Jemena Gas Networks (NSW) Ltd

2025-30 Access Arrangement Proposal

Attachment 7.3

Depreciation approach

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Abbreviations

AA	access arrangement
AD	accelerated depreciation
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
ARENA	Australian Renewable Energy Agency
CALD	culturally and linguistically diverse
CCP31	Consumer Challenge Panel 31
CESS	capital expenditure incentive scheme
ECGM	East Coast Gas Market
ERA	Economic Regulation Authority
DBNGP	Dampier to Bunbury Natural Gas Pipeline
FoG	Future of Gas
GCC	Global Cooksafe Coalition
GSOO	Gas Statement of Opportunities
JGN	Jemena Gas Networks
NGL	National Gas Law
NGO	National Gas Objective
NGR	National Gas Rules
NPV	Net Present Value
PTRM	post-tax revenue model
RAB	regulated asset base

Overview

Our proposed regulatory depreciation for the 2025–30 period totals $658.2M and retains use of straight-line depreciation using the year-on-year tracking method and our current standard asset lives for existing asset classes.

The $658.2M includes $300M of accelerated capital recovery on our medium pressure service assets, which is part of our complementary package of initiatives to future gas uncertainty as consulted on in our Draft 2025 Plan.

In addition to the engagement that shaped our Draft 2025 Plan, when consulted on the $300M accelerated capital recovery after the Draft 2025 Plan, 84% of our Customer Forum members voted for live with, like or love, with 37% of these customers also considering $500M would be preferable.

In its 2021 AER Information Paper - Regulating gas pipelines under uncertainty the AER concluded that: '*Adjusting regulatory depreciation is the most accessible regulatory tool we currently have in managing demand uncertainty and influencing the trajectory of future gas access prices, notwithstanding that there are other options available*.'

Every gas access arrangement (**AA**) revision since JGN's 2020 AA revision proposal that has sought accelerated capital recovery as a response to future gas uncertainty under the National Gas Rules (**NGR**) has had an amount of accelerated depreciation approved. This includes:

- the Australian Capital Territory distribution network decision by the Australian Energy Regulator (**AER**) which shortened standard asset lives on high pressure mains by 30 years (37.5%) and medium pressure mains and services by 20 years (40%)
- the Western Australian Dampier to Bunbury Natural Gas Pipeline (**DBNGP**) decision by the Economic Regulation Authority (**ERA**) which accelerated depreciation of DBNGP's pipeline assets to reflect an effective economic life end date of 2063 and more disaggregated asset categories for shorter-lived assets
- the Victorian gas distribution networks decision by the AER which approved an amount of accelerated depreciation it calculated to achieve to a capped real price outcome determined by the AER.

Our proposal to accelerate capital recovery therefore aligns with current regulatory practice for addressing future gas uncertainty.

This attachment is structured to explain:

- Our forecast of depreciation and its basis in section 2
- The context and drivers for proposing accelerated depreciation in section 3
- How much accelerated depreciation we are proposing now in section 4
- How we are responding to the AER's feedback provided during early signal pathway and draft plan in section 3.4.2.4.
- How we considered customer effects in section 5
- Our complementary measures in section 6
- Our supporting materials, including our statement of compliance in section 7.

1. Introduction

This section explains the purpose, scope and structure of this attachment.

1.1 Purpose

This attachment explains our proposed approach to depreciation for the 2025-30 period and demonstrates how this proposal:

- Allows us to deal with the uncertainty around demand for gas usage and energy policy
- Has been shaped by our customers and stakeholder engagement
- Addresses the relevant requirements of the National Gas Rules (**NGR**)
- Responds to the Australian Energy Regulator's (**AER**'s) accelerated depreciation expectations set out in its *Information Paper - Regulating gas pipelines under uncertainty - 15 November 2021* (**AER information paper**).

1.2 Scope

The scope of our depreciation proposal covers:

- The amount of regulatory and straight-line depreciation to be included in our 2025-30 period revenue requirement
- How we have responded to AER's feedback provided to us as part of early signal pathway and draft plan
- The price impact of our depreciation (including accelerated depreciation) proposal on our customers
- The asset lives that we propose to apply to new investments via our standard asset lives proposal
- The method of calculating depreciation, including our proposal to retain the year-by-year tracking method to depreciate existing assets
- The depreciation approach for the subsequent roll forward of our regulated asset base (**RAB**).

1.3 Structure

This attachment is structured to explain:

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- How much accelerated depreciation we are proposing now in section 4
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Note this attachment, like our engagement program, is (apart from the standard forecast depreciation approach) also informed by our Future of Gas (**FoG**) model. To understand plausible future scenarios comprehensively and the different risks they entail, we developed the FoG model. The crux of this long-term model is based on economic

theory by Crew and Kleindorfer (1992)[1], which looks at appropriate levels of depreciation in situations where a current monopolist is likely to face competition in the future as the price of substitutes (electricity) fall. This model has been used extensively for assisting our Expert Panel and Advisory Board discussions as well as subsequent customer engagements. The FoG model has been provided to and discussed with the AER as part of the Early Signal Pathway engagement. We provide more details on our FoG analysis in *JGN - Att 7.4 - Future of gas analysis*. Note that we use the term Future of gas model in this document, with GasNetworks2050 model being another term used during our engagement when referring to the same model.

Supporting attachments

Table 1.1: List of supporting attachments

Attachment	Name	Author
2.1	Consumer Challenge Panel - feedback and response	JGN
2.2	Customer forum engagement report	BD Infrastructure
2.3	Expert Panel Report	KPMG
2.5	Appendix C to KPMG Advisory Board Report	JGN
2.6	Advisory Board Chair - Letter of Support	JGN
2.8	Advisory Board Chair - Letter of Support	newDemocracy
3.2	Small Business Retailer and Large User engagement report	JGN
3.3	Sagacity and JD report	Sagacity and JD Insights
4.1	Emissions reduction program	JGN
5.1	Capital expenditure	JGN
7.3M	Depreciation model	JGN
7.4	Future of gas analysis	JGN
7.5	Long term demand forecast report	Blunomy
7.8M	Future of gas model	JGN
10.1	Pricing	JGN

[1] Crew, M and Kleindorfer, P, *Economic Depreciation and the Regulated Firm under Competition and Technological Change, Journal of Regulatory Economics, 4(1), 1992*

2. Our forecast of depreciation and its basis

This section explains our proposed amount of 2025-30 depreciation, the depreciation methods and asset life assumptions underpinning it, and how these compare to the equivalent elements of our 2020-25 approach.

2.1 Forecast deprecation amount

Our proposed regulatory and straight-line depreciation amounts for the 2025–30 period are set out in Table 2.1. We have separately identified the additional straight-line depreciation that results from our accelerated depreciation proposal discussed further in sections 3 and 4.

Table 2.1: Forecast depreciation ($2025 millions)

	2025-26	2026-27	2027-28	2028-29	2029-30	Total
Straight-line depreciation						
Standard	163.6	168.6	175.1	180.5	184.2	**872.1**
Accelerated depreciation	60.0	60.0	60.0	60.0	60.0	**300.0**
Total	**223.6**	**228.6**	**235.1**	**240.5**	**244.2**	**1,172.1**
Less indexation	(105.0)	(104.1)	(103.6)	(102.0)	(99.1)	**(513.9)**
Regulatory depreciation	**118.6**	**124.5**	**131.6**	**138.4**	**145.1**	**658.2**

Note: Totals may not sum due to rounding.

2.2 Our depreciation approach

Our proposed depreciation approach for the 2025–30 period access arrangement (**AA**) includes:

- The straight line method of calculating depreciation and the year-by-year tracking approach to depreciating assets in the capital base
- The standard asset lives for new investments we make in existing asset classes and new asset classes
- Proposed accelerated depreciation relating to uncertainty around the future of gas networks
- The use of forecast depreciation for the subsequent roll forward of our RAB in 2030.

2.2.1 Asset lives for existing asset classes

We propose to retain our effective existing asset lives and standard asset lives for existing asset classes. These are set out in Table 2.3. We refer to the existing asset lives as 'effective' because we are proposing to apply the year-by-year tracking method to depreciate our opening RAB, which does not require remaining lives to be used within the PTRM. We have estimated these effective lives within our depreciation module (see *JGN - Att 7.3M - Depreciation model*).

2.2.2 Our new asset classes

This section explains our proposal to establish a new asset class to allow for accelerated recovery of capital.

We are also considering whether to create a separate asset category for renewable capital expenditure and undertaking analysis of the length of connections' usage by renewable producers and the impact on economic lives. The suppliers of biomethane and renewable hydrogen will connect to our network for the life of their production plant. These plants are expected to have a design life of 30 years for hydrogen and 25-40 years for biogas depending on variability of the life of their feedstock. There is presently no customer commitment to renew those assets at the end of their technical life.

To avoid gas consumers paying for these connection assets after the production ceases and they no longer derive low emission gas benefits from those assets, we may need to propose an asset class that aligns to the average production facility life.

2.2.2.1 Future of gas asset class

To give effect to our accelerated depreciation proposal, we propose a future of gas asset class with a 5 year standard asset life, labelled 'Future of Gas – MP Services', that we apply accelerated depreciation to over the 2025–30 period.

The assets assigned to this new asset class for accelerated depreciation come from our medium pressure services (MP Services) asset class. This is because medium pressure is predominately utilised by residential customers which our future of gas scenario analysis demonstrates are at higher risk of stranding compared to the high pressure pipelines that service larger customers.

This approach is consistent with the future of gas asset classes established for the Victorian gas distribution networks to give effect to accelerated depreciation in their approved access arrangements.[2]

Section 4.3 explains how we calculate our proposed amount of assets to include in this new asset class.

2.2.3 Our depreciation method

2.2.3.1 Depreciation calculation method

We propose to retain the straight-line depreciation method employed in the AER's post-tax revenue model (**PTRM**) which we have applied using the year-by-year tracking method in the depreciation module for the 2025–30 period to depreciate existing assets and the PTRM for that period to depreciate new assets.

The AER approved our use of the year-by-year tracking method to depreciate existing assets over the 2020–25 period observing that it will result in a depreciation schedule that allows the reference tariffs to vary over time in a manner that would promote efficient growth in the market for reference services, allows assets to be depreciated only once and over their economic lives, and also allows for a service provider's reasonable needs for cash flow as required by NGR rules. 89(a)–(b) and (e).[3]

The AER has subsequently approved use of the year-by-year tracking method for other gas networks and issued templates for administering it which we have adopted.[4]

2.2.3.2 RAB roll forward method

We have used the 2020–25 forecast straight-line depreciation to roll forward our RAB consistent with operation of the capital expenditure incentive scheme (**CESS**).

We propose to also use forecast straight-line depreciation for the subsequent roll forward of our RAB in 2030 consistent with our proposal to retain the CESS for the 2025–30 period.

Equivalent to our 2020–25 AA, we have retained a fixed principle at clause 3.11(b) of our proposed 2025–30 AA to give effect to this.

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2 See for example, AER, Multinet Gas Networks Gas distribution access arrangement 1 July 2023 to 30 June 2028 Attachment 4 – Regulatory depreciation, June 2023, p.12.

3 AER, Attachment 4: Regulatory depreciation | Draft decision – Jemena Gas Networks (NSW) Ltd Access Arrangement 2020-25, Nov 2019 pp.32-33.

4 See for example, AER, Attachment 4 – Regulatory depreciation | Final decision – MGN Access Arrangement 2023–28, June 2023, p.6.

2.2.4 Summary of asset lives

By the end of 2024-25, half of our existing assets have remaining lives exceeding 25 years (i.e., beyond 2050), as shown in Table 2-2 below. Given the current uncertainty surrounding the future of gas outlook, it presents significant asset stranding risks for JGN.

Table 2.2: Asset lives of our existing asset base

Assets by remaining asset lives	Closing RAB as at 30 June 2025 ($2025, M)	% of RAB
Long life assets (over 25 years)	1,933	50%
Medium life assets (10 to 25 years)	1,532	40%
Short life assets (below 10 years)	405	10%

The closing RAB as at June 2025 and the effective remaining asset lives for each asset class is detailed in Table 2-3 below.

Table 2.3: Asset lives for existing and new asset classes

Asset Class Name	Closing RAB as at June 2025 ($2025 millions)	Effective existing asset life as at June 2025 (years)	Standard life (years)
Trunk Wilton-Sydney	52.37	29.4	80.0
Trunk Sydney-Newcastle	83.21	37.9	80.0
Trunk Wilton-Wollongong	8.88	31.8	80.0
Contract Meters	12.10	13.2	15.0
Fixed Plant - Distribution	205.26	42.6	50.0
HP Mains	564.78	54.2	80.0
HP Services	21.23	43.1	50.0
MP Mains	1,191.13	23.6	50.0
MP Services	948.79	35.0	50.0
Meter Reading Devices	56.09	11.3	15.0
Country POTS	13.17	21.1	50.0
Tariff Meters	251.24	13.0	15.0
Computers - IT Infrastructure	(2.51)	2.6	5.0
Fixed Plant	1.22	5.5	10.0
Furniture	(0.69)	5.0	10.0
Land	8.50	n/a	n/a
Low value assets	-	n/a	10.0
Mobile Plant	10.60	7.8	10.0
Vehicles	1.36	4.4	6.0
Future of Gas MP Services	349.93	5.0	5.0
Leasehold Improvements (SL)	6.12	5.4	10.0
Buildings (SL)	45.86	40.3	48.0
Software - Inhouse (SL)	39.36	3.8	5.0
Equity raising costs	2.32	39.9	43.1

3. The context and drivers for accelerated depreciation

This section explains factors that influence the expected economic lives of our assets and our proposal to accelerate recovery of $300M depreciation in the 2025–30 period. This includes:

- Drivers of uncertainty for the future of distributed gas in NSW
- The plausible future scenarios for our network's role in meeting the NSW's 2050 net zero policy goal, and how we can respond to the challenges the sector faces
- What this means for our current and future customers and investors
- Why accelerated depreciation is the preferable response under the National Gas Objective (**NGO**) and AER guidance
- Why now is the right time to accelerate depreciation.

3.1 Context and drivers

Gas uncertainty is upon us. The energy system in NSW, Australia and globally is undergoing a once-in-a-generation transformation. We are operating in a period of significant uncertainty surrounding the future role of gas networks in the NSW energy landscape.

3.1.1 What we know

Australia is committed to net zero emissions

Following the United Nations Paris Agreement, struck in December 2015 with 195 countries, Australia has firmed its commitments to reduce greenhouse gas emissions. In September 2022, the Federal Government formalised the pledge for Australia to achieve net zero emissions by 2050 and a 43% reduction below 2005 levels by 2030.[5] This will be enforced by the Safeguard Mechanism, which introduces a new requirement for high-emissions facilities, including JGN, to reduce their baseline emissions.[6]

Specific recent Commonwealth gas strategy and fiscal policy measures affecting the future of gas and our energy market emissions reduction transition are discussed within the context of our plausible future scenarios at section 3.2.2.

NSW is committed to net zero emissions

The NSW Government has also set a net zero emissions targets by 2050 along with even more ambitious interim targets of 50% reduction below 2005 levels by 2030 and 70% below by 2035.

Consistent with this policy, the NSW Government has changed its BASIX development standards to support further electrification of new developments. BASIX is part of NSW's development application process. It mandates building standards to achieve reductions in water and energy consumption and greenhouse gas emissions. Recent BASIX changes make it easier for all electric homes to meet BASIX standards and require solar panels to be installed to supplement a 5-star gas hot water system (which was commonly used to meet the required energy standards).

NSW has introduced a renewable hydrogen target of 8 PJ a year under its New South Wales Renewable Fuel Scheme. However, this low-emission renewable gas is not required to be shared with NSW customers via our distribution network and the NSW Short Term Trading Market.

Our regulatory objectives have been updated to account for emissions targets

JGN, energy market participants, our regulator and market bodies are now bound to an advanced modification of the National Gas Objective. The National Gas Objective as stated in the National Gas Law (**NGL**) is now:

5 AEMC, Guide Emissions targets statement, 1 February 2024, p.1.

6 The Safeguard Mechanism

"to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to:

- *price, quality, safety, reliability and security of supply of natural gas; and*
- *the achievement of targets set by a participating jurisdiction—*
  - *for reducing Australia's greenhouse gas emissions; or*
  - *that are likely to contribute to reducing Australia's greenhouse gas emissions."*

(emphasis added for the modifications)

Apart from investing in low-emission renewable gas connection capex our response to this incorporation of emission reduction objectives also includes lowering incentives in our tariffs to increase gas volumes. We have done this by proposing to reduce the number of declining consumption blocks and adopting a hybrid tariff variation mechanism.[7]

Some jurisdictions are implementing bans on new gas connections

Victoria and the ACT have introduced bans on new gas connections. While to date, the NSW Government has ruled out a similar ban, some local councils located within our JGN network have either proposed or implemented bans on new gas connections.[8]

In NSW, our demand forecasters are predicting we will connect 45% less customers over the 2025-30 period, primarily due to decarbonisation of the electricity system and policy changes.

NSW's gas market context is more competitively constrained than cooler climate networks

Notwithstanding policy differences between NSW and the Victorian and ACT jurisdictions that the AER has already approved accelerated depreciation for, a key contextual difference affecting JGN is its market context.

NSW is a warm temperate climate where our 1.5 million customers average gas use is already well below that of Victoria's 2.3 million customers and the ACT's 0.1 million customers.[9] The AER recently observed differences in household consumption across the gas distribution jurisdictions it regulates as follows:

The average per annum consumption for a 4 person household by state:

- *Victoria – around 56,798 MJ per annum.*
- *Australian Capital Territory – around 43,558 MJ per annum.*
- *New South Wales – around 24,160 MJ per annum.*
- *South Australia – around 22,750 MJ per annum.*[10]

7 See *JGN Att - 10.1 – Pricing* for more details.

8 Waverly Council, City of Sydney, Parramatta, Canterbury-Bankstown have all proposed or implemented bans on new gas connections.

9 Victorian gas customers are made up of 756,668 for Australian Gas Networks (Victoria and Albury), 804,690 for Ausnet Services, and 721,162 for Multinet Gas, as reported by those networks in their regulatory information notice (**RIN**) responses to the AER for the year ended 30 June 2023. ACT gas customers include the 154,604 customers reported by Evoenergy in its RIN response to the AER for the same year.

10 AER, Final decision: Review of gas distribution network reference tariff variation mechanism and declining block tariffs, October 2023, p.11.

Lower connection numbers and lower average use both mean that the same dollar amount of accelerated depreciation will have a higher bill impact in NSW than it would in Victoria. For example, the Victorian decisions approved a combined total amount of accelerated depreciation of $333.30M ($2022-23)[11] which was set to achieve real network bill impacts of 1.5% per year over the 2023–28 period (before incentive mechanisms are factored in). NSW's market and customer context means the equivalent dollar amount would have required a further 0.76% annual increase in real bills over the 2025–30 period above what we are proposing.[12]

Major gas retailers are implementing programs to encourage electrification

Our largest NSW gas retailer, AGL, has launched its Electrify Now platform to AGL and non-AGL customers, helping households to understand the potential bill savings and carbon reductions of electrifying their homes by providing personalised information drawn from Consumer Data Right information for the most impactful upgrades.

NSW developers are phasing out gas

The property development industry is increasingly committing to stop using and retrofit away from gas in their NSW properties. Key examples includes the majority of private property developers active in the state, with trade journal Build Australia reporting in 2023 that:

> *Frasers Property Australia, Cbus Property, Barangaroo's International Towers and the Powerhouse Museum group have pledged to exit gas in favour of electric cooking. With existing commitments from property giants Lendlease and GPT, this takes the combined assets and funds under management of property companies pledging off gas for cooking to at least $127 billion.*
>
> *The organisations featured have signed on as partners of the Global Cooksafe Coalition (GCC), making a commitment in OECD countries to phase gas out of kitchens in new developments by 2030 and all-electric retrofits of existing properties by 2040.*[13]

This trend is being seen in NSW public housing too, with new developments and social housing redevelopments going all electric, including Macquarie Park, Ivanhoe Estate, and Figtree Hill

Individual developers are committing to rapid and ambitious decarbonisation plans that will cease gas use, including Mirvac - Planet positive: Mirvac's plan to reach net positive carbon by 2030. This plan sets out how Mirvac will achieve its carbon target, including by ceasing reliance on natural gas for new builds and transitioning away from gas assets in existing buildings where replacement is economic (e.g., at end of life).

The Gas Statement of Opportunities is forecasting gas decline

Each year the Australian Energy Market Operator (**AEMO**) publishes the Gas Statement of Opportunities (**GSOO**). The GSOO provides AEMO's forecast of annual gas consumption and maximum gas demand, and reports on the adequacy of central and eastern gas markets to supply forecast demand over a 20-year outlook period. The GSOO's purpose is to provide information to assist registered participants and other persons in making informed decisions about investment in the East Coast Gas Market (**ECGM**).

Given the GSOO's purpose is to inform investment decisions, it is directly relevant to assessing the investment decisions of both JGN and our gas customers.

In the 2024 GSOO AEMO observes that:

> *Forecast gas consumption for commercial, residential and industrial users is expected to decline over the outlook period to 2043. Residential and small commercial consumption is forecast to slightly decline in the short term, with more significant fuel-switching to electricity in the medium to longer*

11 The $333.30M (2022-23) is estimated from the AER's 2023 decisions for Multinet Gas, AGN (Victoria and Albany), and AusNet Services using the final year adjustments included in the Roll-Forward Models for those gas networks. For instance, $174.62M (2022-23) of that amount is attributed to AGN (Victoria and Albury), which was calculated by multiplying the final year adjustment (of $197.8M) by 1 less 5 divided by the remaining life of the mains and services asset class (of 44 years).

12 We estimated this impact by replacing the $300M ($2024-25) with the $333.30M ($2022-23), or $357.90M ($2024-25), and then updating the price path in the Step 1 version of our PTRM.

13 Build Australia, Property businesses worth $127 billion pledge off gas for cooking, 19 July 2023.

> *term as the economy transitions to meet net zero emissions goals. Large commercial and industrial sectors are forecast to remain relatively stable, however some large industrial loads are forecast to decline, particularly in Queensland.*[14]

3.1.2 What we don't yet know

While the commitments affecting JGN's network area are now legislated, we still don't know exactly how transition will occur including what role our NSW gas network will play. Major uncertainties include:

- The scale and pace of electrification by our different customer types
- The scale and pace and longevity of production for various types of low-emission renewable gas
- Whether and if so when and at what scale any of the above will be hastened by further government policy interventions.

Government decarbonisation policies, improvements in energy efficiency, constrained gas supply, volatile wholesale gas prices, and growing competition from renewable electricity are all placing pressure on the role of distributed natural gas in the energy mix.

The Australian Energy Market Operator forecasts residential and small commercial consumption to gradually decline in the shorter term, with electrification to reduce natural gas usage more significantly in the medium to longer term as the economy transitions to meet net zero emissions by 2050. Future demand for gas networks is expected to decline due to changing consumer behaviours, and as a direct result of government policy which is focussed on electrification of households and small businesses. This may lead to parts of our network becoming stranded, with potential implications for customers who remain dependent on gas.

3.2 Plausible scenarios for our net zero future

Because the role of gas could vary significantly in the future, scenarios provide an important tool to highlight opportunities and risks to inform our planning and actions in times of uncertainty. They are also a key expectation of our regulator. The AER's information paper for dealing with gas uncertainty states that:

> *To demonstrate stranded asset risk, we expect regulated businesses to provide plausible future energy scenarios that covers a spectrum of outlooks from the most pessimistic to the most optimistic for their networks, and to estimate the likelihood (probability) of each scenario.*[15]

This section explains how we have developed and used our plausible scenarios to meet the AER's and our customers' expectations.

3.2.1 Establishing plausible scenarios

In response to the uncertainty surrounding the future role of our gas network, we embarked on the Gas Networks 2050 engagement process (discussed in Chapter 2 of our Final Plan). This included establishing an Expert Panel to develop plausible future scenarios for the future NSW energy system.

Working with our Expert Panel we considered the possible contextual environment and sought to:

- Focus on uncertainties that are largely external and uncontrollable factors (e.g., electricity prices, decarbonisation pathways and paces, emerging technologies, the future of natural and low-emission renewable gases)
- Identify how the future may play out, to test what mitigation initiatives today offer the best chance of success tomorrow that's in the long term interest of customers.

[14] AEMO, Gas Statement of Opportunities, March 2024, p.6.

[15] AER, AER Information Paper - Regulating gas pipelines under uncertainty, 15 November 2021, p.45.

The Expert Panel's membership, process, deliberations and outcomes is detailed in *JGN - KPMG - Att 2.3 - Expert Panel Report*.

The Expert Panel's scenarios highlight plausible scenarios for the gas network out to 2050 with interim horizons for assessing response options of now to 2030, 2030-40 and 2040-50. While NSW does not have an announced gas substitution roadmap of the form in Victoria, NSW policy is evolving. Our Expert Panel included NSW government representation to support our scenarios being shaped by NSW government representatives' thinking, along with that of AEMO and other sector experts.

We then commissioned expert forecasters Blunomy to take the Expert Panel's scenarios to independently forecast customer demand and the overall energy prices under the four scenarios. This involved assessing for each scenario:

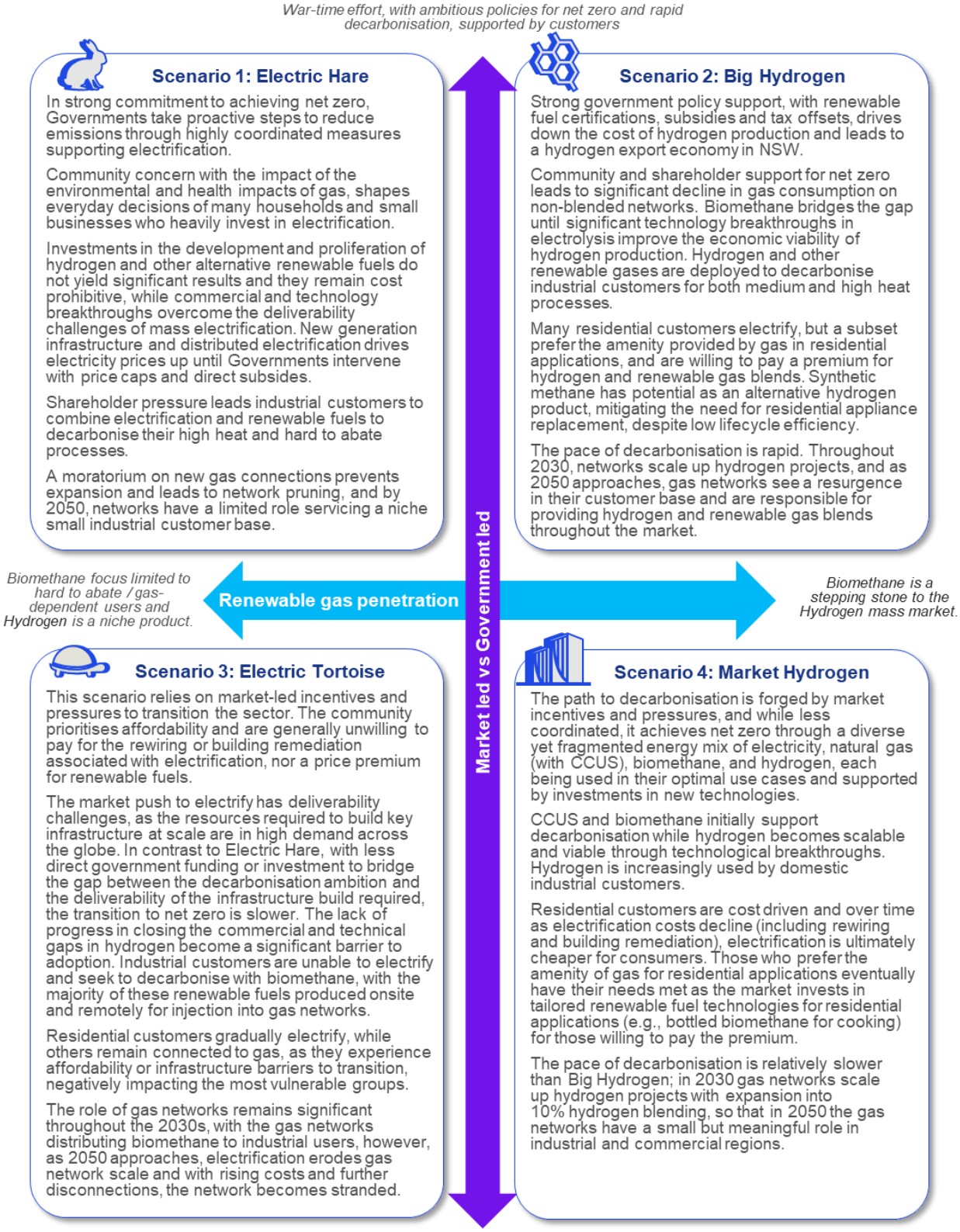
- Customer demand by customer type
- Gas blending and wholesale gas prices
- End-customer electrification costs and resulting willingness to pay for gas.

Blunomy's method and resulting forecasts were tested with our Advisory Board in March 2023 and its report is provided at *JGN - Blunomy - Att 7.5 - Long term demand forecast report*.

3.2.2 Plausible scenarios and their likelihood

The four plausible scenarios that our Expert Panel produced are summarised in Figure 3–1 and detailed in *JGN - KPMG - Att 2.3 - Expert Panel Report*.

Figure 3–1: Expert Panel plausible future scenarios

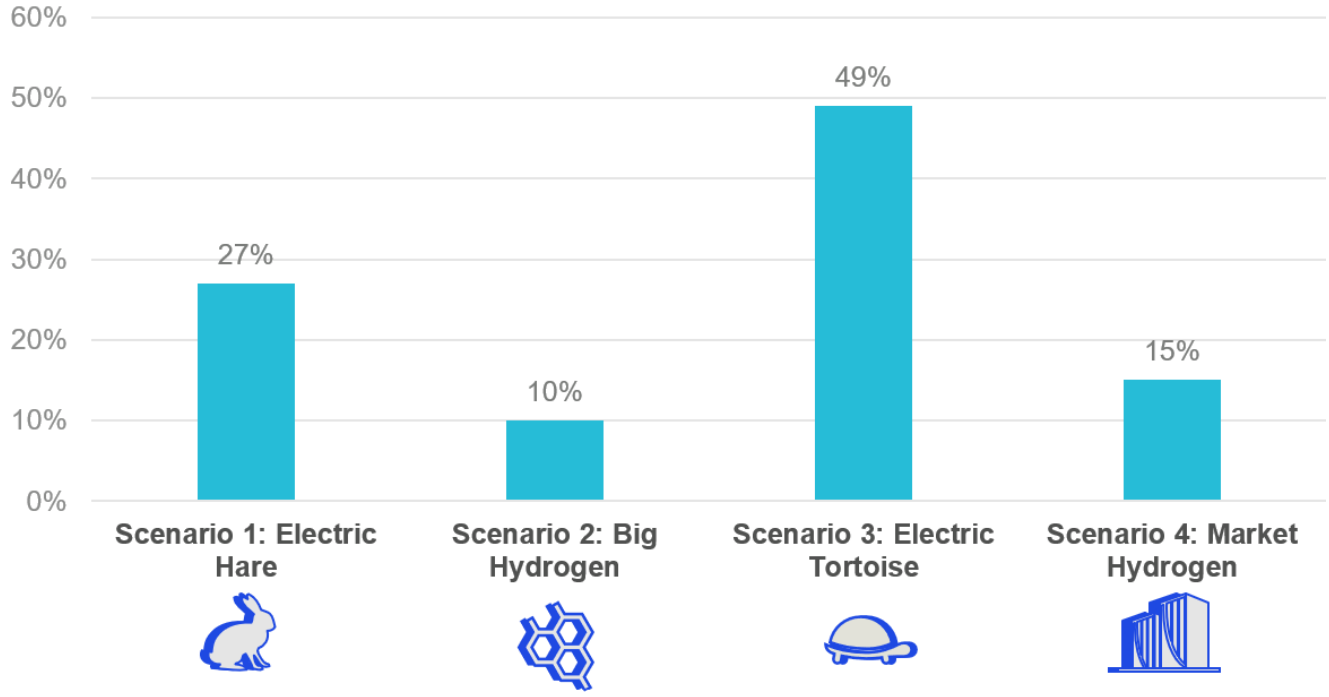


Source: KPMG, Gas Networks 2050: Future scenarios summary report. Final report; January 2023, p.7.

In accordance with the AER's information paper requirement to identify the relative likelihood of a given scenario, each Expert Panellist was invited to cast a vote on the relative likelihood of each scenario. This was done by allocating 100% across the four scenarios, based on their own qualitative assessment. It is noted that Dr Patrick Hartley, who participated in the Expert Panel in his role at CSIRO, requested to abstain from voting.

Based on the Expert Panellists' votes, the relative likelihood of each of the four scenarios is shown below.

Figure 3–2: Relative likelihood of each scenario



Source: KPMG, Gas Networks 2050: Future scenarios summary report. Final report; January 2023, p.23.

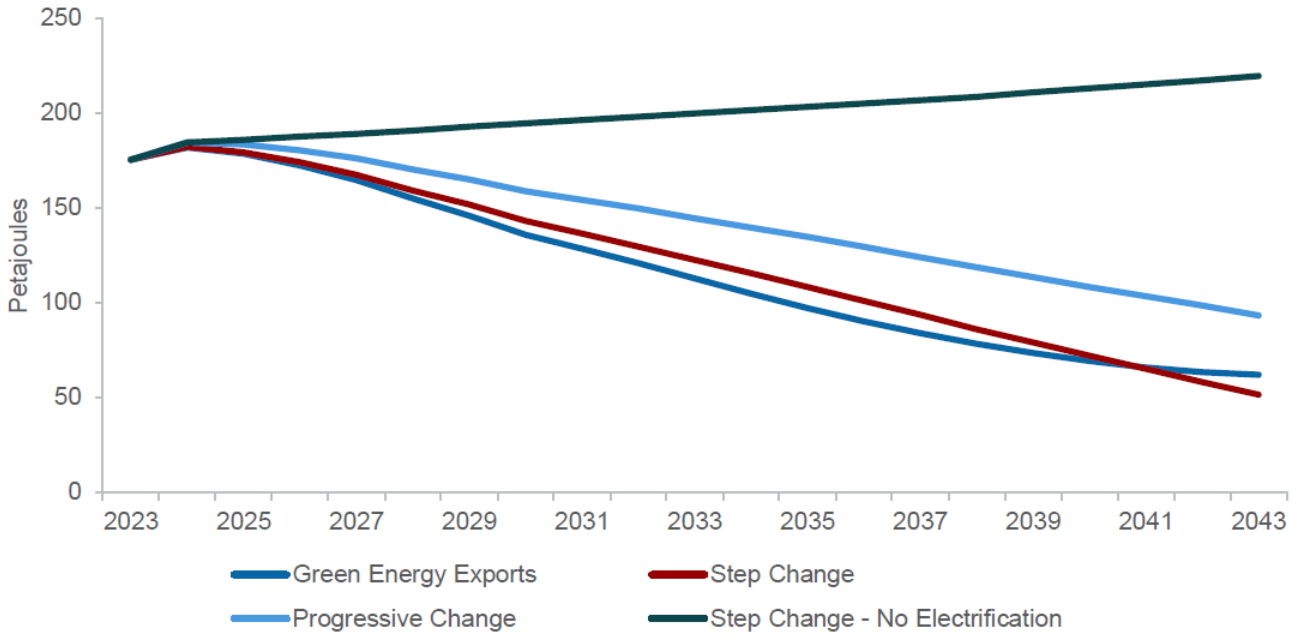
Since the Expert Panel developed these plausible scenario projections, the Commonwealth government has released its Future Gas Strategy in May 2024 and its 2023-24 and 2024-25 federal budgets. Below we examine how these developments are unlikely to have changed the relative likelihood of these scenarios.

The Future Gas Strategy predicts the largest gas declines to come from JGN's largest market segment in terms of customer numbers. It observed that:

> *The largest declines in gas demand on the east coast are forecast for commercial and residential buildings. Depending on the scenario, by 2043, domestic and small business consumption of gas will decline between 49% and 72% on 2023 levels. This is unless residential and commercial consumers are unable, or choose not to, electrify (figure 4). These projections assume an increase in the rate of electrification (the replacement of existing gas appliances with electric alternatives), and a reduction in the rate of new natural gas connections.*[16]

[16] Australian Government, Future Gas Strategy, May 2024, p.18.

Figure 3–3: Building demand for gas by scenario, 2023–43



Source: Australian Government, Future Gas Strategy, May 2024, Figure 4, p.18.

The Future Gas Strategy observes the same trend we see and explore in the two electrification scenarios about whether households will still need gas stating:

> *Energy efficient electrical appliances already exist and are readily available to replace the main household uses of natural gas: stovetops, hot water heating and space heating. Most households are likely to embrace opportunities to reduce their energy bills and emissions by switching from gas to electric appliances when existing appliances need replacing. This switch may not be technically or commercially practical in all situations. …*
>
> *The rising cost of remaining on the reticulated gas network can provide the economic incentive to transition for those able to control – and afford – the cost of switching. However, renters, those in community and social housing, and low-income households, have limited or no control over whether they electrify, even where they might want to transition.*[17]

We have also analysed the energy policy measures in the recent federal budgets against the policy settings the Expert Panel described for each plausible scenario. These are summarised Table 3.1. They show that the largest budget measure (by dollar value) aligns with the assumptions set for the Electric Tortoise scenario.

Table 3.1: Testing 2024-25 budget measures against policy settings described in the Expert Panel scenarios

Measures	Scenario alignment[18]
2024 budget allocates $3.5 billion in electricity bill relief for all Australian households and around one million small businesses. Timing is 1 year, 2024-25, though it is an expansion of the 2023-24 policy. From 1 July 2024, households will receive a total rebate of $300 and eligible small businesses will receive $325 on their electricity bills throughout the year.	This measure aligns with the 'Electric Tortoise' scenario which the Expert Panel voted as most likely. That scenario said of government policy: '*Policies reactive to price shocks, falls short of intervention on high conversion costs*.'

17 Australian Government, Future Gas Strategy, May 2024, p.41.

18 Based on alignment with the scenario narratives found in KPMG, Gas Networks 2050: Future scenarios summary report. Final report; January 2023, pp.15-18.

Measures	Scenario alignment[18]
2024 budget allocated $2 billion to the Australian Renewable Energy Agency (**ARENA**) for Hydrogen Headstart round 2. This policy builds on the 2023 budget measure of Hydrogen Headstart round 1. Under ARENA's guidelines, Hydrogen Headstart is only targeting new large-scale production facilities. So far, eligibility is >50MW minimum single site deployment, with distributed production across multiple geographically diverse sites (e.g., 5 x 10MW production facilities) ineligible. Eligible projects can export all their hydrogen or consume it on-site with no requirement to inject it into JGN's network or sell it into the NSW short term trading market that JGN services.	This measure falls short of the policy setting assumptions in the 'Big Hydrogen' scenario which said government policy would have: '*a particular emphasis on renewable gas targets and the introduction of renewable fuel certifications*'. It is more aligned with the 'Market Hydrogen' scenario. That scenario said of government policy: '*Policies based on incentives and price signals*'.
2024 budget allocated $32.6M over four years for regional cooperation on carbon sequestration, which includes establishing regulatory frameworks and bilateral agreements to support heavy industry in reducing emissions.	This measure has alignment with the 'Market Hydrogen' scenario which saw carbon capture and underground sequestration as (together with biomethane) being 'relied on initially to support industrial decarbonisation.
2023 budget established a $1.3 billion Household Upgrades Fund comprising: – $1B in Clean Energy Finance Council loans to help households install solar panels, electrify gas hot-water system and stove-tops, double-glaze their windows and undertake other energy efficiency measures – $300M to support upgrades to social housing, to be co-funded and co-designed with the states and territories.	This measure aligns with the 'Electric Hare' scenario. That scenario said of government policy: '*Strong electrification policies: appliance subsidies, moratorium on new gas connections and usage*.'

3.2.3 What would doing nothing look like?

Current settings for regulated depreciation of our gas network were established in a period of energy stability and an expectation of perpetual gas use. That context simply no longer holds. Our customers know that they are the change agents who will benefit from and so also fund our immediate and medium-term actions to support transition.

If these depreciation settings remain unchanged, by 2050—the target date for our legislated net-zero goals—we would still have significant unrecovered investments, as demonstrated under various scenarios in Table 3.2.

Table 3.2: Scenarios of our unrecovered investments at 2050 ($2050 billions)

Scenario	2050 RAB ($2050 billions)
Implausible – We stop investing after 2024-25	$1.7
Plausible – Electric hare	$3.1
Plausible – Electric tortoise	$3.4
Plausible – Big hydrogen	$6.3
Plausible – Market hydrogen	$6.0

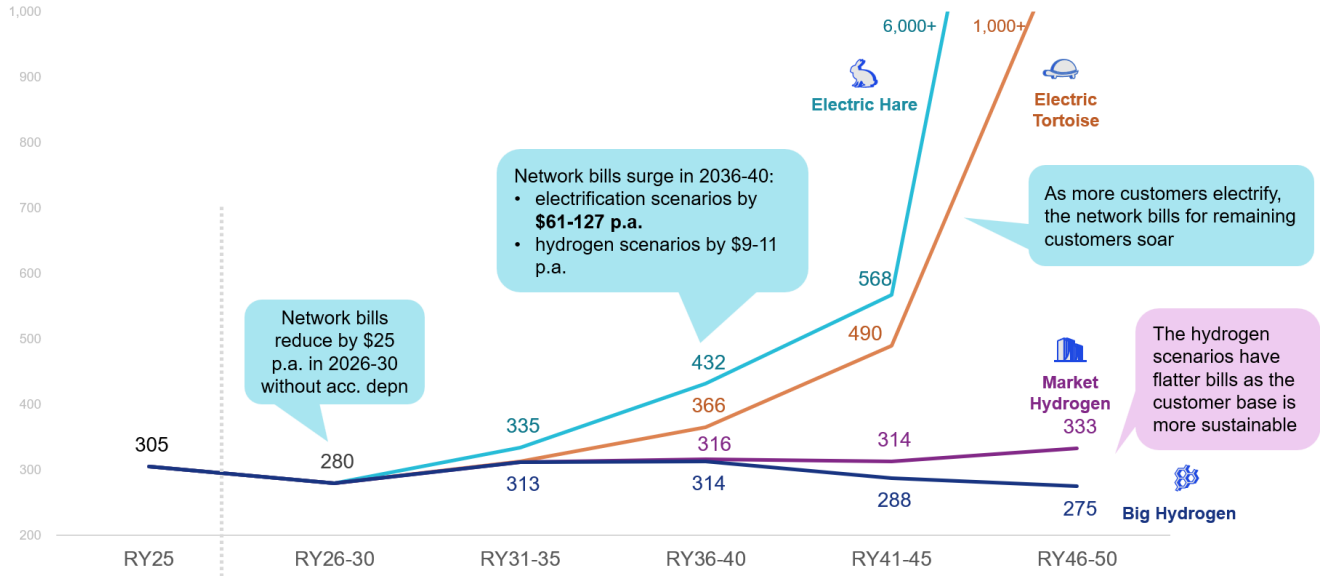
When examining the unrecovered investments alongside the number of customers remaining on our network in 2050, as shown in Table 3-3, the RAB per customer increases significantly from $2,498 in 2025 to $34,762 in the Electric Tortoise scenario and $84,702 in the Electric Hare scenario by 2050. These investments are unlikely to be recoverable in these circumstances, posing significant risks of under-recovery of our capital investments.

Table 3.3: Our unrecovered investments per customer increases over time ($2025 dollars)

Scenario	2025 RAB per customer	2040 RAB per customer	2050 RAB per customer
Electric hare	2,498	5,072	84,702
Electric tortoise	2,498	2,490	34,762
Big hydrogen	2,498	2,465	2,081
Market hydrogen	2,498	2,456	2,590

Figure 3–4 shows that if we do nothing, customer prices rise markedly in both electrification scenarios and only fall by 2050 in the Big Hydrogen scenario which was given the lowest probability by our Expert Panel.

Figure 3–4: Average network bill for a residential customer consuming 15GJ per annum ($2025 dollars)



3.3 Why use accelerated depreciation?

Our context and plausible scenarios show that doing nothing will not serve our customers' needs

This failure to serve our customers' needs is seen in both analysing the plausible scenarios against our Advisory Board's Statement of Objectives (as set out below) as well as looking at the per customer RAB and pricing outcome over time (as shown in When examining the unrecovered investments alongside the number of customers remaining on our network in 2050, as shown in Table 3-3, the RAB per customer increases significantly from $2,498 in 2025 to $34,762 in the Electric Tortoise scenario and $84,702 in the Electric Hare scenario by 2050. These investments are unlikely to be recoverable in these circumstances, posing significant risks of under-recovery of our capital investments.

Table 3.3 and Figure 3–4 respectively).

We used our Advisory Board's Statement of Objectives to assess outcomes under the range of plausible scenarios and under a range of mitigation initiatives. Our measurement approach, which used our FoG model, for each objective statement item was:

- *Access to reliable and resilient services* – We assessed asset management and service provision outcomes from investment, low-emission renewable gas readiness and network pruning in each scenario and response option

- *Stability, affordability & equity in prices* – We measured long term movement in our network prices over time under each scenario and impact on customers of accelerating investment recovery
- *A decarbonised energy supply* – We identified the scenario outcomes for the energy mix and extent of low-emission renewable gas blends, and any changes in their timing from the response option
- *Fair returns and risk sharing on investments made by consumers and JGN* – We assessed stranding asset risks for both JGN and for customer appliances with or without government support depending on the scenario and impact of accelerating investment recovery on stranding risk for JGN and for customer appliances. We also considered the impact on current and future customers.

This analysis compared do nothing against our current state while the accelerated depreciation compared the change in outcome against do nothing. The results are summarised in Table 3.4 using the time horizons requested by our Advisory Board.

From this analysis we saw that if we do nothing in most time horizons and all plausible scenarios:

- Customer demand and throughput are projected to decline across all scenarios over time, but the pace and extent vary depending on the assumptions and external factors
- Absent mitigation initiatives, gas prices increase across all scenarios, but are lowest in the Big Hydrogen scenario and highest in the Electric Hare scenario
- In contrast, if we accelerate depreciation from 2025-30, the objective statement outcomes are improved. Accelerated depreciation can help to improve both price stability and intergenerational equity (i.e., spreading costs fairly over current and future customers), as well as competitiveness with alternative energy sources, particularly electricity, once some switching costs are factored in. It also contributes to a decarbonised energy supply by providing a lower network transportation cost in future for low-emission renewable gas suppliers, improving the affordability of low-emission renewable gas and offering more energy choices to customers.

Table 3.4: Outcomes in each plausible scenario with and without accelerated depreciation

Objective	2025-30	2030-40	2040-50	2025-30	2030-40	2040-50
Scenario | Electric hare	**Do nothing[19]**			**Accelerate depreciation[20]**		
Access to reliable and resilient services	No change	Worse	Worse	Improved	Improved	Improved
Stability, affordability & equity in prices	Worse	Worse	Worse	Worse	Improved	Improved
A decarbonised energy supply	Rapid decarbonisation. Net zero is prioritised over affordability and energy security			No change from scenario outcome		
Fair returns and risk sharing on investments made by consumers and Jemena	Worse	Worse	Worse	Improved	Improved	Improved
Scenario | Electric tortoise						
Access to reliable and resilient services	No change	Worse	Worse	Improved	Improved	Improved
Stability, affordability & equity in prices	No change	No change	Worse	Worse	Improved	Improved
A decarbonised energy supply	Slow decarbonisation, extending reliance on natural gas for life of existing appliances			No change from scenario outcome		
Fair returns and risk sharing on investments made by consumers and Jemena	Worse	Worse	Worse	Improved	Improved	Improved
Scenario | Big hydrogen						
Access to reliable and resilient services	Improved	Improved	Improved	Improved	Improved	Improved
Stability, affordability & equity in prices	Improved	Improved	Improved	Worse	Improved	Improved
A decarbonised energy supply	Rapid decarbonisation through electrification, H2 and certification for biomethane			No change from scenario outcome		
Fair returns and risk sharing on investments made by consumers and Jemena	Improved	Improved	Improved	Improved	No change	No change
Scenario | Market hydrogen						
Access to reliable and resilient services	Improved	Improved	Improved	Improved	Improved	Improved
Stability, affordability & equity in prices	No change	No change	Worse	Worse	Improved	Improved
A decarbonised energy supply	Slow decarbonisation. Net zero is achieved through a fragmented and diverse energy mix			No change from scenario outcome		
Fair returns and risk sharing on investments made by consumers and Jemena	No change	No change	Worse	Improved	No change	No change

19 Outcomes compared against current period status quo.

20 Outcome measured as the change in that scenario outcome when the accelerated depreciation response is applied.

Our Advisory Board recommended that accelerated depreciation be taken forward

Our Advisory Board saw accelerated depreciation as an important lever for JGN to use when responding to gas uncertainty and supported it to proceed into the Customer Forum engagement.

When making this recommendation Advisory Board members made the following observations:

> *'We the current generations built our wealth on carbon. We now need to pay it forward to help future generations who we now know will be burdened by the resulting accumulated atmospheric carbon.'*
>
> *'On existing assets, they were built in good faith in a paradigm where networks build them, the AER sets prices and customers pay over an assets' life. Emissions policy and consumer sustainability preferences are changing the regulatory compact and lessening the demand life for your assets. It's a function of the regulatory compact that we should now pay more depreciation.'*
>
> *'It is important to highlight that the depreciation approach can be adapted for new info at each regulatory review, including if the future ends up being more rosy.'*

The NGR contemplate using this flexibility in the depreciation criteria

The Net Present Value (**NPV**) neutrality (explained below) and inherent flexibility that depreciation provides as a lever for providing cost recovery, sustaining investment incentives, and supporting efficient gas use over time, is codified in the NGR rule 89 depreciation criteria.

Table 3.5 explains how accelerating depreciation now will address the intent of each of these criteria.

Table 3.5: Compliance with the rule 89 depreciation criteria

Rule 89 (1) The depreciation schedule should be designed:	How accelerating depreciation now addresses the criteria
(a) so that reference tariffs will vary, over time, in a way that promotes efficient growth in the market for reference services; and	Accelerating depreciation now acknowledges that current customers will have a higher willingness to pay for gas services than future customers under all four plausible long-term scenarios (as shown in Figure 3–5). Using accelerated depreciation now as a temporal cost recovery tool amid the early stages of our net zero transition, will best ensure future gas use and growth (including negative growth) is not distorted by future prices being higher than they are now or by their relative price to electricity being higher than can be achieved through prudent acceleration of depreciation now. This is illustrated in Figure 3-7 below.
(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	Accelerating $300M depreciation now acknowledges the uncertainty over the future economic life of our assets, and that future gas demand may never again be as high as it will be during the 2025–30 period. This amount of acceleration is equivalent to shortening the economic lives of existing assets by ~13 years.

(d) so that (subject to the rules about capital redundancy), an asset is depreciated only once (i.e., 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	Our straight line year-on-year tracking method of depreciation ensures this is complied with under any accelerated depreciation option.
(e) so as to allow for the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs.	Our future of gas analysis indicates a significant risk that, without mitigation, customers may defect from our network as gas prices surpass the cost of electrification. If realised, this would mean that we are unable to recover our efficient costs from 2040 onwards, which could lead to credit downgrades, increasing our financing costs, further restricting our ability to fund normal operations and repay debt holders, ultimately threatening our network's viability. Accelerating depreciation brings forward capital recovery to a period when more customers are connected to our network and willing to pay slightly higher prices. It also reduces the amount of debt we need to finance with a smaller asset base in the future, thereby improving our cashflow position. We provide further details of this analysis in section 6.5.1 of *JGN - Att 7.4 - Future of gas analysis*.

Accelerating depreciation is the AER's preferred lever for addressing gas uncertainty

Given the above, it is unsurprising that in its 2021 AER Information Paper - Regulating gas pipelines under uncertainty the AER concluded that:

> *Adjusting regulatory depreciation is the most accessible regulatory tool we currently have in managing demand uncertainty and influencing the trajectory of future gas access prices, notwithstanding that there are other options available.*
>
> *Our preliminary view is that some form of accelerated depreciation would be appropriate if there is sufficient evidence to demonstrate and quantify the pricing risk and stranded asset risk arising from demand uncertainty. We can respond to the forecast change in demand in a pragmatic manner and adjust the tariffs over time to facilitate an equitable and efficient allocation of costs between current and future gas customers.* [21]

The AER's preliminary views above were subsequently confirmed in its June 2023 decisions for the Victorian gas distribution businesses which adopted an amount of accelerated depreciation.

This built upon the AER's April 2021 decision which accepted the need to shorten the asset lives of Evoenergy's standard asset lives applying to new investments in HP mains, MP mains and MP services in the ACT and NSW.

While policy settings in Victoria and the ACT regarding new gas connections are different to NSW, all three jurisdictions have committed to greenhouse gas emissions reductions targets by 2030, and net zero by 2045 in the case of Victoria and the ACT, and 2050 in NSW. These are detailed in section 3.1.1 above.

Accelerating depreciation is revenue NPV neutral and flexible over time

[21] AER, AER Information Paper - Regulating gas pipelines under uncertainty, 15 November 2021, p.44.

While accelerating depreciation increases our revenue requirement in the 2025-30 period, it will not change the amount of money that we are allowed to recover over each asset's economic life. Under the regulatory framework we are only allowed to cover the cost of our investments once, and this change to asset lives will be revenue neutral in NPV terms.

Changing the asset lives for new investment will only speed up the time over which we recover the cost of our future investments and will thereby preserve our incentive to make those investments at the prevailing rate of return notwithstanding the increasing recovery risk.

Importantly, as noted by our Advisory Board and the AER, in addition to NPV neutrality, accelerating depreciation provides us the ability to adjust the pace of depreciation recovery in future as more information about the scale, timing and forms of electrification and low-emission renewable gas deployment becomes available.

3.4 Why now?

Accelerating a $300M amount of our capital recovery now:

- Promotes fairness amongst our current and future customers, in other words inter-generational equity
- Helps improve long term competitiveness by lowering future investment to be recovered
- Extends the life of customers' gas appliances by keeping gas network prices lower in the long term and lessening the commercial need for network pruning
- Improves the affordability of low-emission renewable gases in the future and offers more energy choices to customers by lowering network transportation cost in future for low-emission renewable gas suppliers
- Provides our investors and lenders with the confidence to continue investing in our network to ensure that it remains safe and reliable.

Deferring accelerated depreciation could:

- Result in higher price impact on customers due to higher accelerated depreciation required in later periods with fewer future customers to share the depreciation amount shifts the cost burden of unpaid past investments more towards fewer future customers. This would create the unintended consequence of customers who are able to change appliances being subsidised in the short term by customers remaining on the network, especially those experiencing vulnerability and hardship, that are not able to change their appliances
- Increase network's stranding risks and disincentivise investments in our network
- Exacerbate the risk identified by Consumer Challenge Panel 31 (**CCP31**) who in their CCP31 Progress - Conclusions Report (April 2024) – Early Signal Pathway report observed the major theme of:

  > *risk of a descent into 'death spiral' settings where lower income households, including renters, are stuck with paying higher network fixed costs as those more able to afford a transition to electricity do so*[22]

We formed these views having regard to:

- *Analysis* | Using our Expert Panel and Blunomy plausible scenarios we modelled outcomes of these plausible scenarios using the FoG model against the elements of our Advisory Board's Statement of Objectives – see Table 3.4
- *Engagement outcomes* | Considering outcomes of our customer engagement across a range of customer forums and iteratively as we developed our draft and initial AA proposal

[22] CCP31, CCP31 Progress - Conclusions Report (April 2024) – Early Signal Pathway, p.14.

- *Precedents* | Examining how regulators are increasingly using accelerated depreciation to respond to gas uncertainty
- *Consequences of waiting* | considering the modelled outcomes of waiting another 5 years to address this problem and the incentive consequences where the reasonable cost recovery expectations of our investors are not met.

3.4.1 Analysis shows accelerating depreciation now is preferable across scenarios

Figure 3–45 shows that if we do nothing, customer prices rise markedly in both electrification scenarios and only fall by 2050 in the Big Hydrogen scenario which was given the lowest probability by our Expert Panel.

If we consider the Future of Gas modelling summarised in Table 3.4 and discussed in depth at our Advisory Board deliberative day and opt in modelling sessions, accelerating depreciation now is preferable across plausible scenarios for supporting:

- Access to reliable and resilient services
- Stability, affordability & equity in prices
- Fair returns and risk sharing on investments made by consumers and JGN.

Without accelerated depreciation, JGN faces significant stranding risks in most future scenarios

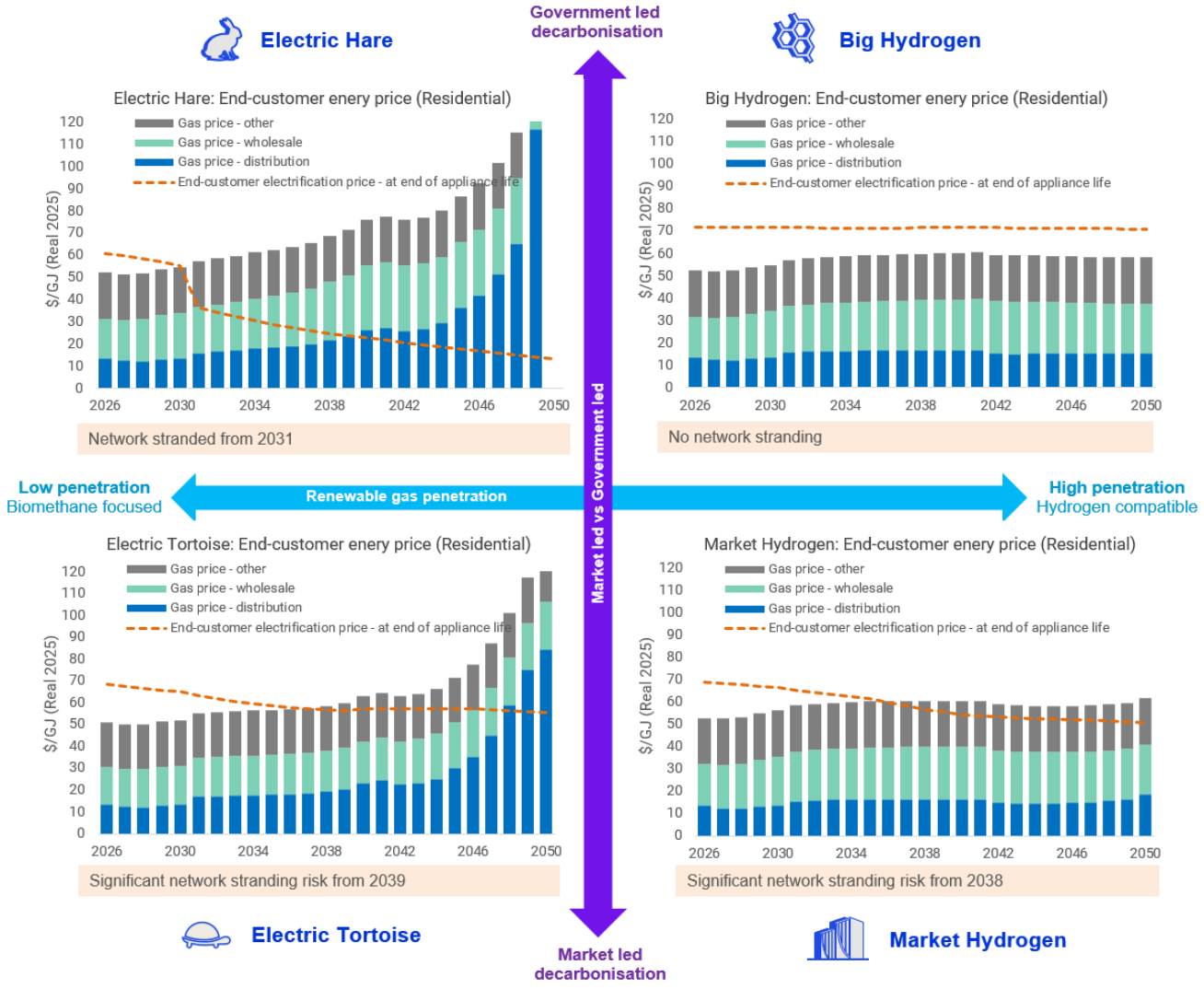
When we model the competitiveness of gas prices in the plausible scenarios, we see that without accelerated depreciation, JGN faces significant stranding risks in 3 of the 4 plausible scenarios as shown in Figure 3–55. In this figure:

- The bars represent customers' gas price and its composition (network vs other components)
- The orange line represent customers' equivalent electricity price if they choose to fully electrify
- When the gas price is higher than electricity prices, customers are more likely to disconnect from gas networks. We face significant stranding risks when it happens.

This shows that for residential customers the scenario outcomes are:

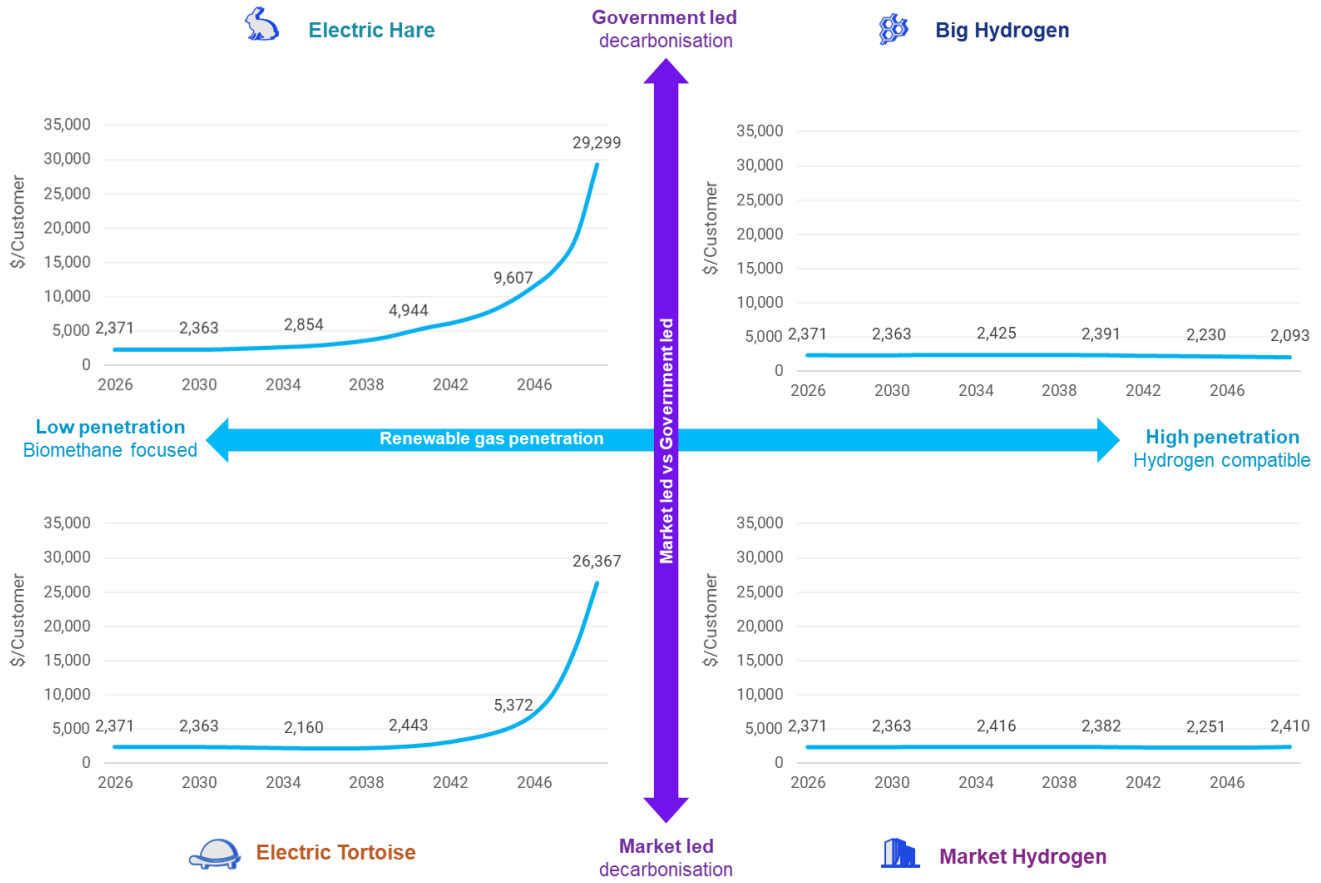
- In Electric Hare gas becomes uncompetitive from 2031 onwards due to assumed government subsidies to electrify
- In Electric Tortoise gas loses competitiveness from 2039 as electrification costs declines. Customers who are harder to electrify bear the brunt of increased gas prices
- In Big Hydrogen the low hydrogen prices ensure that customers stay within the gas network
- In Market Hydrogen gas prices exceed electricity prices after 2038 due to higher cost of producing low-emission renewable gases.

Figure 3–5: Stranding risk without accelerated depreciation



This stranding risk is also evident in the RAB per customer outcomes of the two electric scenarios as shown in Figure 3–6.

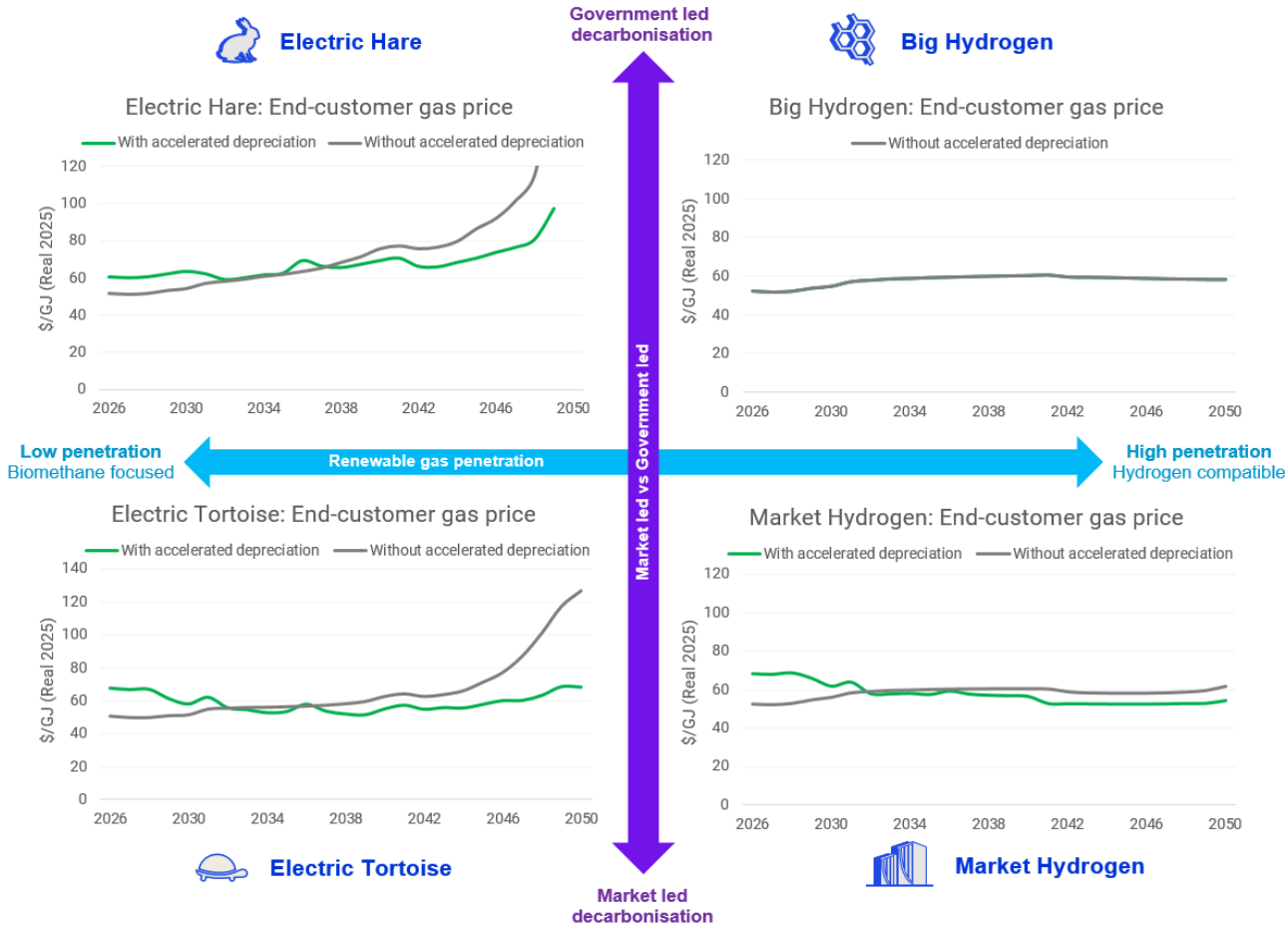
Figure 3–6: Projected RAB per customer



In comparison, accelerating cost recovery improves the competitiveness and viability of gas. Accelerated depreciation keeps the gas price below electricity prices for longer, especially in Electric Tortoise and Market Hydrogen scenarios where it can delay the price competitiveness points to 2045 and 2050 for these two scenarios.

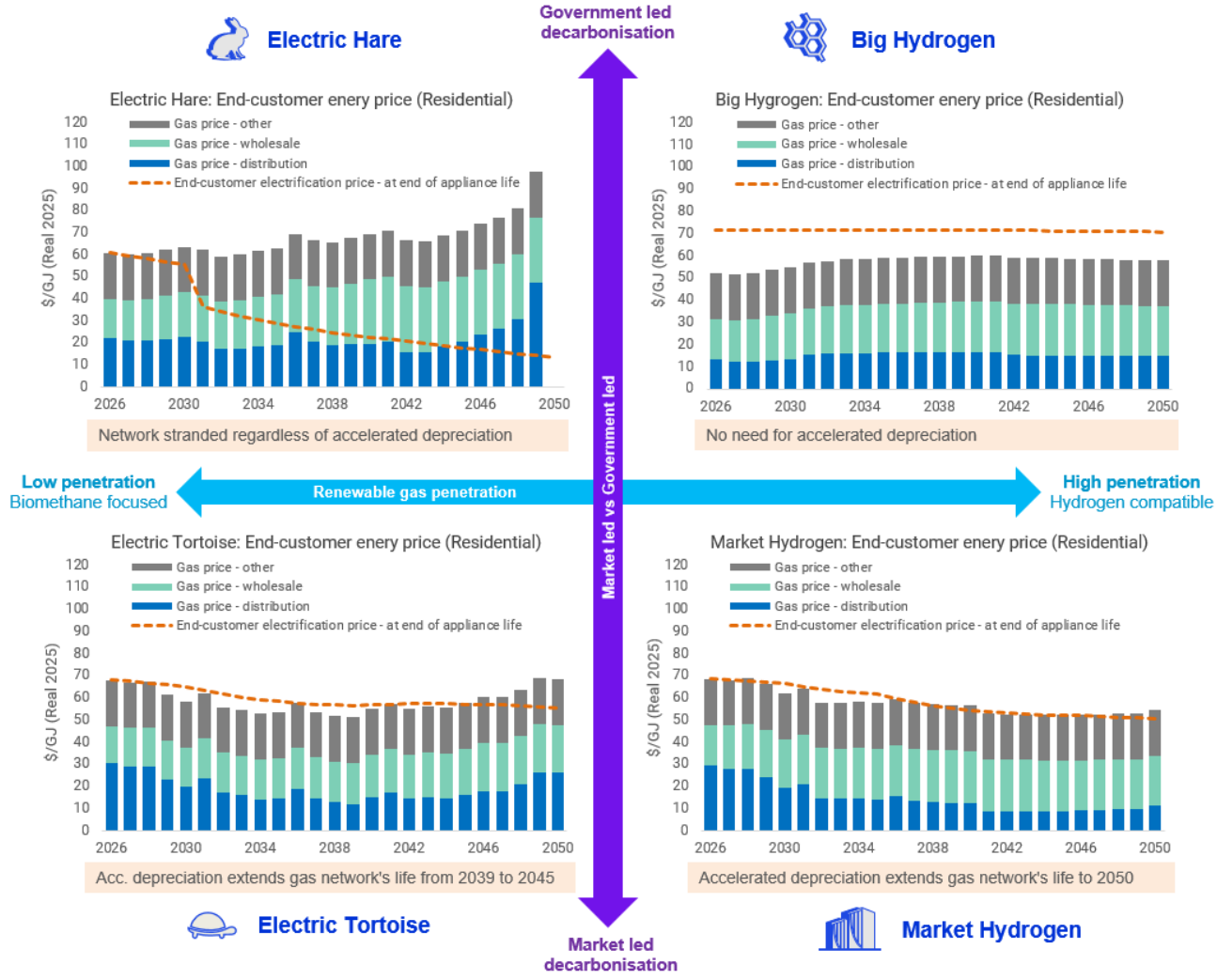
We found that although accelerated depreciation increases customer bills in the short term, it significantly lowers them over the horizon out to 2050, supporting overall price stability. The logic is that accelerating depreciation when there is a larger customer base to share the cost helps to reduce the cost burden on remaining customers in the long term. In all scenarios, accelerated depreciation provides more stable long-term prices and improves the intergenerational equity of customers utilising the gas networks. This is illustrated in Figure 3-7, which compares the residential end-customer gas price across four scenarios with (in green) and without (in dark grey) accelerated depreciation.

Figure 3-7: End-customer gas prices for residential customers



Moreover, accelerated depreciation can also help ensure that end-customer gas prices remain competitive with converting to electricity. By accelerating depreciation when the electrification price is high, it helps to reduce future gas network prices and keep the end-customer gas price competitive for a longer period. This is illustrated in Figure 3-8 and shows that with accelerated depreciation the gas prices (i.e. the stacked bars) align closely and often sit below the electricity price (the dotted line) across all scenarios, except for Electric Hare.

Figure 3-8: Comparison of residential end-customer gas and electricity prices with accelerated depreciation



Importantly, our future of gas analysis suggests that our network will continue to play a role in NSW's energy supply after 2050 in these plausible scenarios. If it did not (e.g. demand dropped to zero by that date), then the amount of accelerated depreciation needed to keep end-customer energy prices relatively flat would be much higher than that modelled here. More details of the Future of Gas analysis is provided in *JGN - Att 7.4 - Future of gas analysis*.

3.4.2 How we compare to the Victorian gas networks

Our gas network is exposed to greater volume risk than the Victorian gas networks. Gas in NSW is more of a fuel of choice for residential and commercial customers than it is in Victoria, which makes NSW customers more sensitive to price changes. We also have a higher proportion of our gas consumption coming from large industrial customers (see Table 3.6), which face greater risk of commercial pressure from climate policy-related changes.

This risk is evident when comparing RAB value per GJ of consumption by residential and commercial customers. We are more than double that for Victorian gas networks. This highlights how exposed we are when residential and commercial customers opt to consume less gas, which as Figure 3–3 (above) shows is the customer segment expected to have the fastest rate of gas reduction according to the expectations of AEMO and the Australian Government's Future Gas Strategy.

Table 3.6: Measures of volume risk

	Share of volume attributed to industrial customers (%)	RAB per residential and commercial GJ ($2023)
AusNet Services (gas)	42.9%	$45.9/GJ
Australian Gas Networks (Victoria and Albury	21.2%	$32.4/GJ
Multinet Gas	32.27%	$48.0/GJ
All Victoria	32.92%	$41.9/GJ
Jemena Gas Networks	54.92%	$87.1/GJ

Source: 2022 and 2023 Regulatory Information Notice responses from the gas networks.[23]

3.4.3 Our engagement outcomes support our proposal to act now

Our customers recognise they have a role to play in the energy transition. Their choices will drive the pace of energy transition, and current and previous customers have benefited from the cost and reliability achieved in the past through our existing carbon-intensive energy system.

3.4.3.1 Advisory Board

Our Advisory Board supported taking accelerated depreciation options to customer engagement and gave us feedback on how to explain the issues and consequences involved.[24]

When we retested our engagement outcomes and draft plan proposal for $300M of accelerated depreciation with the Advisory Board in February 2024, the board:

- Acknowledged the complex environment in which JGN was engaging and commended the professionalism, transparency and diversity of stakeholders it had engaged
- Had moderate consensus that accelerated depreciation would be contentious
- Two members questioned if there was need for further socialisation with customers including potentially presenting a do noting (i.e. zero accelerated depreciation) option.[25]

In light of this further feedback JGN conducted further engagement on its accelerated depreciation proposal after publishing the draft plan at Customer Forum session 8 which included for impact illustration a do noting option of zero accelerated depreciation. The analysis is discussed in more detail in *JGN - Att 7.4 - Future of gas analysis*.

In preparing the material for this further engagement, JGN worked with Victoria Jordan from our Advisory Board to ensure that the information and questions used in that engagement met the Advisory Board's expectations.

3.4.3.2 Customer Forum

We introduced, explored and iterated our gas uncertainty problem and the accelerated depreciation response lever (among others) iteratively and repeatedly with our customer forum. A chronology of this, and the relevant supporting material references is:

[23] The RAB per GJ values for the Victorian gas networks were calculated using annual volumes from their 2022 RIN responses because the 2023 RIN responses only included six months of data. The 2023 RIN responses were used for the share of volume attributed to industrial customers and for the RAB values as at 30 June 2023.

[24] Rosemary Sinclair AM Chairperson Advisory Board, letter to AER dated 23 June 2023.

[25] KPMG, Advisory Board and Expert Panel 'closing the loop' detailed record, 26 February 2024, pp. 7-8.

Customer Forum 5 on 23 July 2023:

- explored the Expert Panel's plausible future scenarios in the meeting and via small group discussions
- explored Jemena's response options to future gas uncertainty, including:
  - keeping moving toward low-emission renewable gas
  - managing Jemena's financial risk through accelerating capital recovery
  - how we manage our assets
  - managing Jemena's financial risk through a new approach to connections
- within the accelerating capital recovery option we explored the role of depreciation, including the consideration of 3 accelerated capital recovery options ($300M ~9% of RAB, $500M ~15% RAB and $700M ~21% of RAB) with indicative bill impacts now and in 15 years' time for an average residential customer consuming 15GJ per year under the four plausible scenarios that accounted for different rate of return and inflation assumptions[26]
- held group discussions with forum participants about all the responses presented, how customers thought they should be used, and individual customer assessments of each response which are outlined in Appendix 1 of the customer forum engagement report[27] and in summary were: 44% of the group voted $300M, 44% voted $500M and 12% voted $700M

Customer Forum 6 on 15 August 2023:

- reviewed how they voted and what they had said about accelerating capital recovery (and other responses)
- sought feedback on JGN's then-proposed response (accelerating $500M of capital recovery)
- challenged forum participants with their preliminary recommendations and get the group to consider them more deeply. To consider their recommendations, small groups were formed to consider:
  - How could Jemena prepare their business, and network for a possible scenario where the network is smaller whilst also keeping options open?
  - How could Jemena support their customers, whichever scenario pans out?

When considering the above questions in terms of accelerated depreciation, participants felt that Jemena should keep this lever balanced and that a middle amount of capital recovery is better for everyone involved.[28]

Customer Forum 7 on 9 September 2023:

- facilitated a question and answer session and revisited the response options allowing participants the opportunity to clarify any aspects they needed to before delving into finalising recommendations
- before moving into finalising preferences and recommendations, the Customer Forum was presented the views and expectations from Key Voices (i.e. youth and culturally and linguistically diverse groups)
- presented the combined and individual bill impacts of the response options being proposed based on feedback to date, and sought voting and feedback on each response within this incremental pricing context
- presented the total annual bills and sought voting and feedback on each response within this total price context

[26] See *JGN – BD Infrastructure – Attachment 2.2 – Customer forum engagement report*; page 423.

[27] See *JGN – BD Infrastructure – Attachment 2.2 – Customer forum engagement report*; page 104.

[28] See *JGN – BD Infrastructure – Attachment 2.2 – Customer forum engagement report*; page 122.

- in finalising their preferences participants were asked to vote on the regulatory options (i.e. levers) using the L scale methodology we discuss in chapter 3 of the 2025 Plan. In terms of accelerated depreciation the group voted again on $300M and $500M accelerated depreciation. Neither option reached the 80 per cent threshold
- the two options ($300M and $500M) were then taken to a plenary discussion to discuss why participants voted at either end of the spectrum and participants were asked to revote. The $300M option obtained the highest level of support at 66 percent, which rose to 68 per cent after discussion and a revote
- the group was then asked to finalise their overarching recommendations that they wanted to make to Jemena. This work had started in Forum 5 and the outputs of that forum were revisited to launch from. In formulating their final recommendations the group participated in brainstorming activities, where they were split into 10 groups of 4. Once the groups finalised their draft recommendations, all participants were asked to vote on the drafting of recommendations and were provided opportunities to refine the drafting. The group was then asked to vote on the final recommendations with 98% of the Customer Forum participants supporting the final package of recommendations.[29]
- as highlighted in the Customer Forum recommendations, participants understood there would be a short term (five year) bill impact due to accelerated depreciation in order to reduce the rate of bill increase in the future.[30]

Post the publication of the Draft 2025 Plan, Jemena conducted a Recall session - Customer Forum 8 - that was informed by a pre-reading pack[31] that included a recap of accelerating capital recovery (among other topics) and then involved:

- discussion of our overall Draft 2025 Plan
- discussion of accelerating capital recovery including:
  - recap of the concept
  - recap of how it affects prices over time
  - recap of what we had tested and proposed with the forum
  - discussion of what no acceleration and then the 3 acceleration options looks like for customer bills in the Expert Panel's plausible future scenarios
  - discussion of our perspective on why accelerated depreciation is important
  - panel discussion with a 'human library' of experts discussed below
  - group discussions, with access to the 'human library' of: What is accelerated depreciation? What are the trade-offs at the heart of accelerated depreciation? What are the implications of a low amount of depreciation? What are the implications of a high amount of depreciation?
  - a revote on the $300M proposal.

The considerations and outcomes of this final forum are detailed below.

Balancing long-term and short-term price impacts

The long-term analysis in our Future of Gas modelling shows that the accelerated deprecation needed to make gas more competitive is between $1.55–2.38 billion (real 2025) over the 2026–30 period, which would have a significant impact on the price for customers; it translates into increases to 2024-25 residential bills of between $141 to $228 (real 2025) per year, or 56–91%.

[29] See *JGN – BD Infrastructure – Attachment 2.2 – Customer forum engagement report*; page 132.

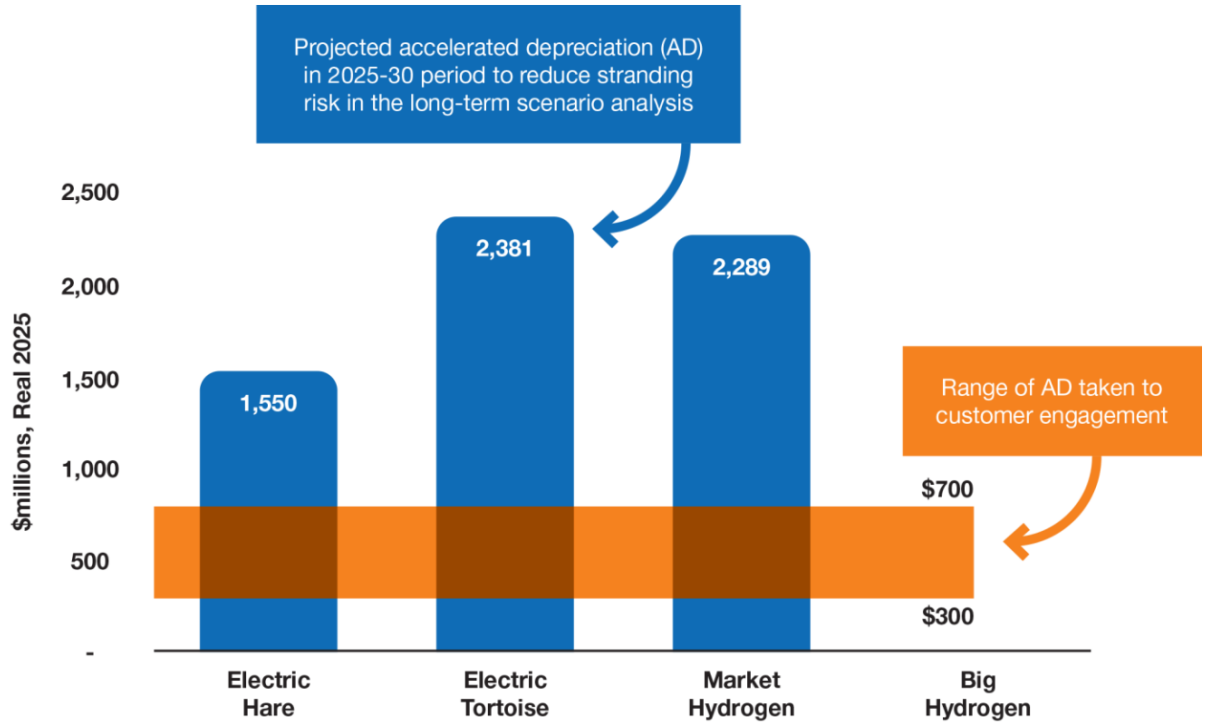
[30] See *JGN – BD Infrastructure – Attachment 2.2 – Customer forum engagement report*; page 28.

[31] See *JGN – BD Infrastructure – Attachment 2.2 – Customer forum engagement report*; page 563.

Understandably, our customers are worried about affordability and living costs. Conscious of this, we capped the accelerated depreciation options that we engaged on with them to $300–700M (real 2025) over the 2025–30 period. That range translates into a much lower price impact; ranging from $9–50 (real 2025) more per year compared to bills in 2024-25 if $300M (real 2025) is adopted or $26–68 (real 2025) if $700M (real 2025) is instead.

Figure 3-9 shows how we narrowed our accelerated depreciation options (in orange) down from what is needed to keep gas competitive (in blue) across the four scenarios.

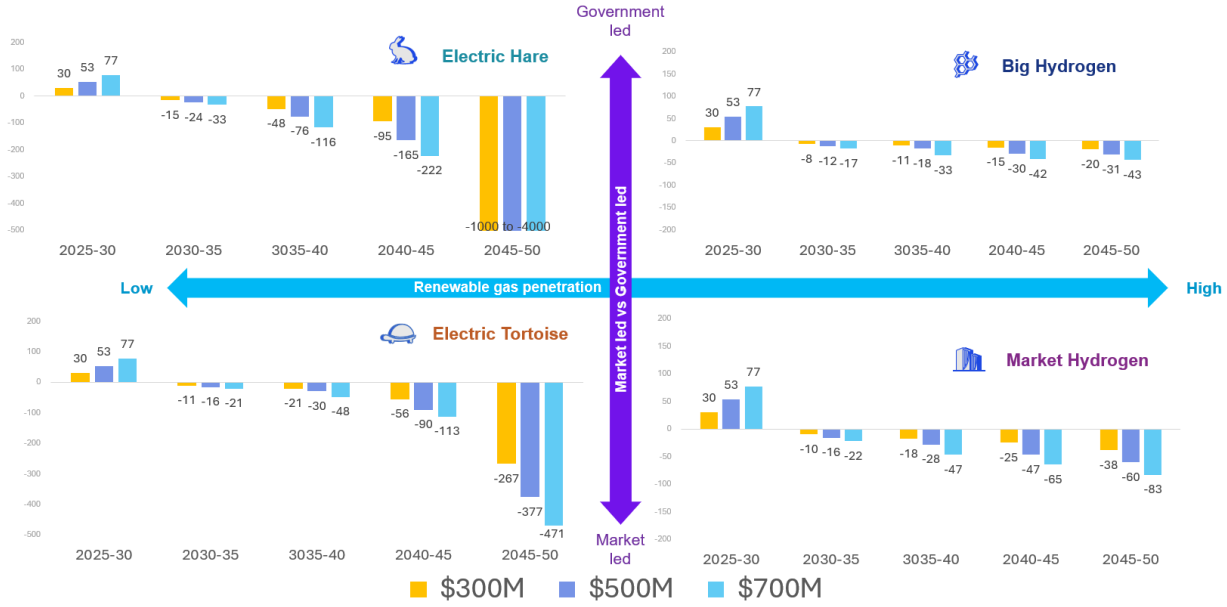
Figure 3-9: Narrowing our accelerated depreciation options



Our re-engagement with customers

At Customer Forum 8 we recapped the accelerated depreciation engagement outcomes from the Customer Forum sessions in July 2023, August 2023 and September 2023. We also presented information on the short and long-term bill impacts of zero accelerated depreciation and how these compared to the bill impacts of the three depreciation options previously consulted on under the Expert Panel's range of plausible scenarios as shown below. This shows the bill impacts for a residential customer consuming 15GJ per annum.

Figure 3–10: Incremental bill impact compared to NO accelerated capital recovery (dollar, real 2025)



Source: *JGN - BD Infrastructure - Att 2.2 - Customer forum engagement report*; p.616.

After presentations and Customer Forum questions of the three members of the Human Library – Gavin Dufty, Doug McCloskey and Stephen Gray who provided independent perspectives on the option implications – participants discussed the topic in small groups.

The Customer Forum members voted with L-scale cards on their level of comfort with accelerated asset deprecation staying at the $300M included in our draft plan. The results were as shown in Table 3.7 with 84% (32) voting live with, like or love, of whom 37% thought the higher $500M option was more appropriate. This result was higher than the 68% observed in the September 2023 voting.

Table 3.7: Vote Given what you've learned, how comfortable are you still with accelerating the depreciation of $300M (9% of the asset base)?

Loathe	Lament	Live with	Like	Love	Total > Live with
3% (1 vote)	13% (5 votes)	37% (14 votes)	44% (17 votes)	3% (1 vote)	84% (32 out of 38 votes)
A participant did not think customers should bear the financial burden of JGN risk.	Participants questioned the longevity / viability of gas in 5 years and the need to recoup investment.	Participants noted the uncertainty of the economy, questioned the viability of bio-methane and suggested the $500M option was more appropriate	Participants noted the $300M option was fair in disbursing cost over times but some questioned JGN's forecasting.	Participant noted future uncertainty makes the $300M option fair.	

Source: *JGN - BD Infrastructure - Att 2.2 - Customer forum engagement report*; p29.

3.4.3.3 Other voices

Large users | We engaged our large users before and after our Draft 2025 Plan. In response to our draft plan there was general acceptance of the $300M accelerated depreciation proposal.

Small businesses | We engaged our small business customers before our draft plan. We heard that small business customers are concerned about not leaving an unnecessary financial burden on future generations. With this in mind, 58% of small businesses voted to accelerate capital recovery by $300M, and 42% voted to accelerate by $500M. No participants were opposed to accelerated depreciation.[32]

3.4.3.4 Early signal pathway feedback

As discussed in Chapter 2 of the 2025 Plan, as part of our early signal pathways approach, the AER and CPP observed much of our engagement, in addition to our direct engagement with them in development of our draft plan and initial AA revision proposal.

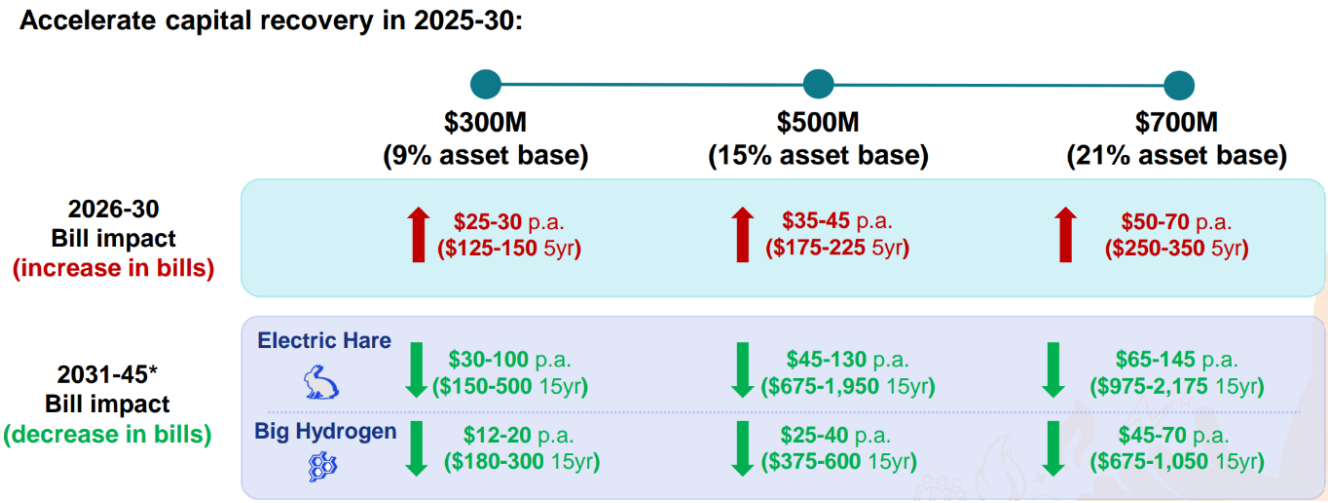
Table 3.8: Responding to AER feedback

AER feedback and timing	Our response	Supporting material references
Dec 2023 | JGN should consider the sensitivity of inflation (and other inputs e.g. WACC & demand) on revenue & prices when setting its proposed accelerated depreciation (**AD**) – Dec 2023	When we engaged in our Customer Forum 5 in July 2023 on AD we presented ranges of price impacts of each AD option ($300M, $500M, $700M) under different future scenarios reflecting sensitivities including for inflation and risk free rate. We also updated our price impact materials that informed engagement for demand scenarios and forecast refinement progressively over 2023 and 2024 including our plausible future long-term scenarios and refinements about the demand expectations over the more immediate 2025-30 period.	See Customer Forum 5 slide 28
Dec 2023 | In JGN's Customer Forum, AD was the only area which did not meet 80% support. We consider JGN should provide reasons for why this threshold should be relaxed for this component of its proposal. – Dec 2023	We note that this result was a finding of some customers considering JGN should have sought higher AD of $500M rather than the lower value of $300M. After our draft plan we retested AD with our Customer Forum, and while 37% still supported the option of $500M of AD, there was 84% support for our proposed $300M	See *JGN - BD Infrastructure - Att 2.2 - Customer forum engagement report*; p29.
Dec 2023 | JGN provided some customer bill impacts for AD.	All our AD engagement was accompanied by bill impact analysis. As noted above, this included sensitivity analysis, and also analysis of mitigation initiatives individually, collectively and as impacts on network bill and delivered gas bills.	See for example Customer Forum 5 slide deck (replicated below in Figure 3–11) Customer Forum 7 slide deck (replicated below in Figure 3–12)
Apr 2024 | JGN's resulting real price path is 1.9% p.a. We note JGN has reduced its placeholder inflation to 3.55% p.a. (from 4.25% p.a. in Check in 1). The current RBA forecasts translate to expected inflation of 2.55% p.a. for the 2025-30 period. As a result, JGN's higher proposed inflation value	We have engaged on actual amounts of AD as mitigation initiative options for how we respond to the plausible future scenarios to assess price stability equity and stranding outcomes over those scenarios. When we engaged in our Customer Forum 5 on AD we presented ranges of price impacts of each AD option ($300M, $500M, $700M) under different sensitivities including for inflation and risk free rate.	See Customer Forum 5 slides in *JGN - BD Infrastructure - Att 2.2 - Customer forum engagement report*; p427-428.

[32] *JGN - Att 3.2 – JGN Small business Retailer and Large user engagement*: Appendix A

understates the regulatory depreciation building block.	In our proposal PTRM, we have updated the placeholder forecast inflation to 2.79% reflecting more recent information.	
Apr 2024 | JGN should clarify whether it considers the proposed accelerated depreciation of $300M: a) Is independent of movements in other inputs (e.g. inflation, WACC, demand) that occur throughout the access arrangement review process. Noting that if the accelerated depreciation was accepted, updates to other inputs would likely result in an updated real price path different to the 1.9% p.a. or b) Should be adjusted to achieve a particular price path (or price path constraint) as other inputs (e.g. inflation, WACC, demand) are updated.	Our engagement on AD options has been on a consistent basis with our long-term plausible scenario analysis and mitigation initiatives tested in the FoG model. We have not sought to propose a level of AD to achieve a particular price path outcome. Our customers voted on AD options for 2026-30 amounts of AD that could be applied and assessed across the term of long-term plausible scenarios, making them independent of movements in other inputs driven by external market conditions. This was important to allow customer feedback about intergenerational equity outcomes. Items like inflation and risk free rate that affect all scenarios in a like manner, were therefore not an option informant, but rather were an illustration of short-term impacts that occur independent of the depreciation option. Our customers voted based on the incremental bill impact to no AD, which isolates the bill impact of AD from other factors like inflation and risk free rate.	The basis of our AD options is explained in section 3.4.3.2
Apr 2024 | JGN's draft access arrangement proposal includes its 'future of gas' analysis which considers the impact of AD on long-term demand and prices under different future scenarios. We are reviewing JGN's associated 'future of gas' modelling and considering how the assumptions align with the narrative for JGN's proposed AD.	Our *JGN – Att 5.4 - Future of Gas* attachment explains these assumptions and how they align with this proposal.	*JGN – Att 5.4 - Future of Gas*
Apr 2024 | In JGN's Customer Forum, AD was the only area which did not meet 80% support. We consider JGN should provide reasons for why this threshold should be relaxed for this component of its proposal.	As shown in Table 3.7 our final Customer Forum did hit this level of support. Further, we note that 80% customer support is not a regulatory or rule hurdle. JGN consulted on our AD proposal to inform that proposal but is neither required to have consensus on it under the NGR rule 89 depreciation criteria nor expected to have consensus under the expectations outlined in the AER Information Paper - Regulating gas pipelines under uncertainty (see Table 7.1 below). Customer Forum 8 saw 84% (32) voting live with, like or love, of whom 37% thought the higher $500M option was more appropriate. Section 3.4.3.3 explain how our other engagement channels also supported this proposal.	See *JGN - BD Infrastructure - Att 2.2 - Customer forum engagement report*; p29.

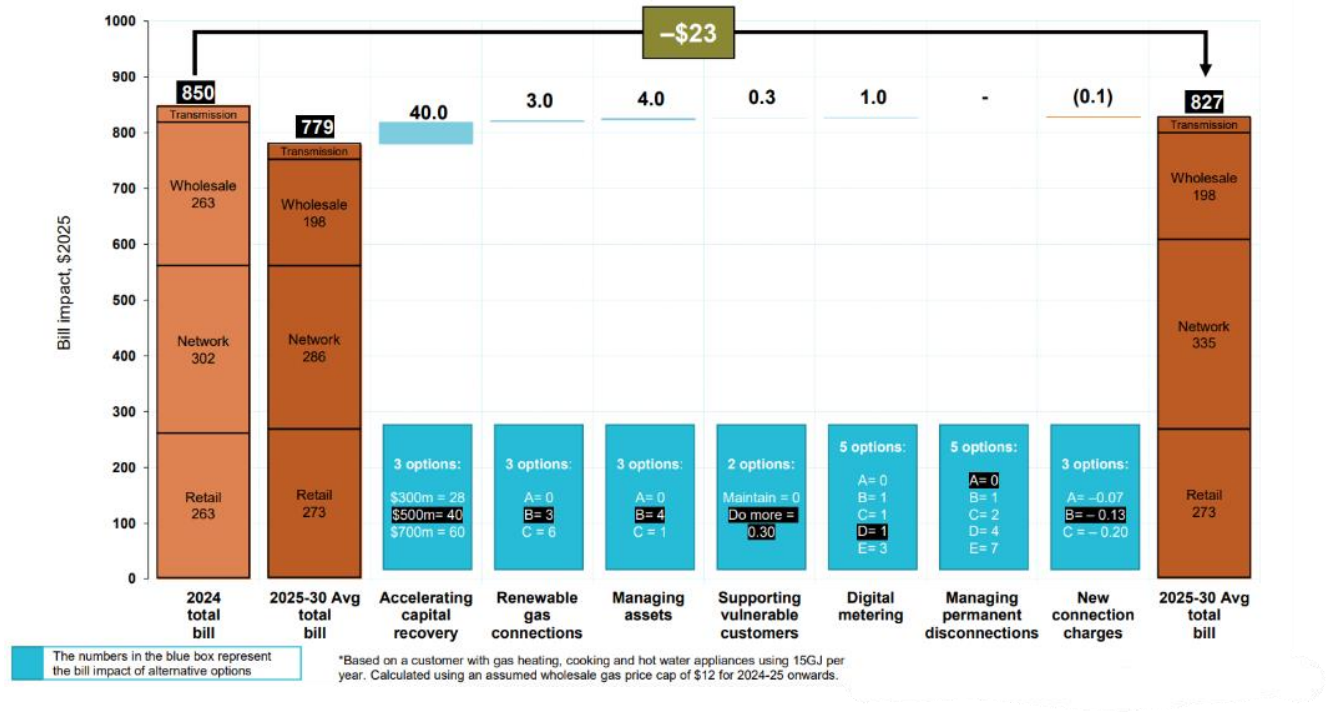
Figure 3–11: Bill impact sensitivity ranges presented for accelerated depreciation options



Notes: *The period 2046-50 is excluded here as the 2 electrification scenarios have very high bill shocks due to low demand. The ranges presented account for possible variations in uncontrollable cost inputs like inflation and financing costs.

Source: *JGN - BD Infrastructure - Att 2.2 - Customer forum engagement report*; p.428.

Figure 3–12: Estimated Bill impact ($2025), average per annum, 2025-30



Source: *JGN - BD Infrastructure - Att 2.2 - Customer forum engagement report*; p.543.

Table 3.9: Responding to CCP31 feedback

CCP feedback	Our response	Supporting material references
Accelerated depreciation is an ongoing and substantial question for gas network businesses, with the AER taking a network-by-network approach to assess accelerated depreciation	In light of the observations presented in CCP's conclusions report, which question the understanding of the Customer Forum participants of some of the key topics, we	See *JGN - Att 2.1 - Consumer Challenge Panel - feedback and response*.

proposals. Accelerated depreciation remains an important issue for Jemena's customers. However, we are not confident it has been understood at an appropriate level for customers to have an appropriately informed and objective view and the zero-acceleration option has not been adequately tested with customers. Therefore this topic requires further targeted review consideration in the lead up to the AER's final decision.	appointed Sagacity Research and JD Insights to conduct in-depth interviews and surveys of the Customer Forum participants. This research was conducted over May and June 2024. The independent review by Sagacity and JD Insights explored participants understanding of concepts and topics, including whether participants felt adequately educated to make informed recommendations on the topics. The research shows that all survey participants felt they had enough knowledge to provide informed feedback on the initiatives they considered which gives us confidence that our proposals and initiatives algin with customers' values and expectations. As part of exploring participants understanding of the key topics, Sagacity and JD Insights explored customers understanding of the role of accelerated depreciation. 17 of the 22 participants surveyed felt they had good to excellent knowledge of the topic with 4 participants feeling they had average knowledge. Importantly, 22 out of 22 people survey stated that they felt knowledgeable enough to provide informed feedback. This is directly contrary to the CCP's views that participants struggled with the topic of accelerated depreciation.	
Accelerated depreciation, the Jemena capex program for 2025-30, (and beyond) and demand forecasts for a trifecta of interrelated issues with decisions regarding each of these needing to be made with recognition of the impacts on the other inter-related factors. Any longer-term augmentation capex, in particular, will need to be closely tested, particularly while Jemena is also seeking accelerated depreciation.	While the future role of our network is uncertain, the plausible future scenarios developed by the Expert Panel indicate that the volumes of gas transported are unlikely to fall before 2030, and that our ageing network needs to be kept safe and reliable whilst aiming to lower our emissions until at least the mid-2040s. Despite this uncertainty, there is clarity around the three key investment drivers for the 2025-30 period: • Connect customers and provide access to our network, consistent with regulatory obligations and customer expectations. Over the 2025-30 period we will connect 68,829 customers or about 90,000 which is a 41% reduction to the 2020-25 period. • Reduce emissions. We need to play our role in supporting the achievement of the NSW and Australian governments emission reduction targets, consistent with the amended National Gas Objective. We will do	See *JGN – Att 5.1 – Capital Expenditure*. See JGN - Att 2.1 - Consumer Challenge Panel - feedback and response.

	this by enabling access to renewable gas (facilitation reductions in customer emissions) and reducing emissions from our network activities. • Stay in business, by keeping our network safe and reliable. Despite the long-term uncertainty around our role, the range of scenarios indicates that customer numbers are unlikely to materially fall before 2030. Our ageing network needs to be kept safe and reliable as long as our customers need us to. Over the 2025-30 period we will continue to constrain capex through our targeted risk-based approach to asset management which enables us to keep pipeline replacement capex flat over the 2020-25 and 2025-30 periods.	

3.4.4 Other regulators are using accelerated depreciation to address gas uncertainty

The Economic Regulation Authority (**ERA**) in Western Australia also operates under the NGR that the AER applies. Under the same depreciation rules and criteria the ERA decided in April 2021 to accept the proposal of the Dampier to Bunbury Natural Gas Pipeline (**DBNGP**) to accelerate depreciation of its asset base to reflect an effective economic life end date of 2063. It found:

> *Given current uncertainties, the range of potential economic lives of the DBNGP is wide, and DBP's proposed economic end life of 2063 sits within a range of plausible outcomes.*[33]

Accelerating depreciation of gas network assets now is also the regulatory response of New Zealand's Commerce Commission. In its May 2022 decision, the Commission applied accelerated depreciation by reducing the lives of both existing and new assets, reasoning that such a change:[34]

> *Enables depreciation to be recovered over a period aligned with the length of time network assets are expected, on average, to be economically viable for conveying natural gas, and not the longer period implied by the assets' physical lives. Continuing to apply existing standard physical asset lives would be to ignore that [Gas Pipeline Businesses]* ***GPBs*** *face a declining ability to recover asset-related costs over time and that GPBs' economic circumstances differ from one another.*

The Commission also observed that making this change will help:

- Maintain expectations of capital recovery—providing incentives for GPBs to invest to serve current and future demand
- Allow revenue to better reflect the costs of providing regulated services, which should flow through to more efficient consumer price signals—promoting more efficient consumer choices and discouraging inefficient new connections.[35]

Importantly, this decision by the Commission was made without there being clear government policy. Indeed, the policy landscape and gas usage affecting regulated gas pipelines in New Zealand is similar to that facing us in

[33] ERA, Final decision on proposed revisions to the Dampier to Bunbury Natural Gas Pipeline access arrangement 2021 to 2025 – Submitted by DBNGP (WA) Transmission Pty Ltd, 1 April 2021, p.356.

[34] NZ Commerce Commission, Default price-quality paths for gas pipeline businesses from 1 October 2022, Final Reasons Paper, 31 May 2022, p.96.

[35] NZ Commerce Commission, Default price-quality paths for gas pipeline businesses from 1 October 2022, Final Reasons Paper, 31 May 2022, p.96.

NSW. There is a broad net zero by 2050 target, but as yet there are no connection bans or a plan to transition customers off gas. Like NSW, gas is seen as a fuel of choice in New Zealand, with significantly lower per customer consumption than is seen in Victoria. For instance, average residential / small commercial consumption in New Zealand is around 21 GJs per year per customer,[36] which compares with the 19 GJs per year per NSW residential customer that we observed over the 2022-23 year.[37]

The High Court of New Zealand recently upheld the Commission's decision.[38] When considering how accelerated depreciation was consistent with the overarching purpose of economic regulation (referred to as Part 4 and equivalent to the NGO), the High Court (at paragraph [162]) concluded:

> *Gas pipelines now face a very real risk of network stranding as demand falls away as a result of the government's policy response to climate change. In a workably competitive market, a falling away of demand in this way would result in lower prices, all else equal, and firms would not expect to recover all their sunk costs. However, these same firms would have been compensated ex ante for carrying this risk, which regulated gas pipelines have not been. The long-term benefit of consumers of regulated services will not be served if suppliers of those services receive no ex ante compensation for bearing stranding risk and cannot be confident that stranding risk will be addressed as the need arises. Investment incentives for both gas pipeline services and other services regulated (and potentially regulated) under pt 4 would be undermined in a scenario of this sort, to the detriment of consumers.*

The High Court also considered why it was appropriate for the Commission to apply accelerated depreciation as part its May 2022 decision rather than wait for a future decision (at paragraphs [242] to [244]):

> *A failure to shorten asset lives now, when the expected economic life of new investments is shorter than their physical lives, may itself undermine investor expectations of financial capital maintenance and, accordingly, their confidence to make those investments. If things turn out differently, the Commission can change adjustment factors for subsequent pricing periods to extend (or further reduce) the remaining period for depreciation.*
>
> *In addition, acting now will be likely to allow the cost to be spread across a larger group of consumers (unless some technological breakthrough results in no drop off in demand) than would otherwise be the case. If change is delayed, it is more likely that the cost of stranded assets will not be recouped and/or that the cost will fall on a smaller group of customers with less elastic demand. This could include both residential customers, particularly renters, but also some industrial and commercial users for whom there is currently no close substitute for gas (for example, feedstock and high temperature energy).*
>
> *Furthermore, taking advantage of the window of opportunity to incentivise continued operation of the pipelines while there is sufficient demand is more likely to preserve the option value of gas pipelines being repurposed to carry clean gas in future, if and when technology enables that to occur. Shutting down the network prematurely because investors are not confident that the new investment required to maintain pipeline operations will be recovered could extinguish the option of repurposing.*

In the United Kingdom, Ofgem has foreshadowed that its approach to addressing uncertainty in the future of gas in RIIO-3 will use 'two principle ways of mitigating this risk: through the choice of depreciation rates and regulatory asset lives; and through price control re-openers' and that in doing so it will ensure 'fairness in how different generations of gas customers pay for the sunk costs of historical investment in the gas grid.'[39]

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36 This value is derived from information disclosed to and reported by the Commerce Commission. See: Commerce Commission, Gas distribution information disclosure data 2013-2022, 29 June 2023, available here: link.

37 Our 2022-23 annual RIN response reported average residential customers of 1,468,796 (i.e., the average of the opening and closing numbers), and demand of 28,397,387 for the year. This translates into average demand of 19 GJs per year per customer. See: JGN, Annual RIN Response, Consolidated, Templates, 30 November 2023, available here: link.

38 MAJOR GAS USERS' GROUP INC v COMMERCE COMMISSION [2024] NZHC 959 [29 April 2024].

39 OFGEM, Future Systems and Network Regulation: Framework Decision Overview, 26 July 2023, p.22.

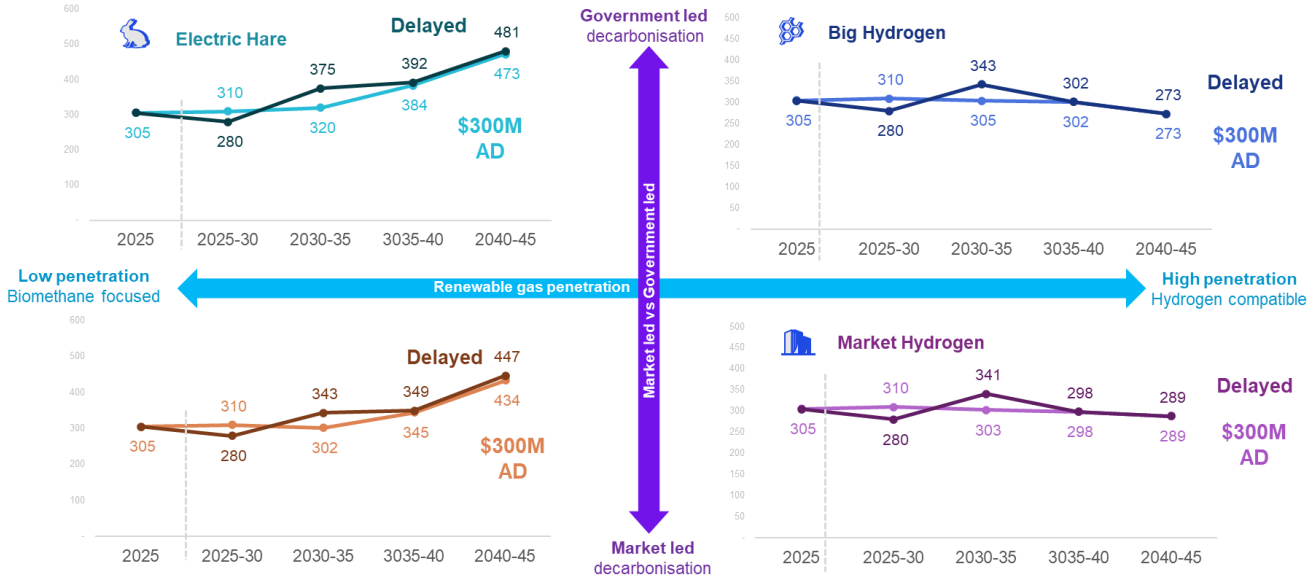
3.4.5 What happens if we wait another 5 years?

If we continue with the current pace of capital recovery and this issue is left unaddressed, it could:

- Discourage efficient investments into the network, resulting in customers leaving the network earlier than they are otherwise willing to.
- Increase the price volatility and uncertainty in future periods when there would be insufficient time to act.
- Miss an opportunity for customers to have an affordable alternative low-emission renewable gas option in the future.
- Cause future gas users to pay a greater share of asset costs than is equitable given the relative utility value that current customers are enjoying from their gas supply.
- Leave more to do be done over a shorter period.

Figure 3–13 shows the effects on the pricing impacts in Figure 3–4 (above) based on waiting a further 5 years to apply our depreciation proposal. It shows that without accelerated depreciation in 2025-30, bills can increase significantly from 2036 onwards

Figure 3–13: Impact of delaying $300M in accelerated depreciation by 5 years (dollar, real 2025)



4. How much accelerated depreciation we are proposing now

This section explains how we are proposing to accelerate $300M of our existing RAB assets.

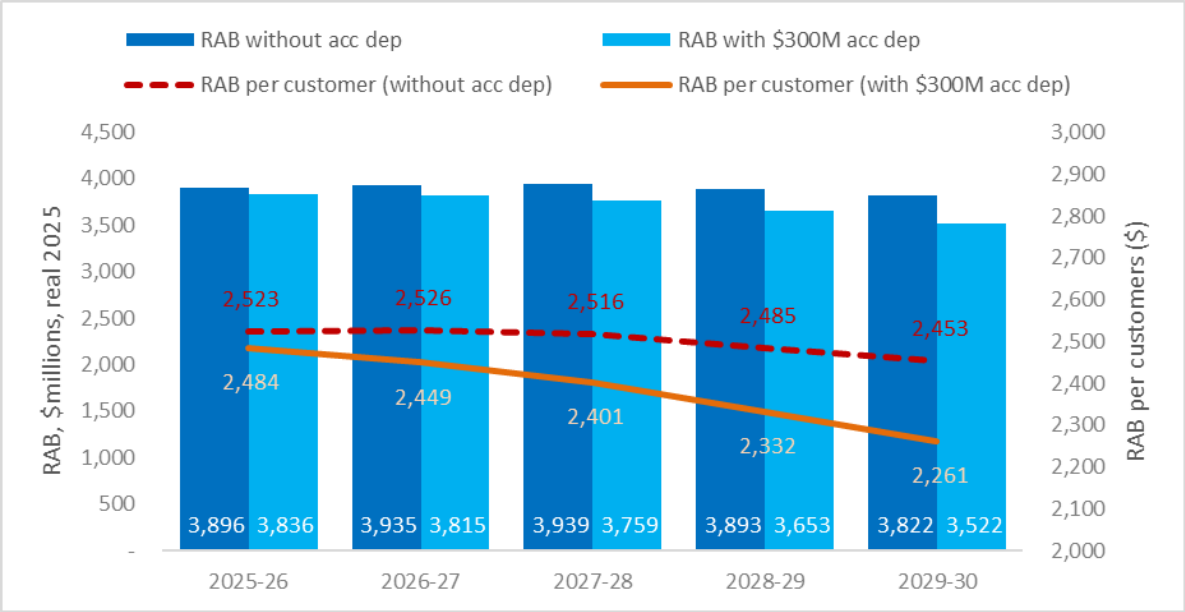
4.1 What we are proposing

We propose to accelerate depreciation of $300M (7.8%) of our existing RAB over the 2025–30 period compared to what these assets' technical design lives (i.e. our standard asset lives) would provide.

If we shorten the asset life of existing RAB to fully recover our 2024-25 closing RAB by 2046 (a reasonable proxy for the economic life of our asset base on current GSOO projections and under the electrification plausible scenarios of Electric Hare and Electric Tortoise), the additional depreciation above the default straight-line depreciation would be $300M (in Real $2025) in each regulatory period between 2025 and 2046.

Figure 4–1 shows that this will result in our 2030 closing RAB being $3.6 billion, rather than $3.9 billion. This proposal is presently only for the 2025–30 period and the need for further accelerated recoveries can be reassessed with information available just prior to the start of the 2030–35 period.

Figure 4–1: RAB per customer under our proposal versus no acceleration



4.2 How we arrived at this point for 2025–30

Our $300M proposal is consistent with the engagement feedback discussed in section 3.4.3 above. Recognising customer concern about affordability and living costs and after presenting sensitivity analysis of price effects accounting for inflation, WACC and demand variability, we capped the accelerated depreciation options that we engaged on with them to $300–700M (real 2025) over the 2025–30 period. Figure 3-9 shows how this option range which considered $300M, $500M, $700M options was developed having regard to the asset stranding risk across the plausible scenarios.

More details on the impact of our accelerated depreciation proposal on customers and investors are provided in *JGN - Att 7.3 - Future of gas analysis* and *JGN - Att 7.8M - Future of gas model*.

4.2.1 How our proposal compares to the Victorians

Our $300M proposal is also consistent with the depreciation allowed by the AER for the Victorian gas distribution networks. As shown in Table 4.1, our proposal equates to 7.8% of the opening RAB for the 2025–30 period, which compares with 3.8% to 8.9% for the Victorian gas networks for the 2023–28 period.

Table 4.1: Accelerated depreciation as a proportion of RAB

	Accelerated depreciation	Opening RAB	RAB proportion
AusNet Services (gas)	$105.6M ($2023)	$1,868.2M ($2023)	5.7%
Australian Gas Networks (Victoria and Albury	$53.1M ($2023)	$1,416.2M ($2023)	3.8%
Multinet Gas	$174.6M ($2023)	$1,953.1M ($2023)	8.9%
Jemena Gas Networks	$300.0M ($2025)	$3,870.3M ($2025)	**7.8%**

Source: AER decisions for the Victorian gas networks and our proposal.

4.3 How we give effect to this amount in our depreciation calculations

There are different ways that accelerated depreciation can be incorporated into the PTRM for the 2025–30 period. To keep things simple, we have used the same approach adopted by the AER in its 2023 decisions for the Victoria gas distribution networks.

Consistent with those decisions, this approach involved:

1. Adding a new asset class for Future of Gas
2. Including an end of period adjustment in the RFM for the 2020–25 period that transfers value from one or more existing asset classes into that new asset class
3. Setting the remaining life of the new asset class to 5 years so that the transferred value is fully depreciated by the end of the 2025–30 period.

Under step 2, we opted to transfer value from only the MP Services asset class. This is because our medium pressure network serves predominantly residential and small business customers, who are more likely to transition away from gas. While stranding risks are present across our entire network, the medium pressure segments face higher risks compared to our high pressure network. For simplicity, we opt to focus on a single asset class to implement accelerated depreciation.

We also set the transferred value so that the net change in straight-line depreciation over the 2025–30 period was $300M. This meant that the transferred value was a little higher than $300M because some of the value transferred would have already been depreciated over that period if accelerated depreciation did not apply (i.e., it would have been depreciated in accordance with the standard approach).

The value transferred to the Future of Gas asset class is determined using the following formula:

[Transferred Value] = [Accelerated Depreciation] x (1 – 5 / [MP Services Remaining Life]).

Setting the accelerated depreciation amount to $300M and adopting a remaining life for MP services of 35.14 years, gives a total transferred amount of $349.8m.

5. How we considered customer effects

This section summarises how we have considered customer effects in developing our accelerated depreciation proposal.

5.1 We considered effects using Our Advisory Board's Statement of Objectives

We considered the customer effects that our Advisory Board said were important to them as articulated in their Statement of Objectives, which included examining how accelerated depreciation impacted:

- Access to reliable and resilient services
- Stability, affordability and equity in prices
- A decarbonised energy supply
- Fair returns and risk sharing on investments made by consumers and Jemena.

What we found when assessing this with them was that:

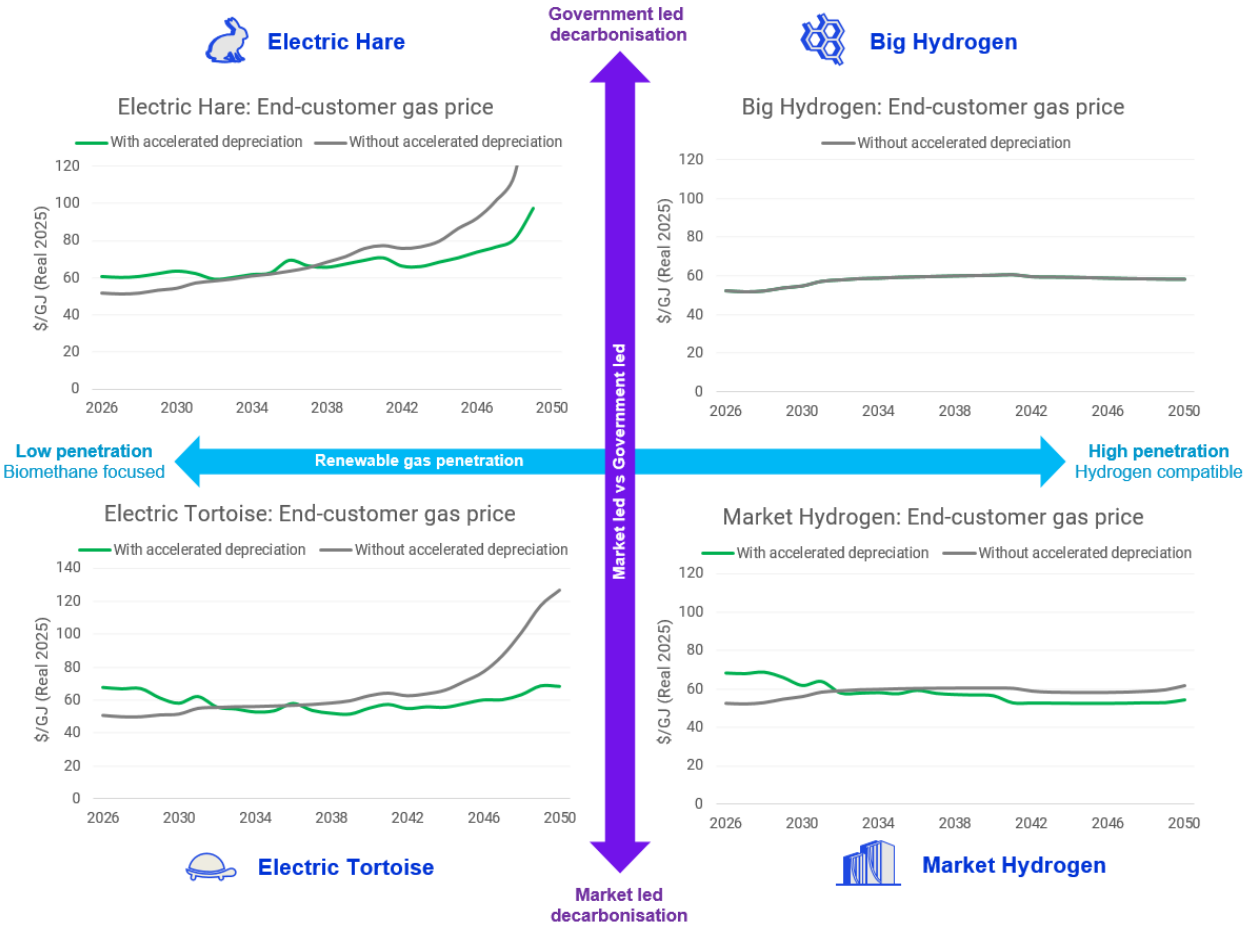
- Accelerating depreciation better preserves our incentives for continued network investment and efficient operation, improving access to reliable services and supporting energy resilience for customers by preservice access to duel fuels to meet their energy needs.
- Accelerating depreciation improves intergenerational equity across our 2050 transition to net zero and has short-term price effects during the 2025–30 period (both considered below). In the short term, increased depreciation puts upward pressure on prices. In the longer term, a lower return on capital and lower depreciation from a smaller RAB puts downward pressure on prices. In the longer-term as wholesale gas prices increase with increased low-emission renewable gas blending, lower network prices in later regulatory periods help smooth the end-customer gas price and improve affordability of low-emission renewable gas to more customers.
- While accelerated depreciation on its own did not have a perceptible impact on a decarbonised energy supply, when paired with supporting low-emission renewable gasses in a balanced manner, it supports a more competitive and affordable decarbonised gas supply.
- Accelerating depreciation reduces our stranding risks, which benefits customers by lessening our incentive for network pruning in later periods, thereby lowering customer appliance stranding risk.

The following sections further explore customer pricing effects both during the 2025–30 period and during the period out to NSW's legislated 2050 net zero target.

5.2 Intergenerational equity

Figure 5-1 shows the impacts of our accelerated depreciation proposal on gas prices compared to not doing so under each of our Expert Panel's plausible scenarios. This shows the contribution that accelerated depreciation makes to supporting both pricing stability and equity between current and future gas users. This intergenerational risk is also evident in the RAB per customer outcomes of the two electric scenarios as shown in Figure 3–6.

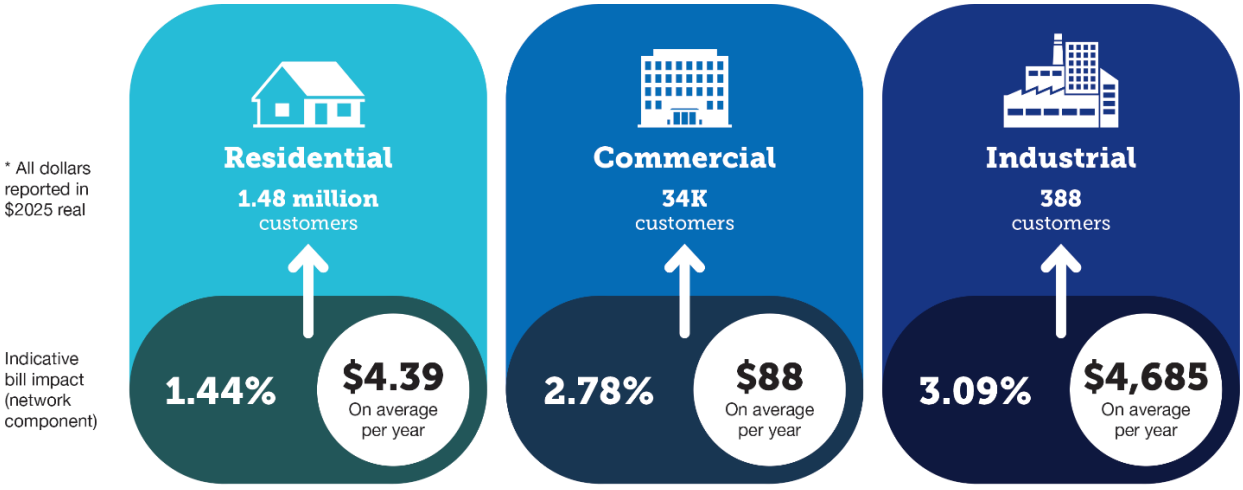
Figure 5-1: Comparison of JGN's prices with and without accelerated depreciation



5.3 Price impacts of our overall proposal

We have assessed the 2026-30 bill impacts for a range of customer types and sizes below in Figure 5-2.

Figure 5-2: Bill impacts by customer type ($2025 dollars)



** Note the price impacts are calculated based on 15 GJ annual consumption for a residential customer, 500 GJ for a commercial customer, and 350 GJ of Chargeable Demand for an industrial customer.

6. Our complementary measures

This section explains the range of complementary measures we have proposed in our 2025–30 access arrangement.

6.1 Managing the bill incidence of accelerated depreciation for our customers

To manage how customers' 2025–30 gas bills are affected by our proposal, we have sought to manage the incidence of accelerated depreciation cost recovery by:

Segmenting our customers in the volume individual market to:

- Small and medium customers consuming less than 200GJ per year, covering households and small and medium businesses
- Large business customers consuming more than 200GJ and less than 10TJ, which enables us to better manage how much each customer size contributes to these costs
- Removing our country versus coastal tariff distribution to support equity across NSW for how customers incur our costs
- Increasing the share of our revenue that we recover from our large commercial and industrial customers who consume more than 10TJ per year.

With a larger customer base we can manage the bill impacts for smaller residential and business customers in the next regulatory period but our ability to do so in future will diminish if we accelerate lesser depreciation now and leave more to be done in later regulatory periods.

You can find more details about these proposals and the customer support for them in *JGN - Att 10.1 – Pricing*.

6.2 Offsetting within period revenue effects through savings

To lessen the bill impact of our depreciation proposal we developed the capital expenditure forecast for the 2025-30 period by starting with our existing program of work and long-term forecasts of expenditure and then challenging, testing and refining the capital forecast over a 2-year process through several concurrent processes:

1. Bringing forward our usual strategy, analysis and investment decision making processes, including governance, prioritisation and quality assurance

2. Undertaking additional internal challenge and review at the total, category, program and project level, in light of the long-term uncertainty around the future of gas

3. Delivering our Gas Networks 2050 engagement program with several key components including:

    a. Plausible future energy scenarios developed by an Expert Panel to help inform our planning and focus for the 2025-30 period as discussed in section 3.2

    b. Future of gas initiatives filtering undertaken by our Advisory Board, which occurred before we engaged customers. This included the recommendation that we take forward accelerated depreciation for Customer Forum engagement

    c. Engaging our Customer Forum to understand customer preferences and key considerations.

4. Participating in the AER's Early Signal Pathway, where the AER and its Consumer Challenge Panel have provided feedback on our draft proposals and key components which we have considered in preparing our 2025–30 access arrangement.

The impact of these processes can be seen in Table 6.1, which identifies the capital program at four key points along its development. While each iteration includes a multitude of changes, refinements and updates the overall impact of these four processes shows an overall reduction of 11% (excluding ICT) in our capital expenditure forecast over the 24-month period.

Table 6.1: Development of our 5-year forecast for the 2025 Plan ($2025 millions)

Category	Starting point *January 2023*	Early Signal Pathway #1 *November 2023*	Draft Plan & Early Signal Pathway #2 *January 2024*	2025 Plan *June 2024*	Overall Change
Connections	324.6	269.5	269.0	281.8	-13%
Emissions: Reducing our emissions	67.3	84.4	62.5	59.5	-12%
Emissions: Facilitating Renewable Gas	86.2	67.7	74.0	83.4	-3%
Stay in business: Excluding Metering	233.4	243.1	231.5	198.0	-15%
Stay in Business: Meter Replacement	174.3	178.5	184.0	169.4	-3%
ICT	104.8	109.3	109.0	40.3	-62%
Total	990.7	952.4	930.0	832.5	**-16%**
Total (Excluding ICT)	**885.9**	**843.0**	**821.0**	**792.1**	**-11%**

Note: Totals may not sum due to rounding.

You can find more details about how we developed the 2025-30 capital expenditure program in *JGN - Att 5.1 - Capital expenditure*.

To further lessen the bill impact of our depreciation proposal, our proposal also includes a range of measures that reduce our costs and lower our prices. These offsetting measures putting downward pressure on 2025–30 revenues and prices include:

- Reducing our operating expenditure forecasts by an ongoing productivity target of 0.86% per annum which lowers our operating expenditure by $24M over five years
- Receiving less return on assets over the period due to the $300M reduction in our RAB
- Reducing ICT expenditure by $2.5M in opex and $3.2M in capex by the removing the CX project to align with customer expectations.

6.3 Implementing measures to reduce future risk

Our proposal also looks to future risk and implements measures that will lessen that risk by:

- Helping minimise RAB growth, including though our reforms to our model standing offer that lessen the RAB growth from customer connection cost contributions, and lower forecast connections.
- Helping sustain gas demand through enabling low-emission renewable biomethane connections that reduce the emissions intensity of our delivered gas and thereby make it easier for our customers to stay connected whilst working towards their own emissions reduction ambitions and obligations.
- Adjusting the approach to demand risk sharing through our proposed hybrid form of tariff variation mechanism, which will reduce the scope for gains or losses for us or our customers amid future uncertainty in gas demand.

Alongside the AA measures, we will continue to seek government policy measures to reduce risk for us and our customers. For example, through our emissions reduction program – see *JGN - Att 4.1 - Emissions reduction program* – we propose to take a proactive approach and play our role in helping achieve the Australian and NSW emissions reduction policies and reduction targets. We will:

1. **Reduce customer emissions by enabling access to renewable gas.** We will facilitate the introduction of 6.7 PJs of renewable gases into our network, decarbonising 8.6% of the energy we transport by 2030. This will support our customers achieve their emissions reduction goals and reduce greenhouse gas emissions by 347,000 tCO2e a year by 2030. This will deliver 0.4% and 1.0% of the reductions needed to achieve the Australian and NSW government's 2030 emission reduction targets.

2. **Move to direct emission measurement for our fugitive greenhouse gas emissions**, which account for 98.8% of our emissions, and away from generic and likely inaccurate benchmark emission factors. This will allow us to:

    - Report accurate emissions – by ensuring that reported emissions reflect our actual emissions, rather than an estimate based on generic emission factors and high-level assumptions of our network performance.

    - Reduce actual emissions – as it provides sufficiently granular data to identify the size and location of leaks and development of an optimised repair program.

    Moving to direct emissions measurement is essential to enabling the achievement of emission reduction targets for our network, is consistent with global good industry practice as well as the goals of the Global Methane Pledge, which the Australian Government and Jemena has committed to.

3. **Deliver no-regrets targeted actions to reduce our direct (scope 1) emissions.** This includes replacing deteriorating cast iron mains, reducing pressures across our network (to reduce leakage), and continuing to install low/no emissions equipment (e.g. catalytic heaters).

In particular, our plan to facilitate access to renewable gas will also:

- Unlock a gas decarbonisation pathway for our customers (particularly important for our customers who cannot electrify).

- Ensuring that hard to abate manufacturing sectors can reduce or avoid emissions, rather than purchasing offsets, enabling continued economic viability.

- Avoid significant whole of economy consequences from a higher cost electricity only pathway to net-zero by supporting renewable energy choice.

- Avoiding placing additional cost and operational pressures on the electricity system.

- Reducing gas network stranding asset risk and, in turn, constraining the overall higher level of accelerated deprecation required, given the reduced opportunity to recover at least our efficient costs. Without renewable gas, our proposal would need to assume that our network has a limited role to play to a decarbonised future and in turn seek a higher level of accelerated depreciation.

7. Our supporting materials

The AER Information Paper - Regulating gas pipelines under uncertainty - 15 November 2021 set out the AER's expectations for information that gas networks should provide when proposing to accelerate depreciation in response to uncertainty. Table 7.1 sets out where we have provided information in line with these expectations.

Table 7.1: Statement of required information provision

AER expectation	Our response
Provide plausible future energy scenarios that covers a spectrum of outlooks from the most pessimistic to the most optimistic for their networks, and to estimate the likelihood (probability) of each scenario	This is provided above in section 3.2.
Demonstrate the magnitude of stranded asset risk and possible divestment and investment plans under each scenario	This is provided in section 7.2, *JGN - Att 7.4 - Future of gas analysis* and the Advisory Board session 7 Handbook provided in *JGN - Att 2.5 - Appendix C to KPMG Advisory Board Report*.
Identify the factors that influence the estimates of expected economic lives, such as applicable government policies, evidence of their customers' sentiments in switching away from gas, developments in competing technology etc	This is provided above in section 3.
Identify those assets that may be repurposed for transporting hydrogen and those that cannot be	This was prepared to inform our 25 Nov 2023 Advisory Board Deep Dive 1 discussion about facilitating low-emission renewable gasses.
Identify those assets whose economic lives may need to be adjusted to reflect the potential decline in long-term demand	Our proposal has identified the asset class most likely to face reduction in economic life relative to their technical life, and has therefore deducted the $300M of accelerated depreciation. This is provided in section 4.3.
Identify the value of stranded assets under the different forecasting scenarios	This is provided above in Table 3.2 and section 7.2 *JGN - Att 7.4 - Future of gas analysis.*
Identify the costs that may be avoided or incurred in the different forecasting scenarios	These additional and avoided costs were prepared to model the plausible scenarios in our Future of Gas model and presented to our Advisory Board in opt in sessions and at our 22 Mar 2023 deliberative day of testing response options. Our Future of Gas model with this data was provided to the AER during our early signal pathway engagement and is provided in section 7.2 *JGN - Att 7.4 - Future of gas analysis*.
Identify the level of customer support for the business's proposed action to manage the risk and the quality of customer engagement	The level of support and process for testing this is summarised above in section 3.4.3 and detailed in chapter's 2 and 3 of the 2025 Plan. The quality of our engagement is evidenced in the findings of newDemocracy as the appointed independent evaluator, Sagacity Research customer forum participation feedback report and in the letter from our Advisory Board chair to the AER. For further information see *JGN - newDemocracy - Att 2.8 Independent evaluation report; JGN - Sagacity and JD Insights - Att 3.3 - Sagacity and JD report;* and *JGN - Att 2.6 - Advisory Board Chair - Letter of Support*.

AER expectation	Our response
Identify analysis of the price impact for the business's proposed action	This is provided above in section 5.