximum willingness to pay.

A jurisdictional ban on new natural gas connections thus protects gas distributors in those jurisdictions from some types of risks, since they will not have to take on the risk of connecting a customer that may subsequently disconnect from the network before full cost recovery can be achieved.

Conversely, the absence of a statewide ban on new gas connections in NSW means that JGN must continue to connect requesting customers. This requires JGN to take on the risk of being unable to recover its costs from new customers while having to recover such costs through charging higher prices for gas distribution services to its remaining customers.

In this way, the combination of having no statewide ban on new gas connections in NSW while continuing to have a regulatory obligation to incur capital expenditure on new connections for requesting customers also increases the probability that JGN's assets will become stranded, as compared to a hypothetical counterfactual in which JGN were instead subject to the policy settings that currently apply in Victoria and Australian Capital Territory.

5.2.3   AER's zero real price growth constraint does not account for JGN's circumstances

In addition to the considerations outlined in sections 5.2.1 and 5.2.2 above, it is also important to take into account the differences between JGN's circumstances and that of other gas distributors when setting real price growth constraints.

The AER's approach for implementing the real price growth constraint involves starting this price path from the final year of the current regulatory period. This approach means that gas distribution businesses that have low regulated prices in the final year of the previous regulatory period and high regulated prices over the next regulatory period will be affected more adversely by the AER's real price growth constraint. These businesses will receive a lower return of capital compared to a counterfactual in which they had high regulated prices in the final year of the previous regulatory period and low regulated prices over the next regulatory period.

In JGN's case, the AER's real price growth constraint affects JGN more adversely than it does for the Victorian gas distributors. This is because:

- JGN's rate of return on capital for the 2020-25 regulatory period is materially lower than that applied to the Victorian gas distributors, while its rate of return on capital for the 2025-30 regulatory period is materially higher than that applied to the Victorian gas distributors; and

- the AER's draft decision includes a one-off revenue adjustment that increases JGN's revenues for the 2025-30 regulatory period.

These factors suggest that, in the absence of differences in policy settings as discussed in section 0 above, the 1.5 per cent real price growth constraint applied to the Victorian gas distributors will achieve less in terms of bringing forward depreciation in NSW because of other increases in costs to which this price constraint must also contribute. Rather, JGN's specific circumstances further necessitate applying higher real price growth relative to that allowed for gas distributors in Victoria and Australian Capital Territory to allow it a reasonable opportunity for cost recovery.

We discuss these two factors further below.

AER's real price growth constraint adversely affects JGN due to movements in the return on capital

JGN's rate of return on capital for the 2020-25 regulatory period is materially lower than that applied to gas distributors in Victoria from their previous regulatory determinations. This can be seen in table 5.1 below, which shows the nominal vanilla weighted average cost of capital (WACC) that the AER has applied to JGN and the Victorian gas distributors for the current and previous regulatory periods.

We observe from table 5.1 that:

- JGN's most recent 4.55 per cent nominal vanilla WACC from the previous regulatory period is lower than that of the Victorian gas distributors by between 0.78 and 0.87 percentage points;

- JGN's 5.81 per cent nominal vanilla WACC from the draft decision for the 2025-30 regulatory period is higher than that applied to the Victorian gas distributors for the 2023-28 regulatory period by between 0.24 and 0.3 percentage points; and

- the difference between the updated and previous nominal vanilla WACC estimates for JGN is 1.26 per cent, which is materially higher than the 0.15 percentage points difference observed for the Victorian gas distributors.

This means that:

- JGN's prices at the end of the 2020-25 regulatory period will be lower than the prices that it would have received had it been subject to a similar nominal vanilla WACC as that applied to the Victorian gas distributors for their 2023 half-year regulatory extension period; and

- JGN's prices for the 2025-30 regulatory period under real straight-line depreciation are higher than the prices that it would have received had it been subject to a similar nominal vanilla WACC as that applied to the Victorian gas distributors for their 2023-28 regulatory period.

In comparing its application of a 1.5 per cent real price growth constraint to the Victorian distributors, as compared to its proposal to apply a zero per cent real price growth to JGN, by reference only to the policy environment, the AER sets aside important cost-based differences that will also be relevant to the determination of prices for gas distribution services.

Table 5.1: Annual weighted average cost of capital for JGN and the Victorian gas distributors

Gas distributor	Previous nominal vanilla WACC (annual)	Updated nominal vanilla WACC (annual)	Difference
JGN (NSW)	4.55% (March 2024 update for 2024-25)	5.81% (November 2024 draft decision)	1.26%
AusNet (Vic)	5.42% (November 2022 decision)	5.57% (June 2023 decision)	0.15%
AGN (Vic)	5.37% (November 2022 decision)	5.52% (June 2023 decision)	0.15%
Multinet (Vic)	5.33% (November 2022 decision)	5.48% (June 2023 decision)	0.15%

Source: AER, *JGN – Final Decision – PTRM – 2024-25 RoD update – PUBLIC*, Spreadsheet, March 2024, worksheet 'WACC', cell K18; AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030) Attachment 3 – Rate of return*, Draft decision, November 2024, table 3.1; AER, *AusNet Services gas distribution access arrangement 1 January – 30 June 2023 extension period*, Final decision, November 2022, p 10; AER, *AusNet Gas Services Gas distribution access arrangement 1 July 2023 to 30 June 2028, Attachment 3 – Rate of return*, Final decision, June 2023, table 3.1; AER, *Australian Gas Networks (Victoria and Albury) gas distribution access arrangement 1 January to 30 June 2023 extension period*, Final decision, November 2022, p 10; AER, *Australian Gas Networks (Victoria & Albury) Gas distribution access arrangement 1 July 2023 to 30 June 2028 Attachment 3 – Rate of return*, Final decision, June 2023, table 3.1; AER, *Multinet Gas Networks gas distribution access arrangement 1 January to 30 June 2023 extension period*, Final decision, November 2022, p 10; and AER, *Multinet Gas Networks Gas distribution access arrangement 1 July 2023 to 30 June 2028 Attachment 3 – Rate of return*, Final decision, June 2023, table 3.1.

AER's real price growth constraint adversely affects JGN due to one-off revenue adjustments

The AER's draft decision includes several one-off revenue adjustments for JGN's 2025-30 regulatory period, resulting in a combined increase of $254 million. The primary driver of these adjustments are the expiry of a one-off, large negative revenue adjustment that arose from an earlier 2015-20 remittal decision that subsequently was included in JGN's 2020-25 access arrangement.[92]

This adjustment reduces JGN's regulated prices in the final year of the 2020-25 regulatory period while increasing its regulated prices over the 2025-30 regulatory period. Thus, consistent with our explanation above, the one-off revenue adjustments further mean that the AER's consideration of a zero per cent real price growth for JGN, which will result in prices for the 2025-30 regulatory period that are not cost reflective, sets aside important cost-based differences that will also be relevant to the determination of prices for gas distribution services.

5.2.4   JGN likely to require at least a 1.5 per cent per annum real price increase

Our reasoning above shows that the AER's basis for setting real price growth constraint for JGN that is lower than the 1.5 per cent constraint applied to gas distribution businesses in Victoria is not based on a sound economic analysis of the regulatory implications of these differing policy environments. It follows that JGN is likely to require at least a 1.5 per cent per annum real price increase in order to provide it a reasonable opportunity for cost recovery.

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[92] The other drivers included adjustments in relation to two incentives schemes, which the AER has controlled for in its draft decision. See: AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030) Overview*, Draft decision, November 2024, p 2; and AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 4 - Regulatory depreciation*, Draft decision, November 2024, p 10.

5.3 Delaying action reduces JGN's opportunity to recover its efficient costs

Although the AER has made an allowance for bringing forward depreciation, albeit to a lesser extent than that proposed by JGN, delaying action to address higher future prices for gas distribution services faced by customers and stranded asset risk faced by JGN reduces the opportunity for JGN to recover its efficient costs due to the greater competition it will face against electrification of gas demand.

We explain in section 2.2 that the projected decline in demand for JGN's services will potentially result in higher prices for gas distribution services for JGN's network over time. However, JGN will likely face a concurrent decline in residential and commercial customer's willingness to pay for gas.

We demonstrate this for residential customers under the relatively more likely 'electric tortoise' scenario in figure 5.3 below, which plots JGN's unsmoothed prices without bringing forward depreciation against customers' willingness to pay for gas.[93]

Figure 5.3: JGN's unsmoothed residential customer prices without bringing forward depreciation against customer willingness to pay (electric tortoise scenario)
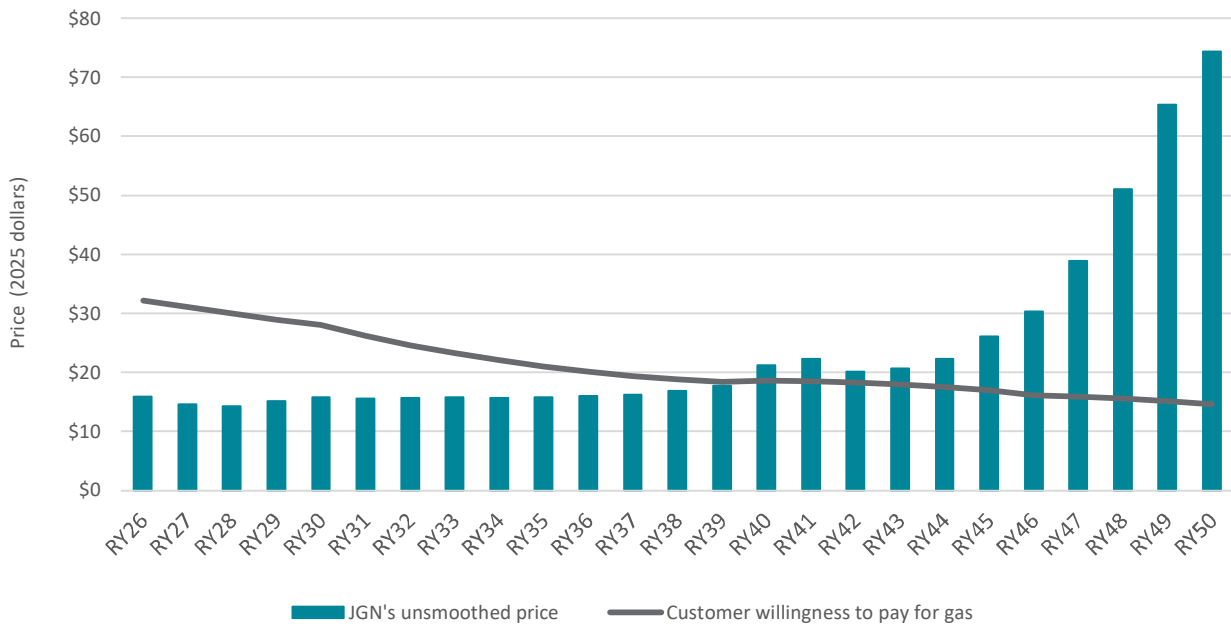
Source: HoustonKemp analysis of Jemena's future of gas model.

This analysis shows that that delaying action will likely see JGN's prices for residential customers exceeding their willingness to pay in future regulatory periods as the cost of electrification falls. Should electrification occur at a more rapid pace as it does under the second most likely future scenario, the 'electric hare' scenario, it is likely that JGN's residential customer prices will exceed customer willingness to pay much earlier.[94]

In figure 5.4, we show that delaying action will also likely see JGN's prices for commercial customers exceeding their willingness to pay in future regulatory periods, should the 'electric tortoise' scenario

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[93] We calculate customers' willingness to pay for gas by subtracting wholesale, transmission and retail proportions of end-customer energy price from the end-customer incremental electricity price excluding the fixed charge calculated in JGN's future of gas model.

[94] We show this in Figure A.7 in annexure A2.

eventuate. Again, under the second most likely, 'electric hare' scenario, JGN's commercial customer prices will likely exceed customer willingness to pay much earlier.[95]

Figure 5.4: JGN's unsmoothed commercial customer prices without bringing forward depreciation against customer willingness to pay (electric tortoise scenario)
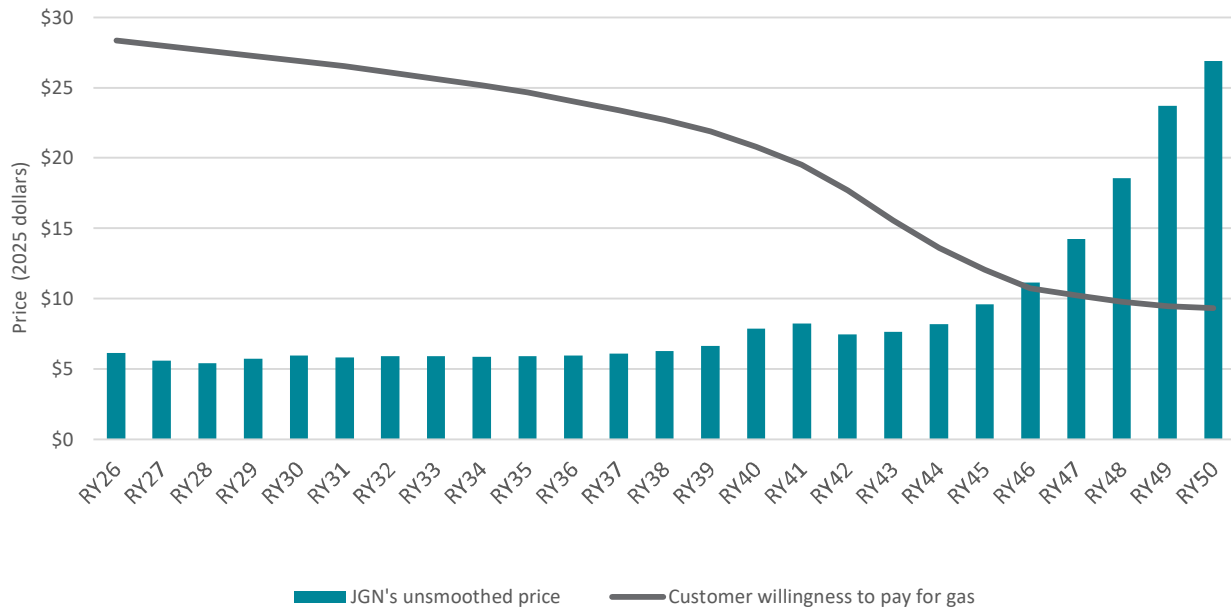
Source: HoustonKemp analysis of Jemena's future of gas model.

We note that this analysis does not take into account the elasticity of customer demand in response to prices or the anticipated negative feedback loop, which may see JGN's prices exceed customers' willingness to pay earlier than indicated under either scenario.

A declining willingness to pay in future regulatory periods indicates that JGN will likely face an increase in competition with electrification alternatives. Put another way, if JGN's prices exceed these price constraints in future regulatory periods, customers could seek electrification, assuming they face no barriers to doing so. This appears likely for residential customers under the two electrification scenarios, who comprise the majority of JGN's customers.

If prices derived from the building block model exceed customers' willingness to pay, JGN will be unable to recover more than the latter, which will result in lower revenues in future years. This is the case regardless of whether the regulated asset base (RAB) is subject to real straight-line depreciation, or a more front-loaded variant.

However, bringing forward depreciation – in particular, the depreciation amount proposed by JGN – would reduce the extent of this under-recovery and allow a more reasonable opportunity for cost recovery. For instance, applying real straight-line depreciation to derive prices for residential customers under the 'electric tortoise' scenario will result in an under-recovery of revenues totalling $437 million, in undiscounted terms. However, in relative terms, this under-recovery is:

- 24 per cent lower using the AER's proposed depreciation allowance, at $331 million; and
- 47 per cent lower using JGN's proposed depreciation allowance, at $232 million.

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[95] We show this in Figure A.8 in annexure A2.

5.4   Addressing stakeholder submissions regarding JGN's asset stranding risks

In this section, we address two stakeholder submissions regarding JGN's asset stranding risk, ie:

- the ECA implies that JGN should bear all the stranded asset risk associated with the projected decline in gas demand; and

- the JEC submits that JGN should still be subject to real straight-line depreciation on the basis that it has not adequately described and quantified the stranding risk of its gas assets and is effectively requesting payment to future redundancy.

We discuss these contentions in sections 5.4.1 and 5.4.2 below.

5.4.1   ECA misunderstands the regulatory compact

ECA submits that businesses in competitive markets face the risk of disruption, causing investors to lose money.[96] In making this argument, the ECA appears to imply that JGN should similarly bear the asset stranding risks associated with the projected decline in demand for gas distribution services.

The ECA's contention shows a misunderstanding of the regulatory framework within which the AER operates. We explain in sections 3.3.2 and 3.3.3 above that the regulatory framework:

- provides service providers incentives to make large sunk investments; and

- must shield service providers from the corresponding downside risks, since they are prevented from enjoying the upside benefits of achieving a rate of return on capital that exceeds the regulatory benchmark.

If this were not the case, then regulated business would not be able to recover their efficient costs, which would be in violation of the revenue and pricing principles and the AER's description of the 'regulatory compact' that we cite at section 3.3.2 above.

The ECA also overlooks the fact that unregulated commercial operators can choose the pace of their investment recovery relative to expected demand to mitigate asset stranding risks, subject to normal competitive pressures. Although the principles of rule 89 of the NGR seek to emulate this logic, the AER has not permitted JGN to choose the pace of its investment recovery to date.

Notwithstanding, JGN continues to retain some asset stranding risks as part of its regulatory proposal. Specifically, JGN is projected to have an unrecovered residual capital base of $1.52 billion (real 2025) as at 2050 under the 'electric tortoise' scenario. We discuss this unrecovered asset value below.

5.4.2   JEC incorrectly contends that JGN bears no asset stranding risk

The JEC submits that the AER should continue to apply real straight-line depreciation for JGN. According to the JEC:[97]

- JGN has not adequately described and quantified the stranding risk of its gas assets and assumes that it bears no risk for any asset stranding; and

- JGN seeks to be compensated in full for its investments, in that it is effectively requesting payment for future redundancy.

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[96] Energy Consumers Australia, *Submission on Jemena Gas Networks 2025-30 access arrangement plan,* 12 September 2024, p 11.

[97] Justice and Equity Centre, *Jemena Gas Networks access arrangement 2025-30: Issues paper*, 20 September 2024, pp 18-19.

The JEC's contentions are incorrect. First, JGN's regulatory proposal projects that a substantial amount of JGN's capital base remains unrecovered as at 2050 under all four scenarios considered.[98]

In addition, assuming that JGN's depreciation schedule is adjusted by $300 million over the 2025-30 regulatory period, the unrecovered residual RAB values as at 2050 under the 'electric tortoise' and 'electric hare' scenarios are:[99]

- $1.52 billion in real 2025 dollars under the 'electric tortoise' scenario, while the opening RAB at the beginning of the 2026 financial year and the forward-looking net capex sum to $5.84 billion; and

- $1.38 billion in real 2025 dollars under the 'electric hare' scenario, while the opening RAB at the beginning of the 2026 financial year and the forward-looking net capex sum to $5.59 billion.

JGN's future of gas model shows that the end-customer electrification prices as at 2050 for residential and commercial customers are lower than the corresponding end-customer gas prices.[100] Consequently, JGN will be unable to recover the full building block access price from its customers, since doing so will incentivise them to leave the gas distribution network to pursue electrification alternatives.

Aside from the asset stranding risks set out in its future of gas model, JGN also bears additional asset stranding risks associated with:

- the energy transition proceeding at a faster pace than assumed in the model's four scenarios;

- a negative feedback loop in which rising prices for gas distribution services in response to falling demand trigger a further decline in demand;[101] and

- recovering decommissioning costs, which we discuss in section 6 below.

Contrary to JEC's contentions, JGN does bear material risks associated with asset stranding even if its depreciation proposal is accepted.

We note for completeness that the unrecovered residual RAB values as at 2050 under the 'big hydrogen' and 'market hydrogen' scenarios, including $300 million of adjusted depreciation over the 2025-30 regulatory period, are:[102]

- $3.07 billion under the 'big hydrogen' scenario, while the opening RAB at the beginning of the 2026 financial year and the forward-looking net capex sum to $8.17 billion; and

- $2.91 billion under the 'market hydrogen' scenario, while the opening RAB at the beginning of the 2026 financial year and the forward-looking net capex sum to $7.83 billion.

However, JGN is projected to realise no asset stranding outcomes under the 'big hydrogen' scenario since its end-customer gas prices as at 2050 for residential and commercial customers remain below the corresponding end-customer electrification prices.[103]

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[98] Jemena, *Jemena Gas Networks (NSW) Ltd 2025-30 Access Arrangement Proposal, Attachment 7.4: Future of gas analysis*, 28 June 2024, figure 5-3.

[99] We obtain the unrecovered residual RAB corresponding to different scenarios from: Jemena, *JGN - Att 7.8M - Future of gas model - 20240628 – Confidential*, Spreadsheet, 28 June 2024, worksheet 'Calc|Charts' cell AR80.

[100] See: Jemena, *JGN - Att 7.8M - Future of gas model - June 2024*, Spreadsheet, 28 June 2024, worksheets 'Dashboard_ET300' and 'Dashboard_EH300', charts labelled 'End-customer energy price – Residential' and 'End-customer energy price – Commercial'.

[101] JGN's future of gas model assumes that gas demand in each scenario is exogenous, ie, does not decline in response to an increase in gas prices and vice-versa.

[102] We obtain the unrecovered residual RAB corresponding to different scenarios from: Jemena, *JGN - Att 7.8M - Future of gas model - 20240628 – Confidential*, Spreadsheet, 28 June 2024, worksheet 'Calc|Charts', cell AR80.

[103] See: Jemena, *JGN - Att 7.8M - Future of gas model - June 2024*, Spreadsheet, 28 June 2024, worksheets 'Dashboard_BH300', charts labelled 'End-customer energy price – Residential' and 'End-customer energy price – Commercial'.

JGN also may face some asset stranding risks under the 'market hydrogen' scenario, since its end-customer gas price as at 2050:[104]

- is above the corresponding end-customer electrification price for residential customers; and

- is below the corresponding end-customer electrification price for commercial customers.

In a similar vein, the JEC submits that bringing forward depreciation represents a windfall payment to JGN.[105] Contrary to JEC's submission, JGN's proposal to adjust its depreciation schedule by $300 million does not represent a windfall payment, since:

- the net present value of JGN's building block revenues remain unchanged; and

- the adjusted depreciation schedule is consistent with rule 89 of the NGR if it promotes efficient growth in the market for reference services, which we explain in section 3.2.2 above.

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[104] See: Jemena, *JGN - Att 7.8M - Future of gas model - June 2024*, Spreadsheet, 28 June 2024, worksheets 'Dashboard_MH300', charts labelled 'End-customer energy price – Residential' and 'End-customer energy price – Commercial'.

[105] Justice and Equity Centre, *Jemena Gas Networks access arrangement 2025-30: Issues paper*, 20 September 2024, p 16.

6. Recovering shutdown costs

JGN's proposed depreciation allowance reflects not only the anticipated decline in demand for gas but also any potential shutdown of its network, which would impose additional costs on JGN that are distinct from the sunk costs associated with its assets being subject to stranding risks.

In particular, JGN faces:

- abolishment costs as customers slowly leave the network; and

- decommissioning costs as parts of the network become unused.

JGN must incur these costs to maintain safety as demand for gas declines. In its draft decision, the AER refers to the dangers of unused customer connections remaining in its network, which still contain gas.[106] These dangers likely also extend to a circumstance in which JGN fails to decommission its pipelines should demand decline significantly, as well as other environmental harms.

The AER's draft decision considers the abolishment costs that will be imposed on consumers, deciding that these costs be 'socialised'. However, the AER does not consider the implications of JGN being required to incur decommissioning costs in future as demand for its gas distribution services continues to decline.

In sections 6.1 and 6.2 below we:

- assess the AER's draft decision on abolishment costs; and

- discuss the recovery of decommissioning costs.

6.1   Recovery of abolishment costs

The AER explains in its draft decision that abolishment is a 'cessation of service option which involves the removal of connecting infrastructure, including the meter and the connecting pipeline to the mains T intersection'.[107] It is one of two cessation service options JGN offers to its customers, with the options comprising:

- **disconnection** – a temporary disconnection from the network where the service is capped at the meter and the meter remains in place; and

- **abolishment** – a permanent disconnection where the service is permanently cut at the mains T intersection.

In sections 6.1.1 and 6.1.2 below we explain:

- the AER's rejection of JGN's proposed user-pays approach to abolishment costs; and

- that the AER's draft decision on abolishment costs is inconsistent with the NGR and NGL.

6.1.1   AER has rejected JGN's proposed user-pays approach

JGN's proposal for the 2025-30 regulatory period includes a small customer connection abolishment charge of $1,472 per meter, which applies to meters with a capacity of less than or equal to 25 m^3 per hour.[108] This

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[106] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 9 – Reference tariff setting*, Draft decision, November 2024, p 17.

[107] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 9 – Reference tariff setting*, Draft decision, November 2024, p 13.

[108] JGN proposes to set individual abolishment prices for meters with a capacity greater than 25 m^3 per hour. See: Jemena, *Jemena Gas Networks (NSW) Ltd 2025-30 Access Arrangement Proposal, Attachment 10.1: Pricing*, 28 June 2024, table 4-4.

reflects a 'user pays' approach, whereby the full cost of the abolishment service will be recovered from the requesting customer.[109]

The AER's draft decision is:[110]

- to reduce the cost benchmark underpinning the small customer connection abolishment charge to $1,104 per meter; and

- to socialise the abolishment cost partially, such that:

  > the abolishment tariff is set at $250 per meter, which will be paid by the requesting customer; and

  > the remaining $854 per meter abolishment cost is recovered through gas transportation tariffs, which will be socialised across JGN's remaining customers through an additional operating expenditure allowance.

The AER multiplies the remaining $854 per meter abolishment cost with forecast abolishment volumes to calculate that the socialised abolishment costs sum to $66.4 million across the 2025-30 regulatory period.[111]

In deciding to implement partial socialisation of abolishment costs, the AER considers that:[112]

- a large abolishment charge will disincentivise customers from engaging the abolishment service and instead will encourage them to choose temporary disconnections, which may raise safety issues;

- retailers may have to take on significant financial risk if they are compelled to pay JGN a large abolishment charge while also recovering these costs from the customer; and

- socialising abolishment costs may encourage switching from natural gas to electricity, which is consistent with the NGO in relation to reducing Australia's greenhouse gas emissions.

The AER acknowledges that socialising abolishment costs will raise equity issues, since it creates cross subsidies that benefit customers who switch earliest. These customers are likely to have greater resources than customers who remain on the gas network for longer. In addition, the diminishing number of customers that remain on the gas network will have to contribute increasing amounts to finance the socialised abolishment costs.[113]

6.1.2   AER's draft decision on abolishment costs is inconsistent with the NGR and NGL

The AER's draft decision on abolishment costs is inconsistent with its draft decision in relation to the depreciation amount in that, by the latter, it acknowledges that future consumers should not bear the cost burden for depreciation but nevertheless suggests that these same consumers bear the abolishment costs for current consumers. Furthermore, from a regulatory perspective, we find that the AER's draft decision is inconsistent with both the NGR and NGL.

We explain in the sections below that the AER's draft decision:

- leads to prices that are below avoidable cost;

- is not in the long term interests of gas consumers; and

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[109] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 6 – Operating expenditure*, Draft decision, November 2024, p 37.

[110] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 9 – Reference tariff setting*, Draft decision, November 2024, p 16.

[111] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 6 – Operating expenditure*, Draft decision, November 2024, p 40.

[112] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 9 – Reference tariff setting*, Draft decision, November 2024, pp 17-18.

[113] AER, *Jemena Gas Networks (NSW) access arrangement 2025 to 2030 (1 July 2025 to 30 June 2030), Attachment 9 – Reference tariff setting*, Draft decision, November 2024, p 18.

- reduces JGN's opportunity to recover its efficient costs.

AER's draft decision leads to prices that are below avoidable cost

Rule 94(3) of the NGR includes a provision that, for each tariff class, the revenue expected to be recovered should lie between:[114]

- an upper bound representing the stand alone cost of providing the reference service to customers who belong to that class; and

- a lower bound representing the avoidable cost of not providing the reference service to those customers.

We explain in section 6.1.1 above that JGN has proposed a customer connection abolishment charge of $1,472 per meter, which recovers the full cost of the abolishment service from the requesting customer. As such, JGN's proposed abolishment charge reflects the avoidable cost of not providing the reference service to customers requesting an abolishment.

The AER's draft decision to set the overall small customer connection abolishment tariff at $250 per meter results in a price that is below its avoidable cost, which NGR rule 94(3) states should be the lower bound of a reference tariff. By consequence, the AER's draft decision in relation to the abolishment charge is likely to be inconsistent with rule 94(3) of the NGR.

AER's draft decision is not in the long term interests of gas consumers

We explain in section 3.1 above that the NGL includes the NGO, which focuses on the long term interests of gas consumers. However, the AER's draft decision to set an abolishment charge below JGN's avoidable cost and, thereby, partially to socialise JGN's abolishment costs is unlikely to promote the long term interests of gas consumers. We explain our reasoning for this below.

In section 3.1 above, we explain that prices that fall between avoidable and standalone cost promote the long term interests of gas consumers by providing market signals that incentivise efficient decision-making by service providers and gas consumers.

JGN's user pays approach results in cost reflective prices that promote efficient outcomes, since an individual consumer will request the abolishment service only if the benefits that they derive from the service are greater than the corresponding cost of providing the service.

In contrast, the AER's draft decision can be expected to incentivise inefficient levels of abolishment, including where the requesting customer derives fewer benefits from the service than the cost that JGN incurs in providing the service. This is because the cost implications of customers' decisions will be imposed either on other customers through partial socialisation, or on JGN, if it cannot recover these costs from other customers.

As a result, future customers are likely to face higher prices associated with the recovery of abolishment costs from current customers who disconnect. This is not in the long term interest of gas consumers.

Further, the AER's proposed approach is likely to compound the harms associated with its decision to refuse JGN's proposed adjustment of its depreciation schedule. Specifically, the AER:

- cites pricing outcomes to support providing a lesser rate of recovery of JGN's sunk assets; but

- decides to require partial socialisation of abolishment costs, which increases prices for customers who remain on JGN's gas network.

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[114] NGR version 82, rule 94(3).

These decisions will result in compounding harm to future customers remaining on JGN's gas network, who must pay for:

- residual abolishment costs created by customers who disconnect; and
- residual sunk costs that are no longer recovered from departing customers.

AER's draft decision reduces JGN's opportunity to recover its costs

We explain in section 3.3.1 above that the revenue and pricing principles require JGN to have a reasonable opportunity to recover at least its efficient costs. Specifically, the NGL states:[115]

> A scheme pipeline service provider should be provided with a reasonable opportunity to recover at least the efficient costs the service provider incurs in—
>
> (a) providing reference services; and
>
> (b) complying with a regulatory obligation or requirement or making a regulatory payment.

The AER's partial socialisation approach will serve to reduce JGN's opportunity to recover at least its efficient costs, since it further incentivises customers to disconnect from the network (discussed in the section above). This increases prices for gas distribution services for the remaining customers and encourages further disconnections, thereby increasing the risk that JGN will be unable to recover its efficient costs once prices for gas distribution services exceed its customers' maximum willingness to pay.

Further, the AER's draft decision to set an abolishment price below JGN's avoidable cost effectively reduces its opportunity to recover its efficient costs of providing abolishment services, which is inconsistent with the revenue and pricing principles. This compounds the magnifying effect of JGN's obligation to incur capital expenditure on its stranded asset risks and ability to recover its sunk assets.

6.2   Recovery of decommissioning costs

The ultimate costs JGN will bear should it shut down its network partially or entirely are those associated with decommissioning.

These decommissioning costs may be substantial, with JGN expected to incur decommissioning costs of $679 million under the 'electric tortoise' scenario. JGN's future of gas model assumes these costs start to be incurred from the 2039-40 regulatory year onwards.[116]

However, in its draft decision, the AER has not considered the implications of JGN having to incur future decommissioning costs as demand for its gas distribution services continues to decline.

Given the substantive magnitude of decommissioning costs that JGN and future gas consumers may face, it is important to recognise the significant uncertainty regarding how decommissioning costs will be recovered under the current regulatory framework. However, the faster rate of depreciation proposed by JGN could serve to reduce the disparity in costs borne by current and future consumers.

At present, the NGR does not include provisions for decommissioning costs associated with any potential shutdown of gas distribution networks. This causes considerable uncertainty regarding how decommissioning and other costs associated with a network shutdown will be recovered.

Under the current regulatory framework, JGN will be required to undertake decommissioning activities to ensure the safety of its network. This would render the cost of decommissioning unavoidable, which may suggest that the reference tariff for decommissioning be set to the stand alone cost of providing

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[115] NGL, s 24(2).

[116] See: Jemena Gas Networks, *JGN - Att 7.8M - Future of gas model - 20240628 – Public*, Spreadsheet, 29 June 2024, worksheet 'Output|Stranding risk and AD', row 330.

decommissioning services to customer who remain connected to the network in line with NGR rule 94(3)(a).[117] However, to the extent JGN must recover these costs from its future customers, rather than seeking contributions from current customers before they leave the gas network, then this will further increase the disparity of costs incurred by current and future customers.

Allowing JGN to adapt the pace of depreciation of its capital base for the 2025-30 regulatory period would reduce some of this disparity in the costs incurred as between current and future customers.

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[117] NGR version 82, rule 94(3)(a).

A1.   Additional smoothed price path charts

In this appendix we present additional smoothed price path charts referred to in section 4.2.

Figure A.1: Distribution price paths for residential customers by regulatory period, 2025-26 to 2044-45 (electric tortoise scenario)
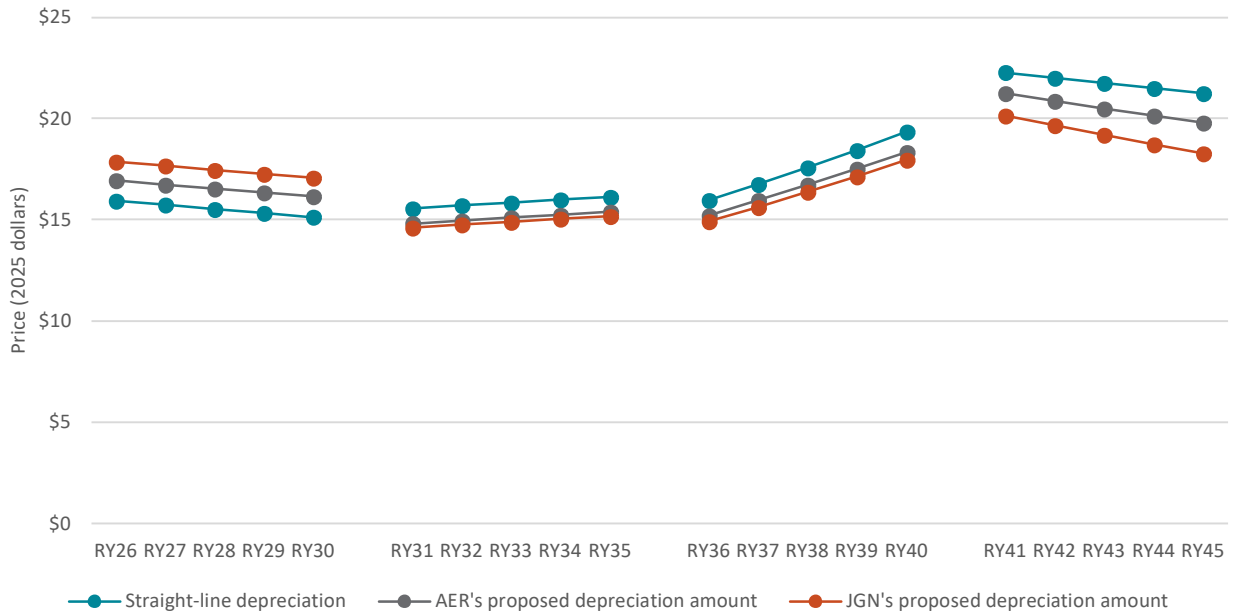
Source: HoustonKemp analysis of Jemena's future of gas model.

Figure A.2: Distribution price paths for commercial customers by regulatory period, 2025-26 to 2044-45 (electric tortoise scenario)
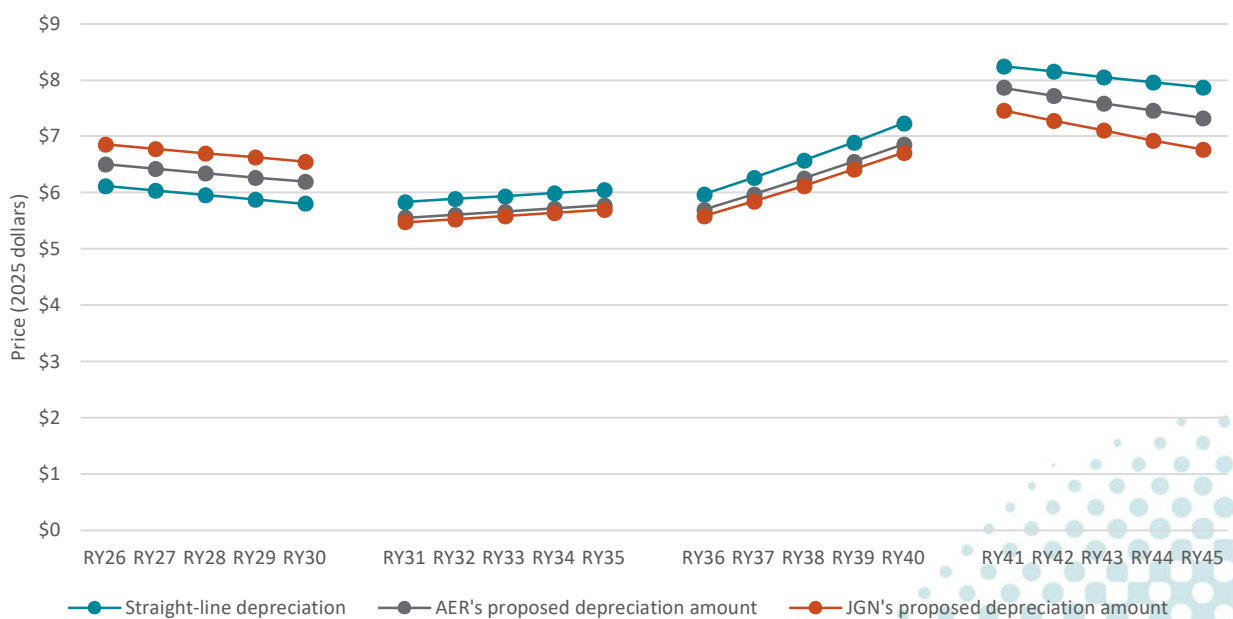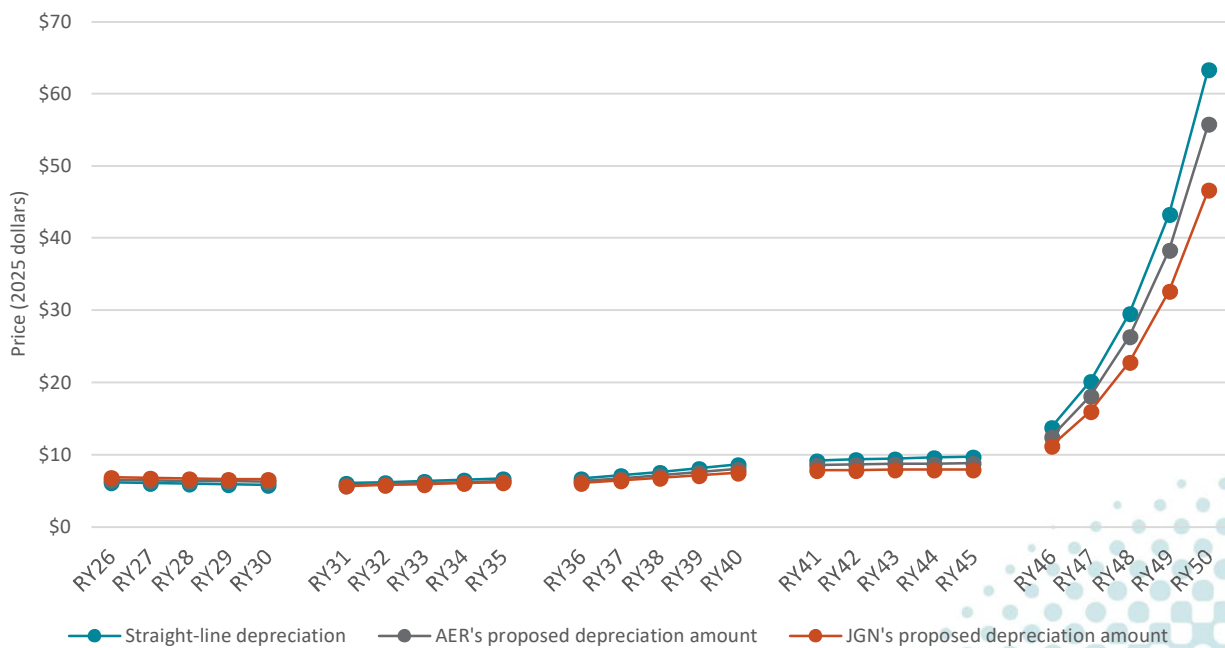

Source: HoustonKemp analysis of Jemena's future of gas model.

Figure A.3: Distribution price paths for residential customers by regulatory period, 2025-26 to 2049-50 (electric hare scenario)
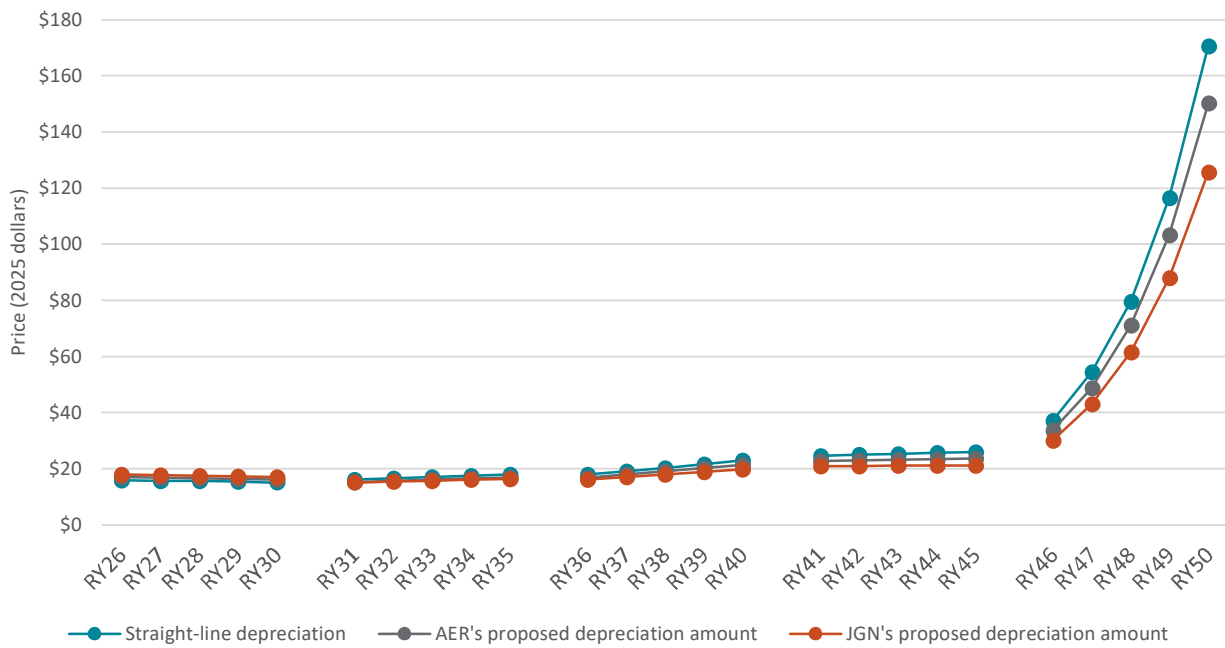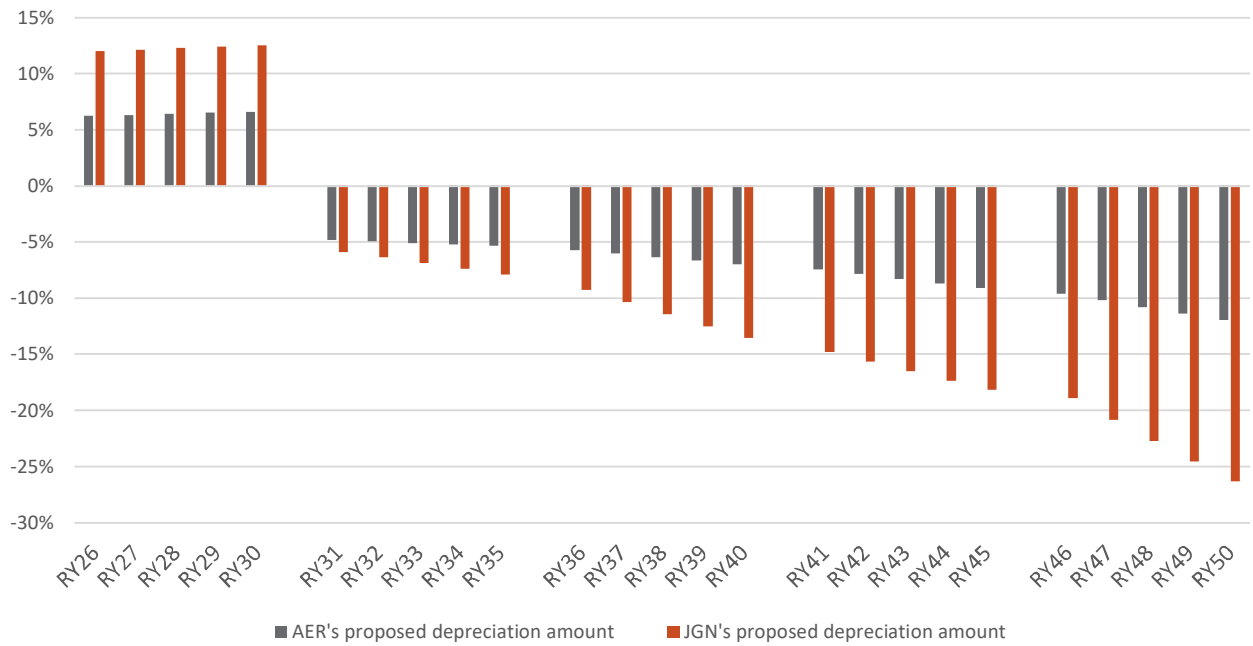

Source: HoustonKemp analysis of Jemena's future of gas model.

Figure A.4: Distribution price paths for commercial customers by regulatory period, 2025-26 to 2049-50 (electric hare scenario)


Source: HoustonKemp analysis of Jemena's future of gas model.

Figure A.5: Distribution price paths under alternative adjusted depreciation approaches, percentage increment to real straight-line depreciation (electric hare scenario)

Note: Price differences are the same for residential and commercial customers under both electrification scenarios.
Source: HoustonKemp analysis of Jemena's future of gas model.

Figure A.6: Average annual commercial customer bill using smoothed prices (electric tortoise scenario)
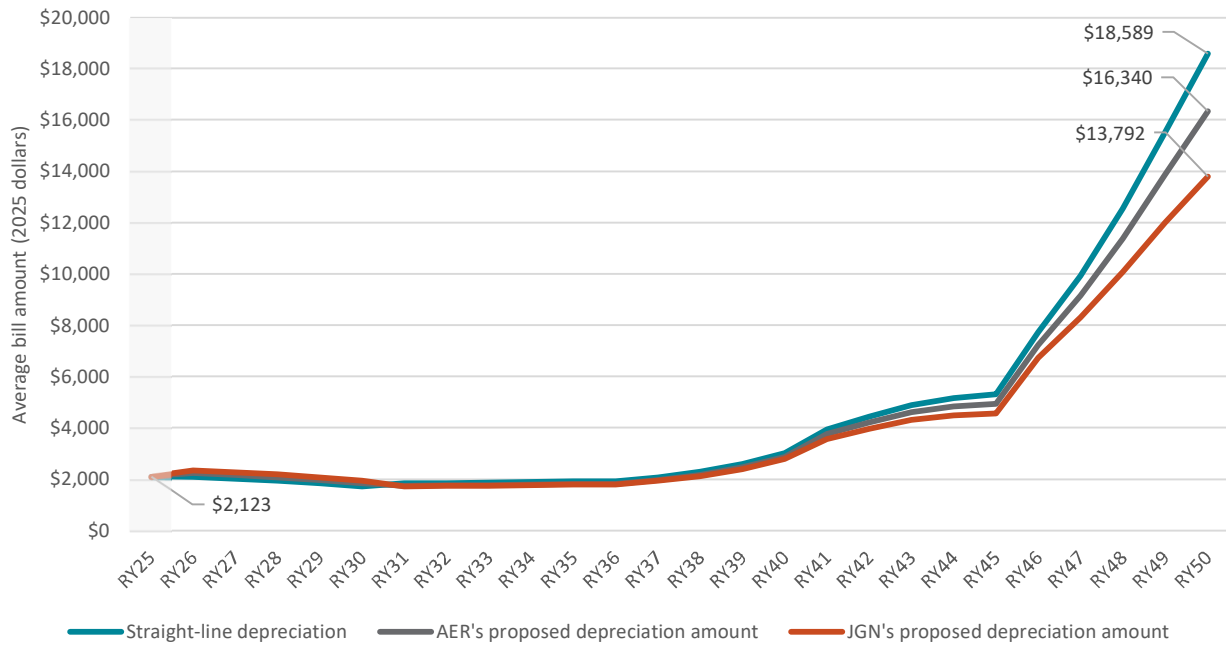

Note: We calculate the average annual residential customer bill for each year by multiplying the smoothed prices by the average of JGN's forecast consumption for residential customers in each regulatory year.
Source: HoustonKemp analysis of Jemena's future of gas model.

A2.   Charts on additional willingness to pay

This annexure is comprised of an additional price constraint chart referred to in section 5.3.

We plot JGN's unsmoothed residential customer prices without accelerated depreciation against customers' willingness to pay for gas under the 'electric hare' scenario in Figure A.7. We note that JGN has modelled a zero price in RY50 for residential customers under this scenario.
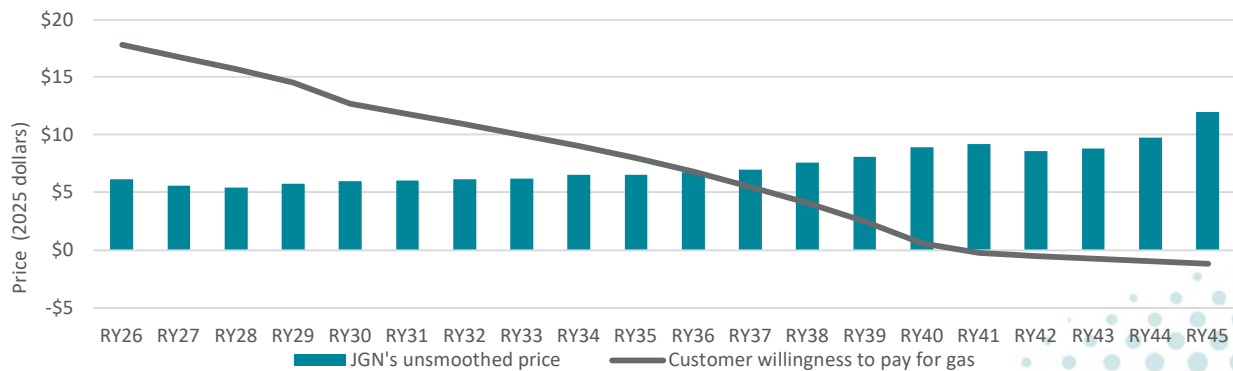
Figure A.7: JGN's unsmoothed residential customer prices without accelerated depreciation against customer willingness to pay (electric hare scenario)
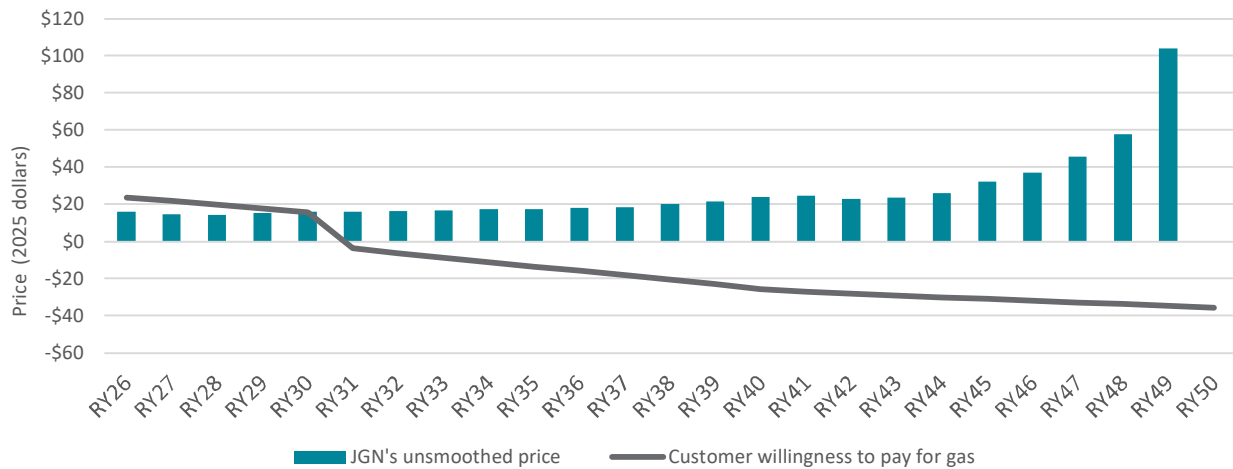
Source: HoustonKemp analysis of Jemena's future of gas model.

We plot JGN's unsmoothed commercial customer prices without accelerated depreciation against customers' willingness to pay for gas under the 'electric hare' scenario in Figure A.8.Figure A. Note that the RY46 to RY50 regulatory period has been excluded for clarity given the significantly higher price determined for RY50 given JGN's unsmoothed price exceeds customers' willingness to pay in the late 2030s.

Figure A.8: JGN's unsmoothed commercial customer prices without accelerated depreciation against customer willingness to pay (electric hare scenario)

Source: HoustonKemp analysis of Jemena's future of gas model.