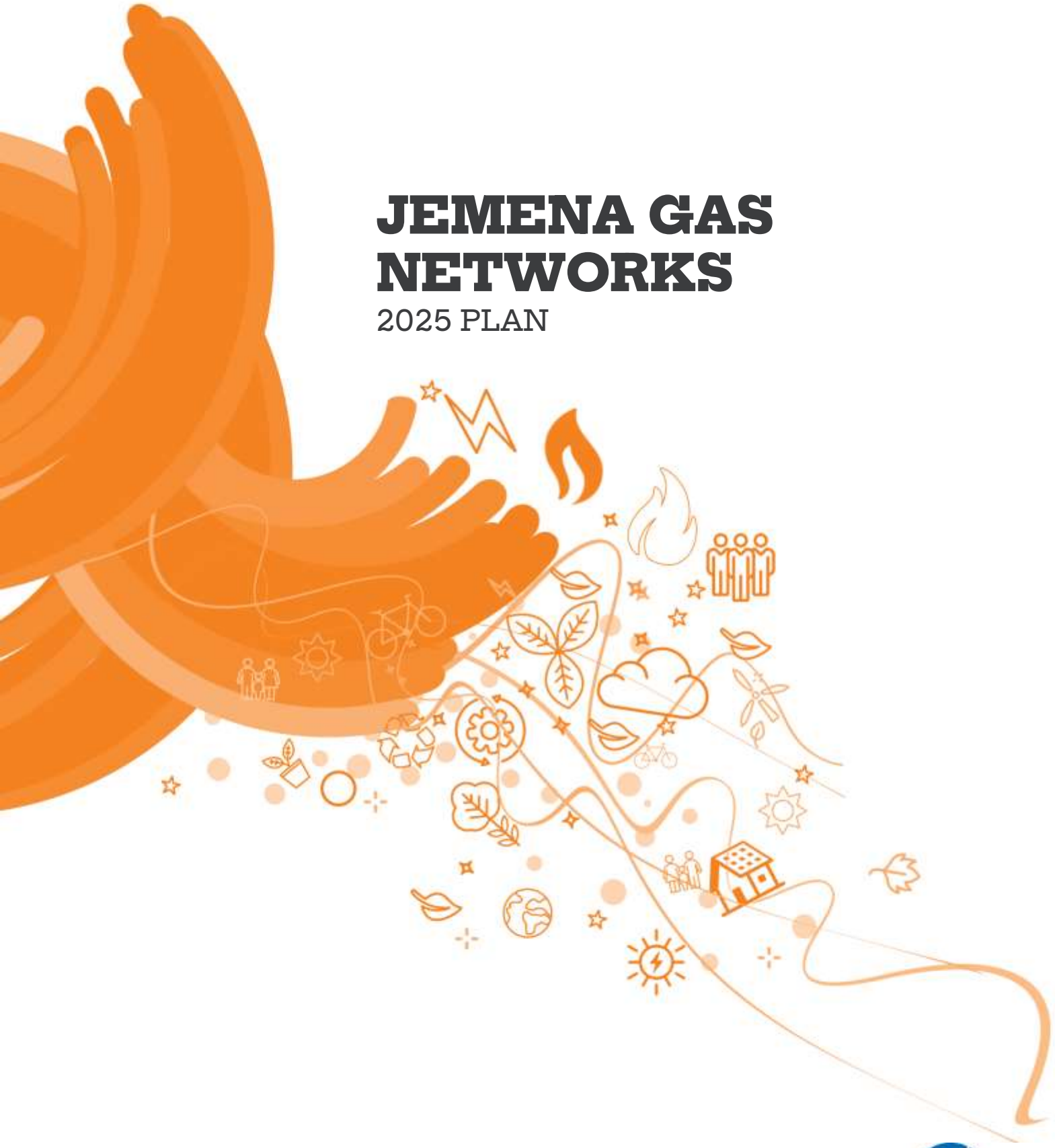
JEMENA GAS NETWORKS

2025 PLAN



Jemena
bringing energy to life

JUNE 2024

The origins of the name Jemena is from the Wagiman people in the Northern Territory (spelt Jemena in the Wagiman language). It means “to hear, to listen, to think”.

We have been operating with permission from the Wagiman people under the variant name Jemena since 2008.

JEMENA GAS NETWORKS (NSW) LTD

2025-30 ACCESS ARRANGEMENT REVIEW

Dollar values are reported in the value of a dollar in 2025 (unless otherwise stated) and exclude the impacts of inflation.

Planning for customers now and in the future

A message from our Chairman

Each day, our New South Wales gas network safely transports gas to more than 1.5 million homes and businesses that rely on it for a range of applications such as cooking, space heating, and to produce hot water.

The energy system both here in Australia and globally is undergoing a once-in-a-generation transformation. As a result, our pricing and services for 2025 to 2030 (our 2025 Plan) reflected in our Access Arrangement and Access Arrangement Information (our 2025 AA proposal) is arguably the most important one we have produced to date. With this in mind, we have developed a robust 2025 Plan which reflects the needs of our customers today, as well as their aspirations for tomorrow, and we were humbled by the willingness of our customers and stakeholders to contribute to the development of our 2025 Plan.

When we consulted with customers on our Draft 2025 Plan to test whether it aligned with their feedback and expectations, our customers reaffirmed that affordability over the short and long term continues to be front-of-mind, and reiterated their support for retaining choice when it comes to energy supply. At the same time, we also heard about how important it is to ensure the most vulnerable members of our community are supported through the energy transition – a sentiment we share and something we have reflected throughout our 2025 Plan.

Responding to these concerns, it is clear we still have an important responsibility to support the efficient and safe utilisation of our gas network into the future - acknowledging that the future is uncertain. We also have a responsibility to reduce our greenhouse gas emissions, as expected from our customers, which can be achieved through our proposed 2025 Plan. We intend to make investments in technology and renewable gases by connecting biomethane suppliers to our network.

Our customers have told us that they value choice and reliability and being able to access different sources of energy if and when they need it.

We've listened to our customers and stakeholders and facilitated 'closing the loop' sessions with them to test whether our plans align with their values and expectations with their feedback being woven into this 2025 Plan.

Jemena will continue to work with our customers and stakeholders to ensure the provision of reliable, affordable and sustainable gas services to our customers as we undergo the energy transition.

Jiang Longhua
Chairman of the Board
SGSPAA (parent company of Jemena)

A message from our Managing Director

With energy underpinning every part of our lives, the energy transition is something which impacts us all. As such developing our 2025 Plan has been an important, and difficult task, as we have sort to balance the needs of our customers today, while also preparing for their needs in the future.

While there is still much we do not know, we are certain that working collaboratively with our customers, governments, community members, and other stakeholders will become increasingly necessary throughout the transition. That's why our 2025 Plan incorporates insights and views garnered from our customers and stakeholders as part of a thorough deliberative engagement process. Through that engagement process we held 99 face-to-face and virtual meetings and spent more than 206 hours hearing from over 221 customers. The 2025 Plan builds upon the feedback received from customers and stakeholders up to and after the publication of the Draft 2025 Plan in February 2024, to ensure our 2025 Plan aligns with their expectations and values. As a result, we are confident our 2025 Plan accurately reflects the values which are most important to our customers today and tomorrow.

Our customers told us they value affordable and reliable energy, while also wanting to exercise choice over how they power their lives. They also told us they care deeply about the environment and want us to invest in new technologies which will help lower carbon emissions as Australia strives towards achieving its net zero ambitions. We heard that flexibility and adaptability are essential in Jemena's context and planning horizons. Our engagement spanned over 18 months, and in that time, we learned so much from these discussions and we were both inspired and excited by the vision of the future we share with our customers and stakeholders.

At the same time, we also recognise the future role of gas and gas networks will vary significantly depending on technological developments, government policy, and the cumulative decisions of customers as the economy transitions to net zero emissions. Recognising the expected future decline in gas demand, this 2025 Plan proposes a suite of initiatives aimed at minimising price shocks over the longer term, addressing intergenerational equity issues, whilst supporting the transition to net zero by 2050. These initiatives are not mutually exclusive and in some cases are complementary, which has been an important consideration when developing the 2025 Plan.

Our 2025 Plan balances the needs of our customers and communities today with future generations, mainly through upfront actions and investment which is aimed at supporting a fair and equitable energy transition for customers over the long term. The Australian Energy Regulator (AER) will now review and assess our 2025 Plan.

David Gillespie
Managing Director

Summary

The energy system 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 Australian energy landscape. This presents a complex challenge for us and our customers, and it has been a primary focus in developing our 2025 Plan to meet the long-term interests of customers.

Whilst we believe that our network can play an important role in supporting an orderly and least cost transition to net zero, there is still much uncertainty about both the exact pathway and pace of the energy transition.

The Australian Energy Market Operator (AEMO) forecasts residential and small commercial consumption to gradually decline in the short 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.[1]

This uncertainty adds complexity to our planning processes but it is clear that the need to act now is imperative – the earlier we start to address the challenges presented as a result of the rapid energy transition, the smoother the pathway to net zero will be. Our 2025 Plan proposes to implement a number of initiatives based on the best available information and provides flexibility to adjust these initiatives in the future as new information becomes available.

We have undertaken an extensive engagement program with our customers and key stakeholders over an 18-month period to understand their expectations of the services we provide, and their views about how we should best plan for, and support, the energy transition in the face of uncertainty.

Our 2025 Plan summarises what we have learned from our customers and stakeholders and explains how their views have shaped our initiatives for our gas network over the period, 1 July 2025 to 30 June 2030.

In February 2024, we published our Draft 2025 Plan for consultation to ensure that the decisions we have made about our initiatives, costs and prices reflect our customers' expectations and long-term interests.

Having published our Draft 2025 Plan, we re-engaged with customers to test whether our proposals aligned with their values and expectations. We also held 'closing the loop' sessions with the Advisory Board, business customers and retailers to test whether we have correctly heard and understood the needs and expectations of our customers.

The priorities of our customers—which can be summarised by their key values of affordability, reliability and safety, fairness, choice, and the environment—have played an important role in shaping our 2025 Plan.

Regardless of how we respond to the energy transition and the priorities of our customers, we must also continue to meet our regulatory obligations in regard to safety, reliability, security, and the environment, which are key drivers of our expenditure forecasts for the 2025 Plan period.

In developing our 2025 Plan, we have also sought to ensure that it is consistent with the National Gas Objective, including its recent update to recognise Commonwealth and State Government emissions targets, the Commonwealth Government's recently released Future Gas Strategy, meeting the Safeguard Mechanism requirements and to account for the recognition of biomethane and hydrogen blends within the regulatory framework.

How we are responding

Our 2025 Plan will ensure that we can continue to provide our customers with a safe and reliable service over the 2025 Plan period and proposes a number of initiatives aimed at supporting a fair and equitable energy transition for customers over the long term.

These initiatives include:

- **Asset Management:** We propose to change our approach to asset management by taking a more targeted approach to our mains replacement program by using technology to better understand the condition of our assets. Using technology to replace assets in a targeted manner can reduce the capital expenditure (capex) that we incur and the growth of our regulatory asset base and enable us to reduce network emissions.

1 AEMO, Gas Statement of Opportunities, March 2024.

- **Investing in renewable gas connections:** We believe that renewable gas can play a role in meeting challenges presented by the energy transition. Supporting renewable gas connections from biomethane suppliers will enable customers to access renewable gas sooner and will provide greater energy security from fuel diversification. As the supply of renewable gas grows, this will help retain some of our customer base and lower the risk of asset stranding.
- **New connections:** The proposed changes to our connections policy will mean more customers are required to make an up-front contribution if they wish to connect to our network. This change will help to reduce the growth in our asset base, and lower asset stranding risk with minimal impact on customer prices. We have submitted to the AER proposed revisions to our Model Standing Offer so that fewer customers qualify for a free connection.
- **Accelerated depreciation:** By speeding up the capital recovery of our assets in response to the energy transition we can avoid the potential for any inequitable recovery of our investments and ensure more stable prices over the long term by reducing the amount of our asset base that must be recovered in future periods.
- **Abolishments:** In line with customer feedback, we are proposing to continue our current approach in charging for abolishments.

We are also making **changes to our tariff structures** so they can be more adaptable and ensure fairness in the way we charge for the provision of our gas network services. This is combined with our **proposal to move away from a price cap tariff variation mechanism**—which sets the way we adjust prices annually over the 2025 Plan period—to a hybrid mechanism. This will share volume risks between us and customers and address the AER's concerns around gas networks earning higher than forecast revenues by limiting revenue earnt through volume outperformance.

> "We believe that any decisions should be made with the future of all Australians in mind, and be measurable, tangible and proactive. Many of the preferences fall into a 'middle ground' which may slow change in either direction. If these decisions continue to be delayed, we only pass these issues on to the next round of participants in the Jemena public forum in 5 years."
>
> **Customer Forum Recommendation**

In formulating these initiatives, we assessed how they performed across a number of plausible future energy scenarios and how they interact together. These initiatives are not mutually exclusive and in some cases are complementary, which has been an important consideration to ensure we have taken a balanced and equitable approach when developing our 2025 Plan.

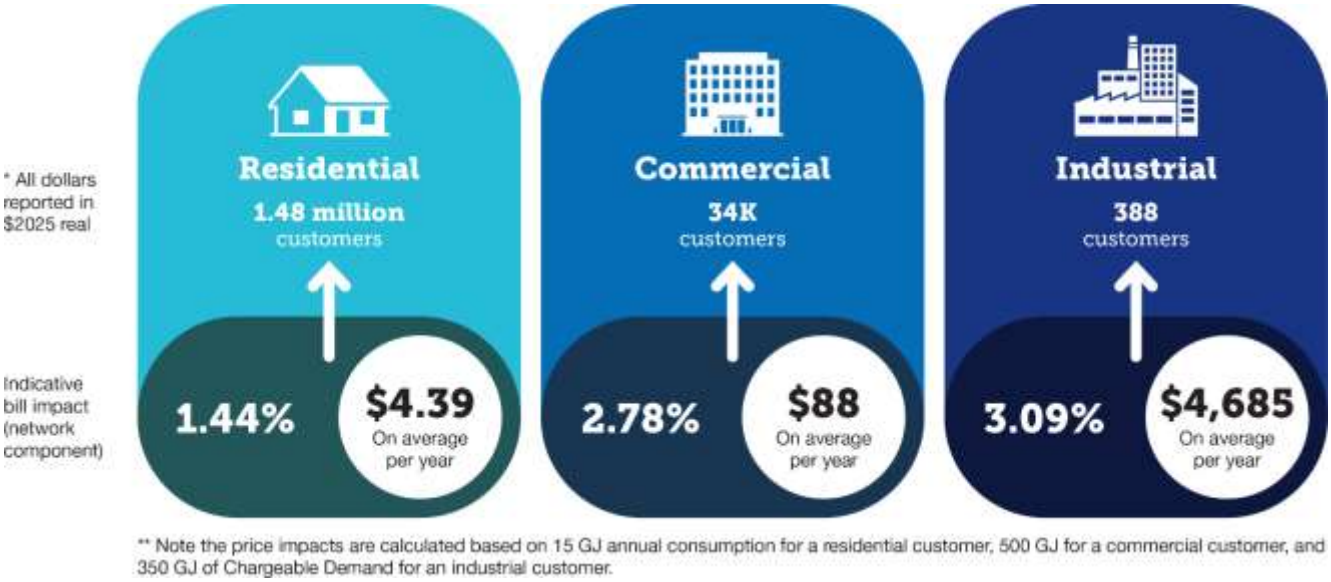
What our 2025 Plan means for customers

Our 2025 Plan will result in a real network bill increase of 1.44% per year over the 2025-30 period, or $4.39 per year for an average residential customer. These network bill increases exclude the impact of inflation and are presented using the value of a dollar in 2025, as is other financial information throughout the 2025 Plan. A typical commercial customer consuming 500GJ annually will experience a real network bill increase of 2.78%, or $88 per year over the 2025-30 period. This is partially attributable to the introduction of new tariffs designed to categorise customers based on their consumption levels.

For a large industrial customer with 350GJ of Chargeable Demand, our 2025 Plan will result in a real network bill increase of 3.09% per year over the 2025-30 period. This is because we are proposing to gradually increase the revenue proportion we recover from our demand customers to enhance the cost reflectivity of our tariffs.

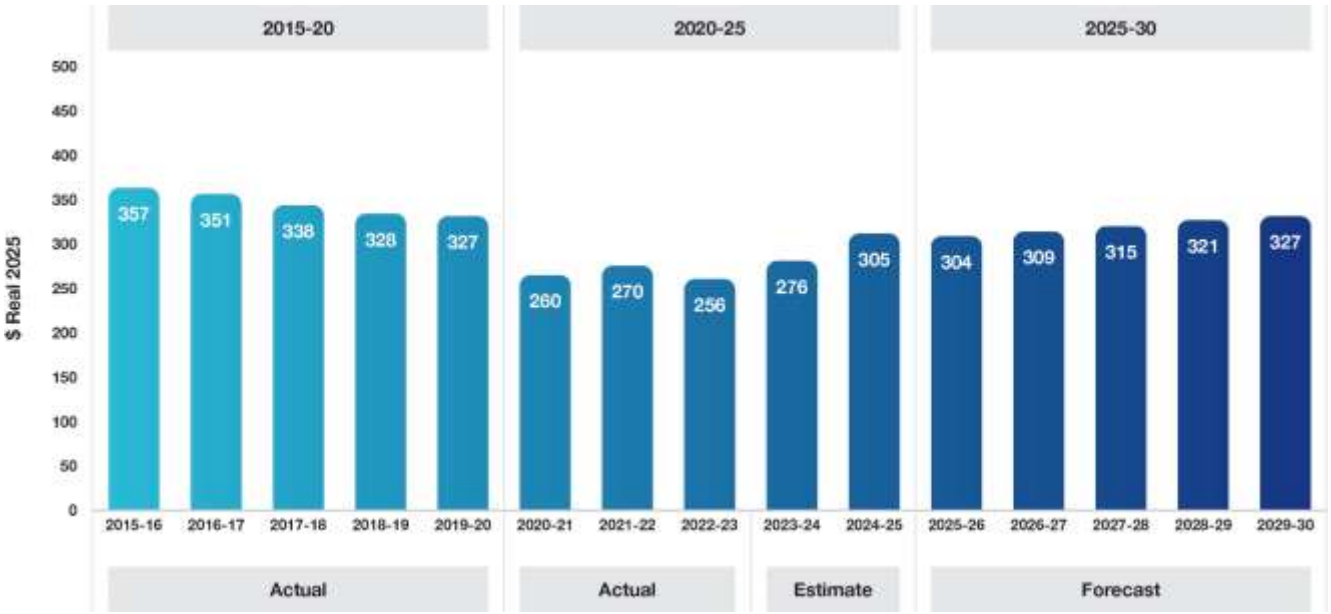
In developing our 2025 Plan, we have been cognisant of the price impacts on customers both now and into the future. While some of the initiatives place an upward pressure on customers' bills in the next five-year period, they will help provide greater stability to prices over the long term and support the efficient future utilisation of our gas network. Recognising affordability and cost of living pressures impacting customers today, we have sought to carefully balance the need to take action now against the short-term price impacts of our initiatives. We believe that our 2025 Plan, which has been shaped by the feedback of our customers, reflects a balanced approach. Importantly, if we delay taking action during the 2025 Plan period, customers will be worse off over the long term.

Figure S.1: Network bill impacts of our 2025 Plan (excluding the impacts of inflation)



Recognising that price fluctuations in the cost of services like gas can negatively impact customers' ability to balance household budgets, we have worked towards achieving a smooth network bill by maintaining steady bills over the 2025 Plan period, as shown in Figure S.2.

Figure S.2: Annual network bill for a typical residential customer consuming 15GJ per annum



(1) In the 2020-25 period, a $204M downward adjustment was made to our 2020-25 building block costs to return revenue over-recovered during the 2015-20 period. Without this downward adjustment, the annual network bill would be higher over the 2020-25 period.

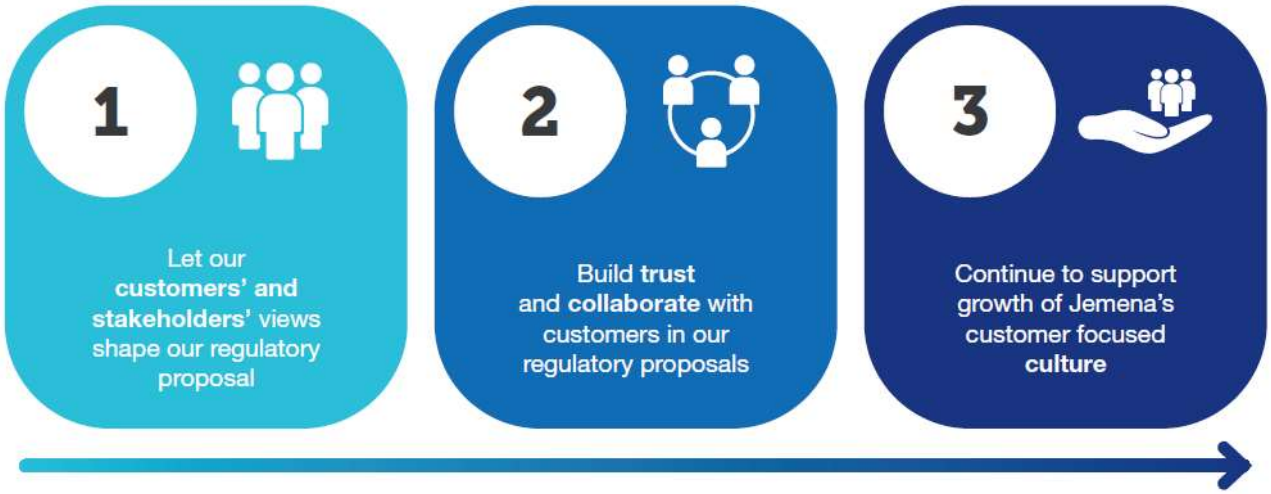
What our customers have told us

To understand the needs and expectations of our customers and stakeholders, and to ensure that our 2025 Plan could be truly shaped by them, we have undertaken an extensive engagement program over an 18-month period, which has tackled head-on, the key challenges associated with the energy transition towards net zero, and uncertainty surrounding the future role of gas networks.

In addition to understanding customer views and preferences on the services we will provide over the 2025 Plan period, we have also sought to genuinely engage on the full spectrum of possible initiatives that can be implemented to help us manage uncertainty. To enable this, our customers have considered the long-term implications of each initiative under a range of plausible future scenarios. This has enabled them to better understand the risks, consequences and trade-offs that we have considered in developing the 2025 Plan, and the implications of our decisions for customers over the long term.

Our engagement objectives have guided our engagement with our customers and stakeholders and align to our Jemena value of 'Think like a customer'.

Figure S.3: Our engagement objectives



Throughout the course of our engagement program, most customers and stakeholders we spoke to recognised the need for action now to meet the challenges ahead, and to support the transition to net zero emissions by 2050. Our customers have provided their views and insights on what they want and value about their gas service, and what they would like us to prioritise as we plan for an uncertain future. They believe that any decisions we make should be made with the future of all customers in mind. Many of their preferences fell into a 'middle ground' to ensure that our initiatives are set in a balanced manner and that we have the flexibility to readjust our initiatives as we learn more about the energy transition.

> "Need to consider diversity."
> **Young People's Forum**

Central to our customer engagement program was our commitment to consult with a wide array of customers to ensure that we understand the diverse perspectives of customers' needs and expectations on our services, and on the initiatives. We tasked the Customer Forum to vote on the package of initiatives and reach consensus to ensure that the proposals put forward in the 2025 Plan represents the diverse perspectives of our customers in a balanced and equitable manner.

We have also taken on board the feedback and views from large customers, small businesses, and retailers received throughout the consultation process which have largely aligned with the views of our community representatives - via the Customer Forum recommendations.

The 2025 Plan will take the first steps towards achieving the Customer Forum recommendations and our broader customer preferences. We have used this feedback, which can be summarised into the five key customer values, to help shape the 2025 Plan.

Affordability

"Gas is reliable and affordable." (Culturally and Linguistically Diverse Customer Forum)

We heard that balancing the rising cost of living is a priority for our customers so that no one is left behind due to the energy transition.

Our customers want us to consider affordability over the short and long term when making decisions.

Our 2025 Plan:

- Reflects a prudent approach to planning by carefully balancing the need to take action now to support the energy transition, whilst also ensuring that our network charges remain stable and affordable over the 2025-30 period.
- Includes a number of initiatives – like accelerated depreciation – that seek to ensure prices remain stable and equitable over the long term.
- Will enhance our vulnerable customer program to better support customers experiencing vulnerability.

Reliability and safety

"Safety and reliability are important factors to ensure sustainable use of energy in the long run." (Customer Forum)

We heard that customers want a safe and reliable gas service.

Our 2025 Plan:

- Includes a prudent and efficient amount of expenditure that will ensure the ongoing safety and reliability of our network.
- Helps support the security of gas supply across the network by facilitating the connection of renewable gas production facilities into our network.
- Adopts a more targeted approach to the assets we replace by using technology that enables us to detect gas leaks more efficiently and reduce network emissions.
- Includes investments in digital platforms and Information, Communication and Technology (ICT) systems to support maintenance and operations that sustain network reliability.

Fairness

"To have it fair and equitable for all. Equality and equity and justice is maintained" (Customer Forum)

Our customers wanted us to consider fairness in context of the energy transition, and its impacts on both existing and future generations, and on our more price-sensitive customers.

In our 2025 Plan:

- We propose a range of initiatives to help us manage the challenges presented by the energy transition.
- To ensure that these initiatives are set in a balanced manner that is fair to customers, we developed an economic model with four gas demand outlooks out to 2050. The modelling enabled us to assess the initiatives and understand how best to manage affordability and mitigate asset stranding risks and intergenerational equity issues in the long run as the energy system transitions.

Choice

"Banning gas is not speaking for people, and allowing choice." (Customer Forum Recommendation)

We heard that customers want the choice to be able to use gas both now and into the future, and that there should be diversity of supply.

Our 2025 Plan:

- Will invest in renewable gas connections to support the supply of renewable gas which enables customers the choice to keep using gas in their homes and businesses.

Environment

"By utilising the biomethane as an option, we are protecting the environment by having another renewable gas option." (Customer Forum Recommendation)

We heard from customers that they want us to contribute to a more sustainable environment in the future.

In our 2025 Plan, we propose to:

- Roll out our emissions reduction program that will invest in:
  - renewable gas connections – with a focus on biomethane – that can help reduce overall carbon emissions across the gas supply chain.
  - new technology that will enable us to better detect and repair gas leaks which will help reduce our greenhouse emissions and improve our capabilities in how we measure and report on our network emissions.

Revenue we require to support the 2025 Plan

We recover the costs of providing our distribution network services from the customers who use them. We do this by charging for these services through our network prices. In developing our 2025 Plan we have sought to balance the recovery of our investments between current and future customers in light of the uncertainty about future gas demand.

From 1 July 2025 we are splitting our current single Reference Service into a Transportation Reference Service (Transportation RS) and Ancillary Reference Services (Ancillary RS).

The revenue that we require to deliver our 2025 Plan for our Transportation RS is $501M higher than the revenue allowance for the 2020-25 planning period, as shown in Figure S.4. The increase in revenue leads to an average increase in revenue per customer of $60[2] per annum but is stable (on a per customer basis) when compared over the three planning periods from 2015-16 to 2025-30. The key drivers for this difference are:

- For the current 2020-25 planning period we included a downward adjustment to our 2020-25 building block costs, to return approximately $204M of revenue over-recovered from the 2015-20 period.
- The forecast revenue for 2025-30 period includes recovery of $300M accelerated depreciation which was not included in our 2020-25 revenue allowance.
- The return on capital for 2025-30 period increased by $106M due to changes in market conditions increasing financing costs.
- Our operating expenditure (opex) forecast reduced by $24M reflecting efficiency improvements we achieved over the 2020-25 period.
- Our incentives scheme revenue increased by $48M due to the introduction of CESS in the 2025-30 period and our underspends against both opex and capex allowances, delivering long-term savings to customers.

The revenue requirement recovers our forecast opex for the 2025 Plan period which will enable us to replenish unaccounted for gas, manage the integrity of our network, transition to cloud and other ICT services, invest in gas leakage detection technology to meet our decarbonisation goals, and comply with legislative requirements.

We are also proposing to enhance our vulnerable customer program to help customers be better informed and engaged on making efficient gas and energy choices for their homes. The program will also provide home gas audits and possible emergency appliance repairs for customers experiencing vulnerability and we will provide the necessary staffing and internal capabilities to deliver the program.

The revenue requirement also recovers the return on the investment that we have made in assets to operate our business and depreciation on our assets, being the amount we need to recover over the 2025 Plan period so that we will recoup our capital costs over the expected life of each asset.

Customer Forum 8

2 In the 2020-25 period, a $204M downward adjustment was made to our 2020-25 building block costs to return revenue over-recovered during the 2015-20 period. Without this downward adjustment, the revenue per customer on average per annum would be $38 higher over the 2020-25 period, and the average increase in revenue per customer in 2025-30 period would be $22 per annum.

Figure S.4: Our revenue requirements over the 2015-2030 period

What the 2025 Plan will deliver for customers

The proposed revenue will help us provide customers with services they expect and deliver on the outcomes we have set out in Figure S.5. Recognising affordability and cost of living pressures impacting customers today, we have also sought to carefully balance the need to take action now against the short-term price impacts of our planned initiatives. Starting to address the challenges presented as a result of the rapid energy transition will help support a smoother transition to net zero. We believe that our 2025 Plan, which has been shaped by the feedback we garnered from our engagement program, supports the long-term interest of our customers.

Figure S.5: What our 2025 Plan will deliver

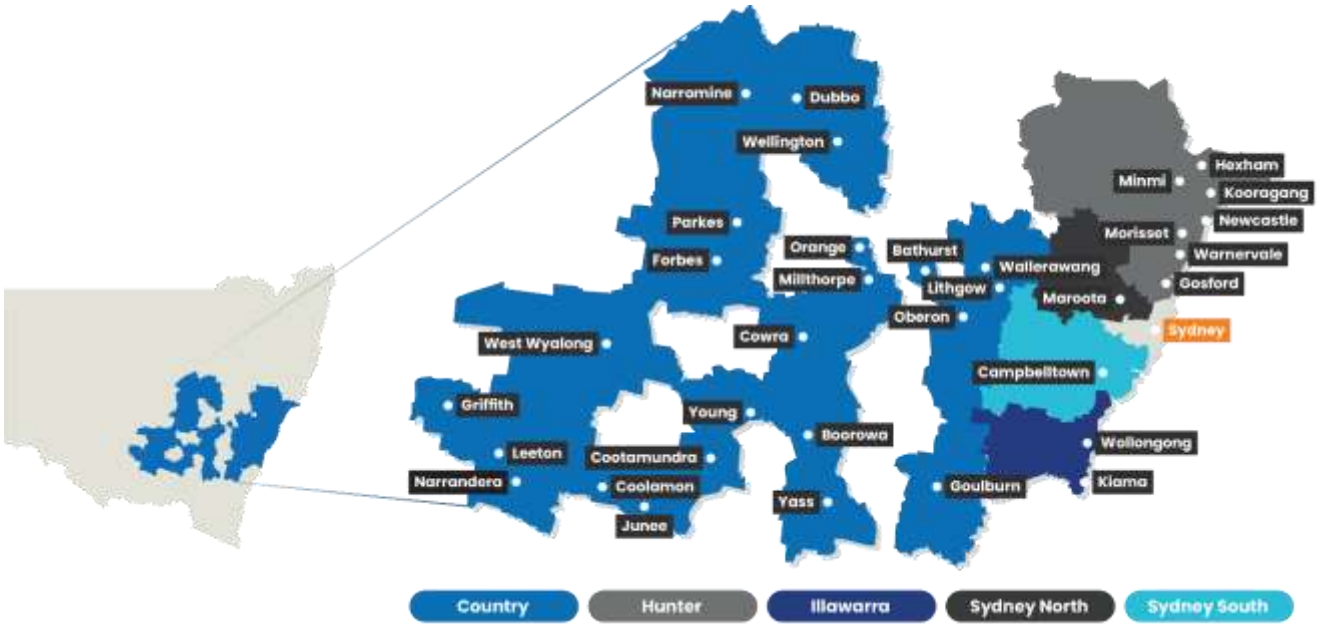
Contents

1. Background: setting the scene

1.1 About Jemena

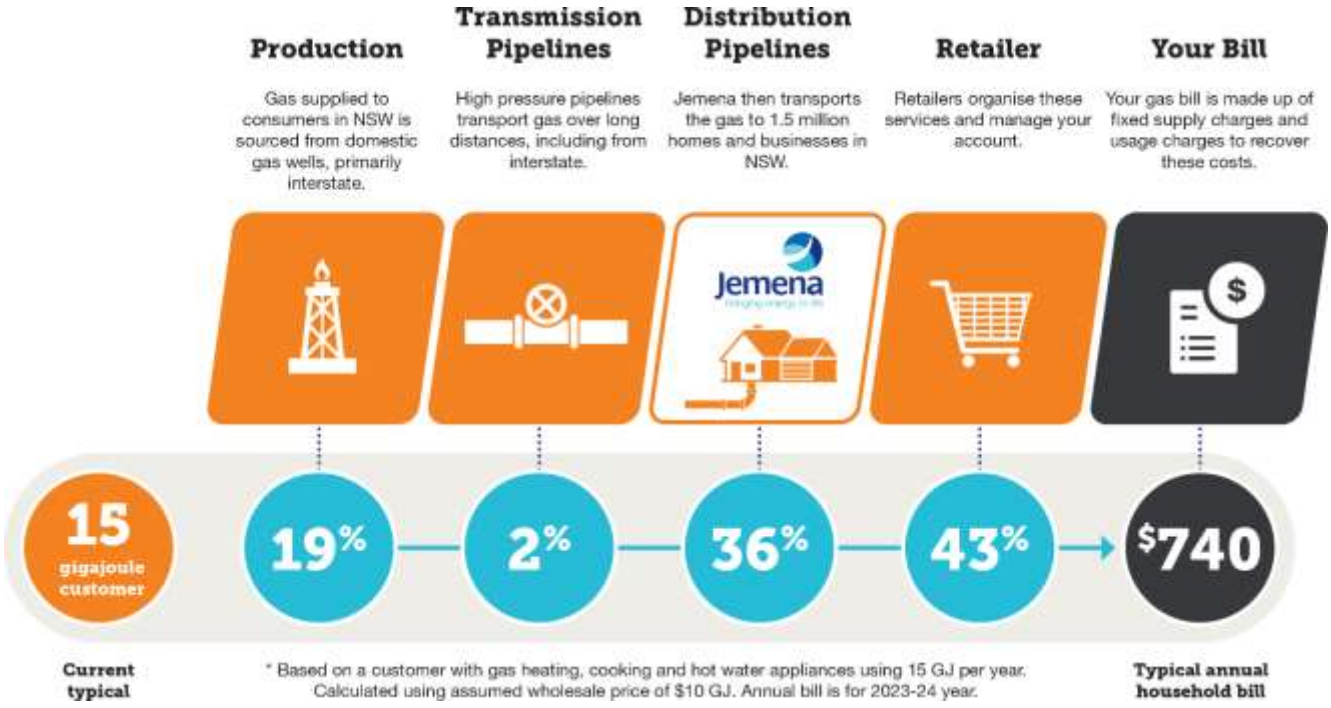
Jemena Gas Networks (NSW) Ltd (JGN, or Jemena) owns and manages 26,000 kilometres of pipes that distribute gas to over 1.5 million homes and businesses across NSW. Figure 1.1 shows our network footprint.

Figure 1.1: NSW Network map



We are responsible for the distribution and delivery of gas to customers which forms a crucial link in the gas supply chain. In 2023-24, our charges comprise roughly 36% of a household customer's gas bill for a typical customer (see Figure 1.2)

Figure 1.2: The gas supply chain



In addition to our role in delivering gas to households and businesses across NSW, we also provide other services for our customers, including meter reads, operational contact centre support and connecting new customers to our network. Some of these activities are summarised in Figure 1.3.

Figure 1.3: Other activities we do for our customers

1.2 Our customers

We categorise our customers into three groups: residential, commercial and industrial. Additionally, we classify them into market types depending on their energy consumption. Volume market customers are those customers using less than 10 terajoules (TJ) of gas annually, while Demand market customers are those consuming over 10 TJ of gas per year.

Figure 1.4: How we classify our customers

Market type		JGN Market size	Consumption
Volume customers under 10 terajoules per year	**Residential:** Homeowners or tenants that use gas for domestic purposes. This includes heating, hot water and cooking.	97.67% (1,468,796)	31.16% (28.4 petajoules)
	Commercial: Small businesses and commercial owners using gas for heating in offices or shops, hot water for medical equipment sterilisation, and for commercial cooking like restaurants and bakeries.	2.3% (34,574)	14.64% (13.3 petajoules)
Demand customers Over 10 terajoules per annum	**Industrial:** Substantial users that need gas for very high heat including chemical production, steel, manufacturing or electricity generation.	0.03% (380)	54.2% (49.4 petajoules)

Figure 1.4 numbers are 30 June 2023 actuals.

1.3 Regulatory framework

The AER sets our regulatory allowances and a price path for a five-year period which is used to set the prices that customers pay over the 2025 period. To help the AER in assessing and setting our regulatory allowances and the price path, we must submit an Access Arrangement proposal, which outlines our plans, the amount we expect to spend in implementing them, and our proposed pricing to recover the costs associated with our plans.

As part of its assessment of our Access Arrangement proposal, the AER will consider, among other factors, the extent and quality of customer engagement we have undertaken during its development. The AER also looks for linkages between the outcomes of our customer engagement program and what we are proposing to ensure our 2025 Plan aligns with customer values and expectations.

When assessing our Access Arrangement proposal, the AER must also ensure that it complies with the requirements set out in the National Gas Law (NGL) and National Gas Rules (NGR). This includes reviewing our proposed revenue to ensure that it represents the efficient costs that we are likely to incur in providing our network services and promotes the long-term interests of our customers.

The AER will then either approve our Access Arrangement proposal as submitted or specify the changes we must make. Once approved, we must set our prices as approved by the AER from 1 July 2025, for a five-year regulatory period.

1.4 What is our 2025 Plan?

Our 2025 Plan, which forms part of our Access Arrangement Information as required by rule 43 of the NGR, provides an overview of our proposed initiatives for the five-year period, commencing 1 July 2025. It sets out:

- how we have collaborated with customers to understand their values and expectations in terms of what our priorities should be
- our strategic response to managing the challenges associated with the energy transition and getting to net zero carbon emissions by 2050
- the services we will provide in meeting customer expectations and our regulatory requirements
- the forecast costs we expect to incur in providing gas network services
- our proposed approach to pricing to recover the revenue required to recover our costs.

Our 2025 Plan has been shaped by the views and expectations of our customers.

Figure 1.5 shows the timeline for the preparation and the AER's approval of our 2025 Plan.

Figure 1.5: Timeline for preparation and AER approval of the 2025 Plan

1.5 Feedback on our Draft 2025 Plan

> "We want net zero at least cost, not any cost. There's been a narrative for too long that the transition to net zero is easy and free when it's really hard and potentially expensive."
>
> **Advisory Board Member**

In February 2024, we published our Draft 2025 Plan for consultation. We did this to ensure that the decisions we make about our initiatives, costs and prices reflect our customers' expectations and long-term interests.

Having published our Draft 2025 Plan, we re-engaged with the Customer Forum - including key voices participants - to test whether our Draft 2025 Plan aligned with the Customer Forum's recommendations and values. We also held 'closing the loop' sessions with the Advisory Board, small and large commercial customers and retailers.

As part of the AER's Early Signal Pathway process, we also held several 'deep dive' workshops with the AER on specific topics in our Draft 2025 Plan. The purpose of the 'deep dive' workshops was to provide AER staff with an opportunity to ask questions and seek more detail on our Draft 2025 Plan. The feedback we received from AER staff has been considered when finalising our 2025 Plan.

The Early Signal Pathway process also required the AER's Consumer Challenge Panel (CCP) to provide the AER with advice on the effectiveness of our engagement activities with customers and how we have reflected customer expectations in our 2025 Plan. During the process we received two progress reports on our engagement that considered the nature and form of our engagement, and evidence of the impact of our engagement on the development of our proposals. The advice provided by the CCP helped us evolve the engagement process and develop our 2025 Plan.

The feedback that we received from our customers and stakeholders throughout our engagement program, including the specific feedback we received on our Draft 2025 Plan, is discussed throughout our 2025 Plan and its associated attachments.

2. How our customers have shaped our plans

Highlights

- Over 20 months we have undertaken extensive engagement with our customers and stakeholders to understand their expectations and values.
- In response to the energy transition and uncertainty, we engaged an Expert Panel that was tasked with co-designing plausible scenarios outlining the future of the NSW energy system and the role that we could play within each scenario.
- The scenarios enabled us to test a range of initiatives so that the Advisory Board and Customer Forum could understand the short term and long-term implications of their deliberations.
- We established an Advisory Board consisting of customer advocates and industry specialists to consider a full range of possible initiatives – informed by the Expert Panel's plausible scenarios - and advise us on which initiatives we should explore with the Customer Forum.
- Central to our customer engagement program was our commitment to consult with a wide array of customers to ensure that we understand the diverse perspectives of needs and expectations of our services and on the initiatives that can help us manage uncertainty surrounding the future role of our gas network.
- The Customer Forum was designed to enable deliberative engagement to consider the initiatives recommended by the Advisory Board to develop a suite of recommendations that have informed the 2025 Plan.
- To support Customer Forum deliberations, we established a Youth Steering Group and a Culturally and Linguistically Diverse (CALD) Steering Group to provide the Customer Forum with their unique values and perspectives.
- We met with small businesses, large users of gas and retailers to understand their needs and expectations.
- The newDemocracy Foundation independently evaluated our Customer Forum process. It concluded that it demonstrated good practice and meet the requirements of the Better Resets Handbook.

2.1 Our engagement program

To understand the needs and expectations of our customers and stakeholders, and to ensure that our 2025 Plan is truly shaped by them, we have undertaken an extensive engagement program over a 20-month period, which has tackled head-on, the key challenges associated with the energy transition towards net zero, and uncertainty surrounding the future role of our gas network.

In addition to understanding customer views and preferences on the services we will provide over the 2025-30 period, we have also sought to genuinely engage on the full spectrum of possible actions (we refer to as initiatives) that can be implemented to help us manage uncertainty about the future, and the pathway to a decarbonised energy system.

To enable this, our customers have considered the long-term implications of each initiative under a range of plausible future scenarios. This has enabled them to better understand the risks, consequences and trade-offs that we have considered when formulating our 2025 Plan, and the implications of our decisions for customers over the long term.

Our engagement program commenced in mid-2022 with Gas Networks 2050. It was comprised of three key elements:

- We engaged an **Expert Panel** consisting of industry and energy specialists, to develop four plausible long-term scenarios for the NSW energy system, including the role of our gas network.

- We established an **Advisory Board,** chaired by Rosemary Sinclair and consisting of customer advocates and industry specialists, to consider a full range of possible initiatives that we might adopt during the 2025-30 period to respond to the rapidly changing energy landscape. To better understand the possible long-term implications of these initiatives, they were examined across the four plausible long-term scenarios developed by the Expert Panel. The Advisory Board advised us on which initiatives we should take to our customers, and how we should engage on them.
- A **Customer Forum** consisting of residential customers. We undertook a deliberative process to deeply understand their needs and expectations of the services we provide, and their views on how we should best plan for, and respond to, the energy transition in the face of uncertainty. We examined trade-offs, and the long-term implications of the initiatives we might adopt during the 2025 Plan period.

Gas Networks 2050 was complemented with extensive customer engagement across the broader community including key voices, a residential customer tariff forum, large users, small business customers, and retailers (see Figure 2.1).

To supplement the feedback we received via our engagement program, we also created a website – yournetwork.jemena.com.au, and promoted it via social media with the aim of seeking broader feedback from as many customers as possible.

Through this, we have shared the opportunity to engage with a total of 7,823 customers, 221 of whom actively shared their views with us.

Figure 2.1: Overview of our engagement

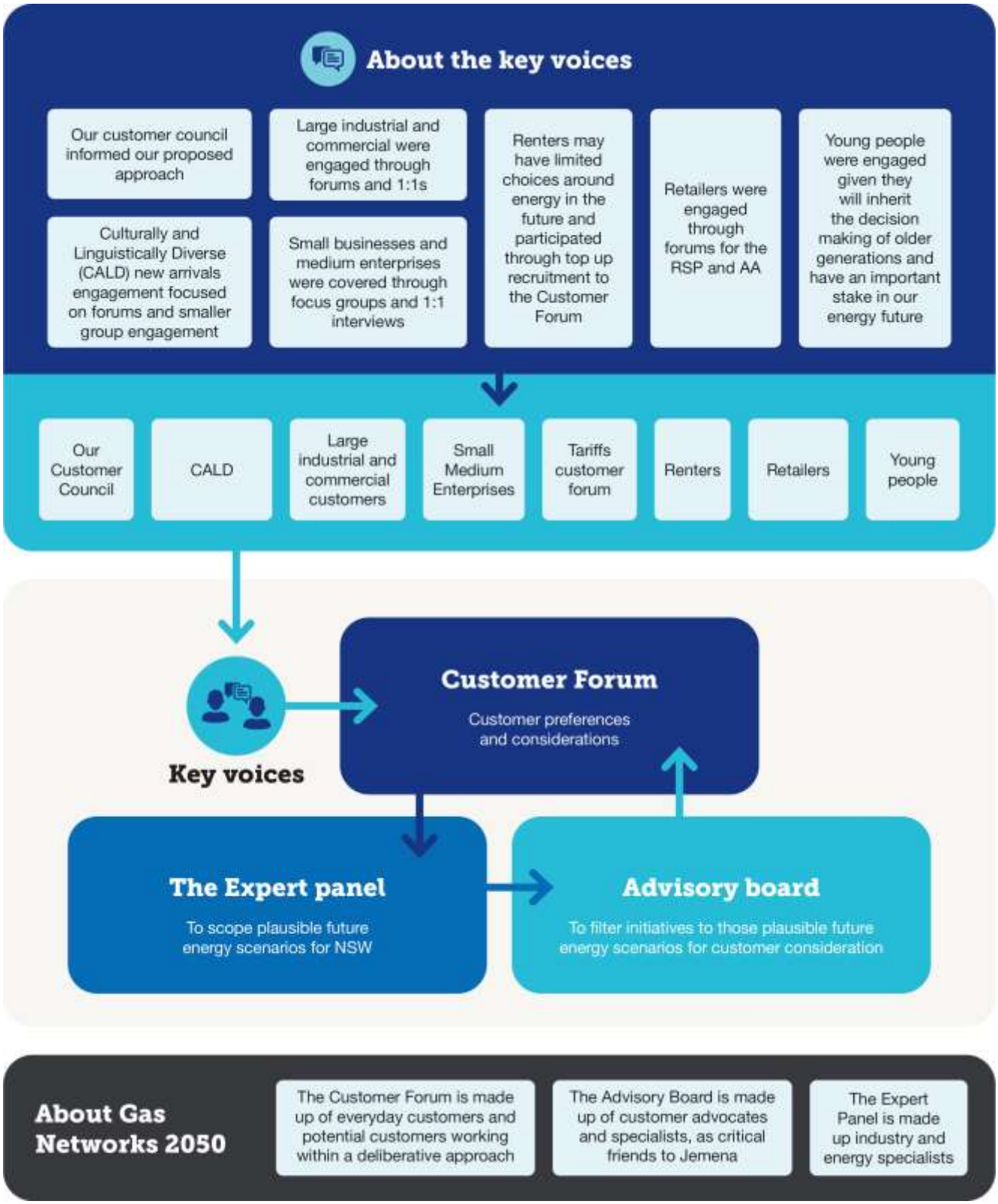


Figure 2.2: Our Customer and Stakeholder Journey

Customer engagement in numbers

221	Stakeholders and customers engaged	**99**	Face-to-face and virtual meetings	**6**	Sessions with young people and CALD community representatives	**13**	Small businesses attended **5** focus groups
206	Hours of engagement	**8**	Customer forums with **40+** customers	**4**	Expert Panel workshops with **6** members	**3**	Workshops with **23** large users
6,000+	Visits to our online engagement platform yournetwork.com.au	**6**	Workshops with gas retailers	**15**	Advisory Board workshops with **10** members	**12**	Customers contributed to **23** hours of deliberation in our tariffs customer forums

2.2 Feedback on our Draft 2025 Plan

In February 2024, we published our Draft 2025 Plan for consultation. We did this to ensure that the decisions we make about our initiatives, costs and prices reflect our customers' expectations and long-term interests.

Having published our Draft 2025 Plan, we re-engaged with the Customer Forum and key voices participants to test whether our Draft 2025 Plan aligned with the Customer Forum's recommendations and values. We also held 'closing the loop' sessions with the Advisory Board, small and large commercial customers and retailers.

As part of the AER's Early Signal Pathway process, we also held several 'deep dive' workshops with the AER on specific topics in our Draft 2025 Plan. The purpose of the 'deep dive' workshops was to provide AER staff with an opportunity to ask questions and seek more detail on our Draft 2025 Plan. The feedback we received from AER staff has been considered when developing our 2025 Plan.

The Early Signal Pathway process also required the AER's CCP to provide the AER with advice on the effectiveness of our engagement activities with customers and how we have reflected customer expectations in the 2025 Plan. During the process we received two progress reports on our engagement that considered the nature and form of our engagement, and evidence of the impact of our engagement on the development of our proposals. The advice provided by the CCP helped us evolve the engagement process.

The feedback that we received from our customers and stakeholders throughout our engagement program, including the specific feedback we received on our Draft 2025 Plan, is discussed throughout our 2025 Plan and its associated attachments.

2.3 Our engagement objectives

To understand the needs and expectations of our customers and stakeholders, and to ensure that our 2025 Plan was truly shaped by them, we adopted three key objectives as shown in Figure 2.3. These objectives guided how we engaged with our customers and stakeholders and aligns to our Jemena value, to 'Think like a customer'.

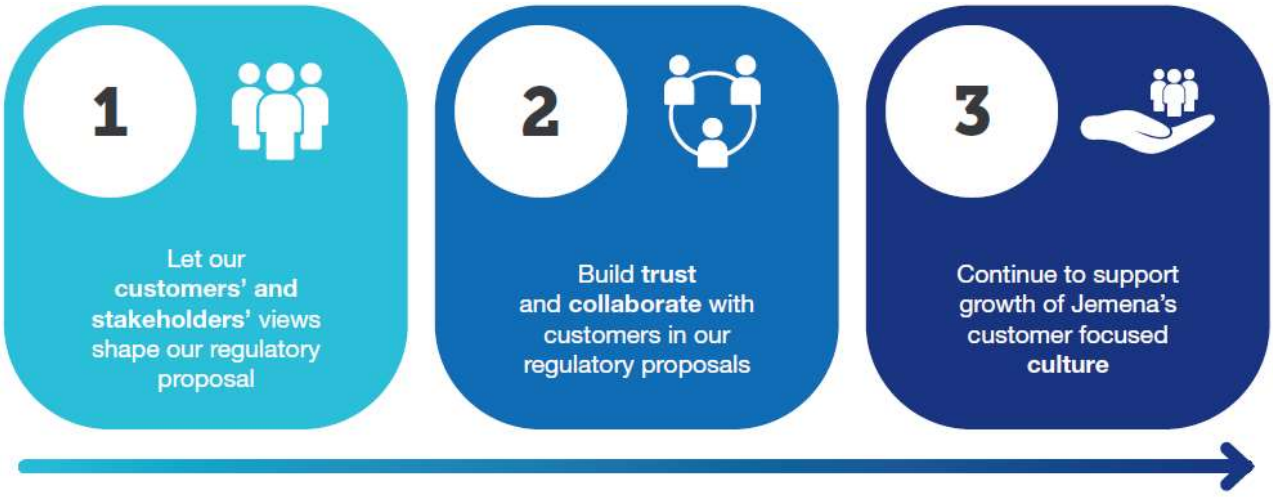
Our approach to understanding customer expectations is based on best practice engagement, specifically in delivering the International Association for Public Participation (IPA2) Core Values and meeting the 'collaborate' end of the IAP2 spectrum. We have also been guided by the expectations of the AER as outlined in the Better Resets Handbook, in particular for the nature of engagement, breadth and depth, and evidence of impact.

Our staff have been actively involved in our customer and stakeholder engagement program. The Gas Networks 2050 program has been supported by our executive management team, with our Managing Director attending key stages of our Advisory Board and Customer Forum deliberations. This high level of involvement across all levels of our business ensured that customer questions could be answered in a timely and open manner. This also provided an opportunity for our staff to learn directly from customers and to understand their expectations.

We engaged KPMG to facilitate the Expert Panel and Advisory Board engagement process. To support the Customer Forum process, we partnered with BD Infrastructure, who are recognised as industry leaders in deliberative engagement.

The newDemocracy Foundation was appointed by BD Infrastructure with the support of us to independently evaluate the Customer Forum which included an action-learning approach to the engagement where regular feedback was provided to help improve the engagement process.

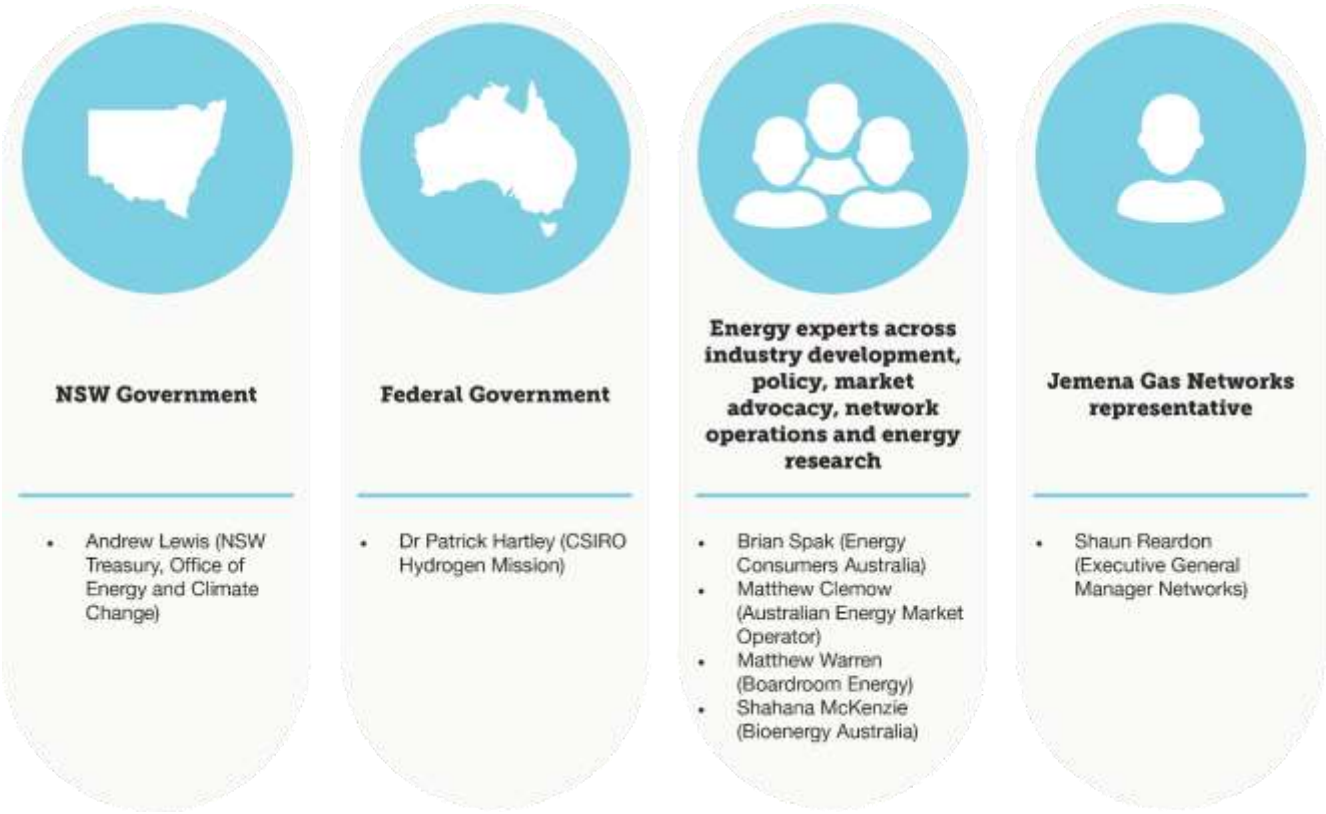
Figure 2.3: Our engagement objectives



2.4 Understanding the needs and expectations of our customers and stakeholders

2.4.1 Expert Panel

Figure 2.4: Expert Panel members



In response to the energy transition and uncertainty, we selected and engaged an Expert Panel of seven independent, energy industry leaders with technical and commercial expertise, ranging across industry development, policy, market advocacy, network operations and energy research.

We engaged KPMG to independently facilitate the Expert Panel engagement process.

The Expert Panel was tasked with co-designing four plausible scenarios outlining the future of the NSW energy system and the role that JGN could play within each scenario. The scenarios explored the characteristics and usage patterns of our customer base over a 2030 to 2050 time horizon. The scenarios enabled us to test a range of initiatives so that the Advisory Board and Customer Forum could understand the short term and long-term implications of their deliberations.

The Expert Panel met four times, over a three-month period. Each session was designed to generate deep discussion between the Expert Panel members to iteratively create and define the four scenarios, and to highlight similarities and points of divergence of outcomes for the future of gas, and our gas distribution network. To inform the Expert Panel's deliberations, they also had the opportunity to hear from Dr Alan Finkel, and his views on the energy transition.

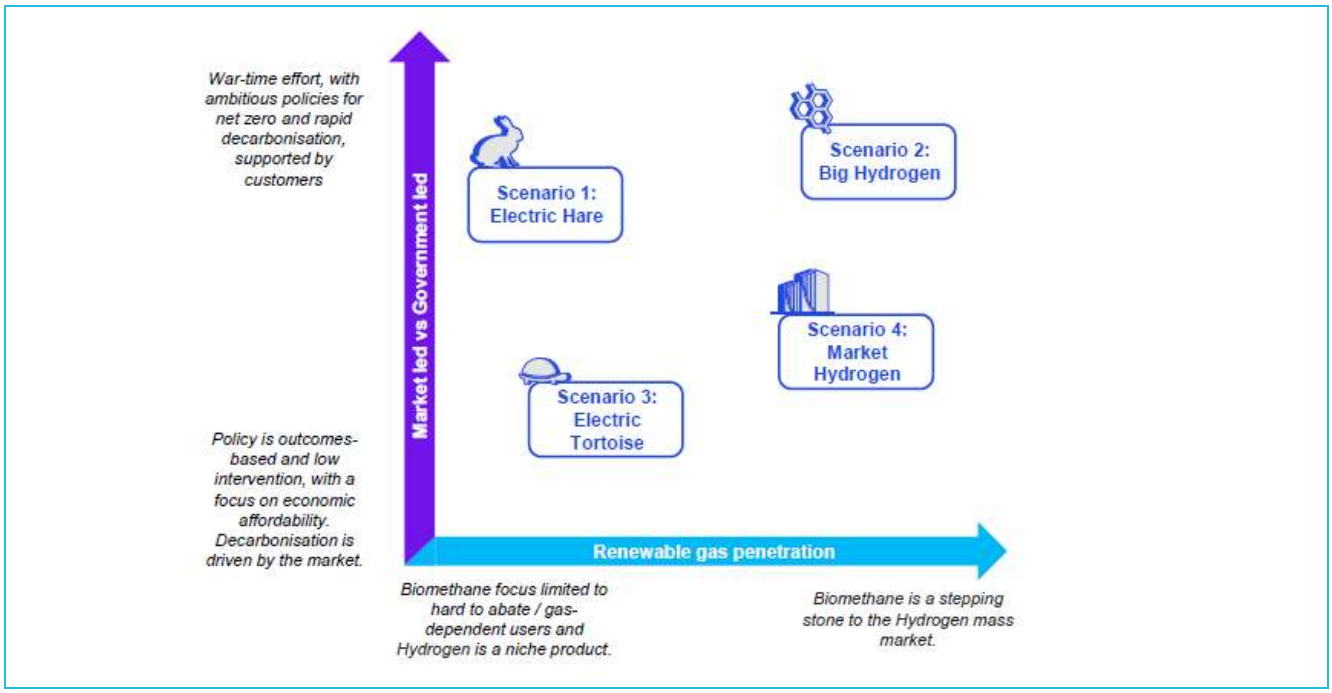
The scenarios developed by the Expert Panel were distinguished by axes based on the potential uptake and penetration of renewable gases, and alternatively the extent of government-directed or market-led progress to decarbonisation. These axes were selected by the Expert Panel, as they highlighted for our NSW gas network key issues of uncertainty, high impact and low levels of control.

In that context, the scenarios produced plausible futures with high and low levels of renewable gas development and uptake, and high and low levels of government policy intervention. The scenarios are listed below and depicted in Figure 2.5.

1. **Electric Hare**, where decarbonisation is supported by strong government policy driving electrification across industry and residential customers, with limited use of renewable fuels for hard to abate sectors.
2. **Big Hydrogen**, where government policy support underpins a hydrogen export economy with a renewable gas target and certification, subsidies, and tax-offsets, driving down the cost of hydrogen production.
3. **Electric Tortoise**, where residential customers slowly electrify and industrial users transition to biomethane, and in which hydrogen remains not commercially viable. Transition is driven by business and community investment.
4. **Market Hydrogen**, where a near-term technological breakthrough driven by the market results in renewable gases becoming competitive with electrification, creating a diverse but fragmented energy mix.

Each Expert Panel member was invited to provide a qualitative view on the relative likelihood of each scenario. Based on this voting, the Expert Panel thought that the scenario with the greatest likelihood was the Electric Tortoise.

Figure 2.5: Plausible future scenarios of gas



Source: KPMG, *Gas Networks 2050: Future scenarios summary report*, January 2023, page 14 (*JGN – KPMG – Att 2.3 – Expert Panel Report*).

2.4.2 Advisory Board

Figure 2.6: The Advisory Board

We established the Advisory Board to engage with a diverse range of stakeholders, including industry and customer representatives, to explore the challenges resulting from the uncertain future role of gas networks. The Advisory Board functioned as a source of advice to collaborate, strengthen, and shape our customer engagement approach to inform the development of our 2025 Plan, while maintaining a long-term view.

The Advisory Board was independently chaired by Rosemary Sinclair AM. We also engaged KPMG to support the facilitation of the Advisory Board workshops, which included advice on the provision of best practice stakeholder engagement techniques and facilitating the sessions to enable contribution from all members.

Together with the Advisory Board, we explored a range of initiatives that we could implement over the 2025-30 period to respond to the challenges resulting from the uncertain future role of gas networks and best position JGN for the energy transition. The four plausible future scenarios designed by the Expert Panel were used by the Advisory Board to test and filter the initiatives for further engagement with our customers.

Our engagement with the Advisory Board moved through a spectrum of engagement, including co-design during the initial sessions, through to inform and consult during a number of deep dive sessions, and involve and collaborate in the later sessions including a deliberative day, as shown in Figure 2.7.

Figure 2.7: Advisory Board objectives and series overview

Source: Adapted from KPMG, *Advisory Board Series Outputs Report*, May 2023, page 6 (*JGN – KPMG – Att 2.4 – Advisory Board Report*)

The Advisory Board assessed the initiatives against a Statement of Objectives, which it co-designed with us. The assessment used modelling techniques to consider different initiatives over three-time horizons, showing indicative impacts for each initiative over the short term (2025-30), medium term (over 2030-40) and out to 2050.

The Advisory Board's Statement of Objectives

In the context of an accelerating energy transition driven by community expectations and government emission reduction policies, Jemena commits to being a trusted partner, delivering safe gas connection and transport services and meeting consumer and community expectations for:

1. access to reliable and resilient services
2. stability, affordability and equity in prices
3. a decarbonised energy supply
4. fair returns and risk sharing on investments made by consumers and Jemena.

With reference to the Statement of Objectives, the Advisory Board was asked to assess the following initiatives:

1. Changing our approach to asset management in light of the uncertainty about the future of our network; specifically, replacing assets at a slower pace instead of continuing to maintain and replace assets at the current pace.
2. Changing asset size expectations, considering whether our network would stop growing at some point in the future (by stopping new customer connections, or by shutting down parts of the network), or whether we should assume that our network continues to grow.
3. Accelerating investments in our network to accommodate 10% hydrogen instead of continuing our current (slower) approach to transition.
4. Advocating for and supporting renewable gas instead of taking a passive approach.
5. Implementing a green gas policy.
6. Increasing capital contributions for those wanting to connect to our network.
7. Stopping new gas connections to stop the growth of our network.
8. Shortening asset lives of new assets instead of maintaining current lives to speed up the recovery of our investments.
9. Front-ending some depreciation instead of maintaining current asset live profiles.
10. Seeking compensation for asset recovery risk.

In exploring the initiatives with the Advisory Board we held a series of workshops, commencing October 2022 through to April 2023. Throughout the workshop series, flexibility and adaptability were key engagement principles. We committed to work with the Advisory Board to design the agendas and flex the approach and schedule depending on the level of detail required when deep diving on the initiatives.

During the workshop sessions, the Advisory Board debated and filtered the initiatives to consider which perform best across all plausible future scenarios provided by the Expert Panel. From these deliberations the Advisory Board advised us to engage with the Customer Forum on a subset of the initiatives, as summarised in Table 2.1.

Table 2.1: Initiatives considered by the Advisory Board and recommended deliberative outputs

No.	Initiative	Description	Recommended deliberation outputs for Customer Forum
1	Changing our approach to asset management	Specifically, replacing assets at a slower pace instead of continuing to maintain and replace assets at the current pace.	Take forward for engagement at Customer Forums.
2	Changing asset size expectations	Considering how big our asset base might be in the future—whether the network would stop growing at some point (by stopping new customer connections), or whether we should assume that our network continues to grow, with an increasing customer base. This initiative also considered whether parts of the network might be 'shut down' at some point in the future (for example, at locations where it is not cost effective to transition the network to renewable gas).	Do not take forward to engagement as the initiative would require government or policy change.
3	Accelerate to 10% hydrogen capability instead of continuing new and replacement asset transition	Exploring the pace of hydrogen network preparation and readiness. This included choice of investment materials and components for new and replacement assets (for example meters, and pipe materials).	Take forward for engagement with language aligned to informing and educating.
4	Advocate for and support renewable gas instead of a passive renewable gas approach	Discussion focused on potentially doing more to improve the viability of renewable gas production and demand, focusing on biomethane in the short-term, with two options: – Market match making between producers and customers, and publishing market information – Supporting renewable connections: building connections between renewable gas producers and the gas network and supporting customers that may be heavily reliant on gas and find it challenging to move to other fuel sources.	Take forward for engagement with specific customer groups. Focus on biomethane in the near term and consider the use of different language aligned to informing and educating on hydrogen.
5	Green gas policy	This includes policy support for a renewable gas target and the renewable gas certification pilot.	Do not take forward to engagement as the initiative would require rule or legislative change.
6	Increase capital contributions	Changing JGN's connections policy to reduce the number of free connections offered, so that more customers will be required to make a contribution to the cost of connecting them to our network.	Take forward for engagement at Customer Forums.
7	Make connections contestable	Allowing builders to construct new connections to JGN's network and recover costs directly from customers. The builders would then gift assets back to JGN (a similar approach to that adopted by electricity networks).	Do not take forward to engagement as the initiative was not quantified and would have a similar impact to increasing capital contributions.
8	Stop new gas connections	This involves stopping new gas connections to our network altogether.	Do not take forward to engagement as the initiative would require rule or legislative change.

No.	Initiative	Description	Recommended deliberation outputs for Customer Forum
9	Shorten asset lives of new assets instead of maintaining current lives	Shorten asset lives on new assets to reflect the potential use of Jemena's pipelines in the future.	Take forward for engagement at Customer Forums. Potential to package with initiative 10 for engagement.
10	Front-end some depreciation	Instead of maintaining current asset life profiles, looking at accelerated depreciation of existing assets to reduce Jemena's capital recovery risk and reduce impact on future generations. This initiative achieves the same outcomes as initiative 9, by speeding up te recovery of capital investments.	Take forward for engagement at Customer Forums. Potential to package with option 9 for engagement.
11	Compensate recovery risk	Exploring the potential of seeking changes to the regulatory framework to compensate for capital recovery risk.	Do not take forward to engagement as the initiative would require rule or legislative change.

> "Trust in the process. And this is a good process."
>
> **Advisory Board Member**

> "What's happening in the energy sector right now is massive change. It's upheaval at every level (…) This is a really important discussion for Jemena (…) and preferences and choices of consumers need to be part of this decision making."
>
> **Advisory Board Member**

At the time of publishing our Draft 2025 Plan we held a 'closing the loop' session with the Advisory Board and some members of the Expert Panel[3]. The objectives for this session were to reconvene key stakeholders who were involved from early 2022 through to mid-2023 to:

- Share an overview of the engagement activities conducted, including customer preferences and recommendations from the Customer Forum
- Provide an overview of the AER's Early Signal Pathway scorecard and how we would address the AER's feedback
- Preview the Draft 2025 Plan ahead of public release, highlighting how recommendations from customers shaped our plans
- Allow the Advisory Board to ask questions on the Draft 2025 Plan and to capture their reflections on the overall process and outcomes.

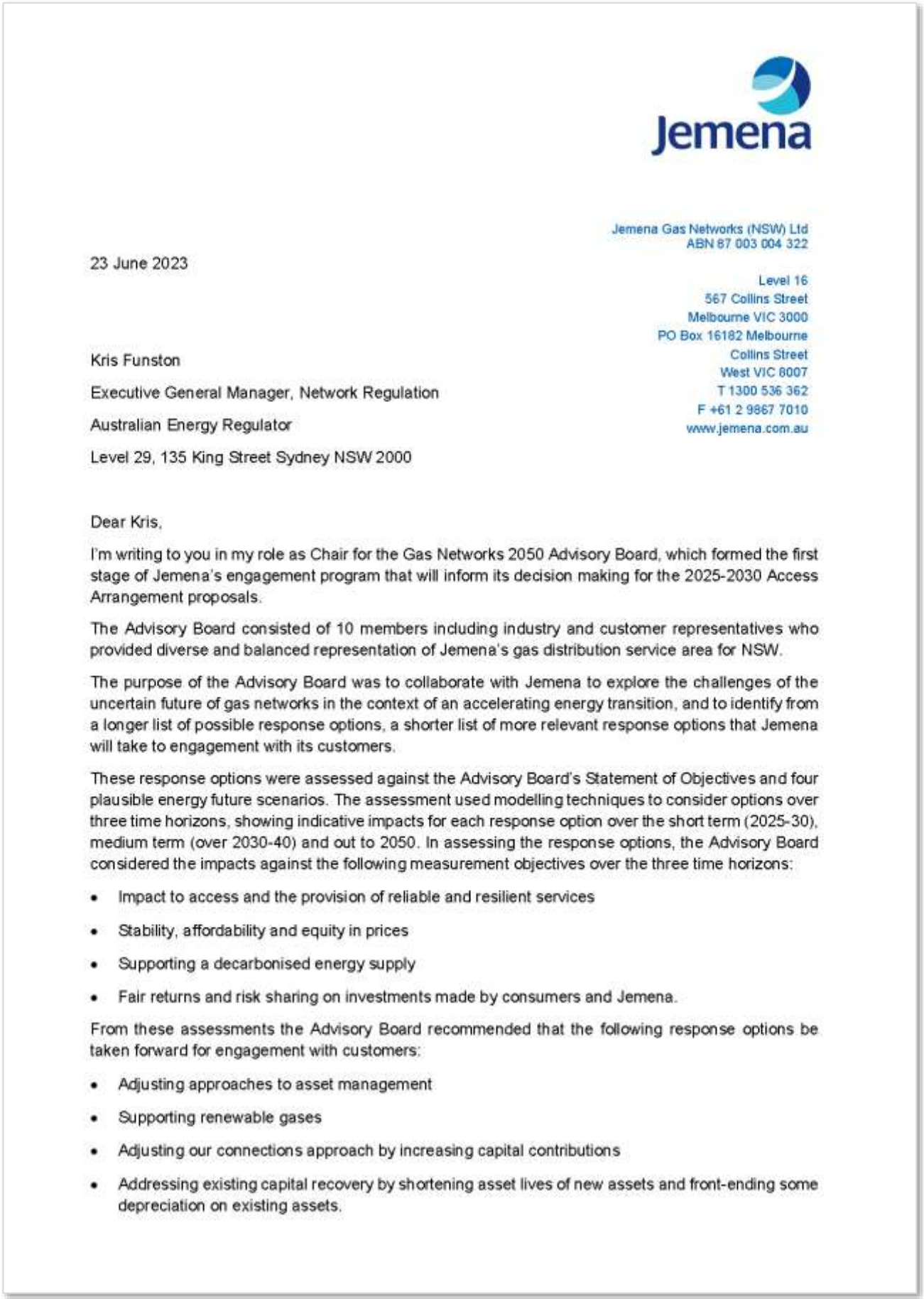
Members provided reflections on the Draft 2025 Plan. This included a desire to see a richer narrative relating to customer engagement and how we have approached conflicting customer preferences which we discuss in Chapter 3. There was also a desire to better understand the customer recommendation on accelerated depreciation, with some members suggesting that this be further socialised with customers, including a zero option.

As part of the 'closing the loop' session, the Advisory Board shared reflections and observations on what worked well and what we should consider doing differently next time. Advisory Board members acknowledged the complex subject matter and appreciated the diversity of stakeholders involved, the professionalism with which Jemena undertook the process, and the transparency of the process. With respect to what could be done differently, some suggested that the Advisory Board could have played an ongoing role, including participating in the engagement with customers. In addition, it was noted that Jemena might have supported its face-to-face engagement with quantitative research.

Overall, the Advisory Board valued the process and acknowledged the groundwork in supporting the customer engagement to inform our 2025 Plan proposals which is demonstrated in the Advisory Board's Letter of Support (Figure 2.8) which reflects the workshop series up to Session 8 – engaging with customers - as depicted in Figure 2.8.

3 Refer to *JGN – KPMG – Att 2.7 Reconvened Advisory Board and Expert Panel Report*.

Figure 2.8: Advisory Board Letter of Support



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23 June 2023

Kris Funston

Executive General Manager, Network Regulation

Australian Energy Regulator

Level 29, 135 King Street Sydney NSW 2000

Dear Kris,

I'm writing to you in my role as Chair for the Gas Networks 2050 Advisory Board, which formed the first stage of Jemena's engagement program that will inform its decision making for the 2025-2030 Access Arrangement proposals.

The Advisory Board consisted of 10 members including industry and customer representatives who provided diverse and balanced representation of Jemena's gas distribution service area for NSW.

The purpose of the Advisory Board was to collaborate with Jemena to explore the challenges of the uncertain future of gas networks in the context of an accelerating energy transition, and to identify from a longer list of possible response options, a shorter list of more relevant response options that Jemena will take to engagement with its customers.

These response options were assessed against the Advisory Board's Statement of Objectives and four plausible energy future scenarios. The assessment used modelling techniques to consider options over three time horizons, showing indicative impacts for each response option over the short term (2025-30), medium term (over 2030-40) and out to 2050. In assessing the response options, the Advisory Board considered the impacts against the following measurement objectives over the three time horizons:

- Impact to access and the provision of reliable and resilient services
- Stability, affordability and equity in prices
- Supporting a decarbonised energy supply
- Fair returns and risk sharing on investments made by consumers and Jemena.

From these assessments the Advisory Board recommended that the following response options be taken forward for engagement with customers:

- Adjusting approaches to asset management
- Supporting renewable gases
- Adjusting our connections approach by increasing capital contributions
- Addressing existing capital recovery by shortening asset lives of new assets and front-ending some depreciation on existing assets.

In reaching these recommendations, a sound and robust process was run to fulfil the purpose of the Advisory Board to identify response options and advise Jemena on how to engage with its customers on these options in its formal program of engagement.

Early in the process we emphasised the importance of authentic and transparent engagement and ensuring every voice in the room could be heard. To ensure the Advisory Board could act as a 'critical friend' to Jemena and achieve its expectations for effective engagement, the Advisory Boardwas supported with facilitation by KPMG throughout 10 sessions (including 7 main sessions and 3 opt-in sessions) across seven months from October 2022 to April 2023.

The Advisory Board, were pleased to note Jemena provided information in a timely and meaningful way supporting members to think critically, collaboratively and carefully about the response options and enabling them to make informed recommendations.

The process enabled members to think deeply and collaborate on the future of the gas networks and impacts on customers against the backdrop of energy developments on a national and global level. Discussion included developments in policies and technologies in response to global concerns associated to energy security, accelerating the transition to cleaner energy sources, consideration of what Jemena could do within its remit, while thinking about customer affordability and inter-generational equity.

Having a critical conversation about complex matters with the Advisory Board has been a personal career highlight, especially in the context of a pivot point in the energy transition which will have broader implications for the community and future regulatory reviews.

The approach of the Advisory Board to these critical conversations is another step forward in more sophisticated engagement of consumers in the energy sector and I hope will help inform future policy and regulatory reviews.

On behalf of the Advisory Board, I am pleased to present this letter of support for the Advisory Board Gas Networks 2050 process and acknowledge the valuable groundwork it has achieved to support consumer engagement in Jemena's 2025-2030 Access Arrangement.

Yours sincerely,

Rosemary Sinclair AM

Chairperson

Advisory Board

Gas Networks 2050

2

2.4.3 Customer Forum

We established the Customer Forum in late 2022. It was designed to enable deliberative engagement to consider the initiatives recommended by the Advisory Board. Deliberative engagement puts the community affected by a decision at the heart of the decision-making process, reaching a minimum of 'collaborate' on the IAP2 spectrum.

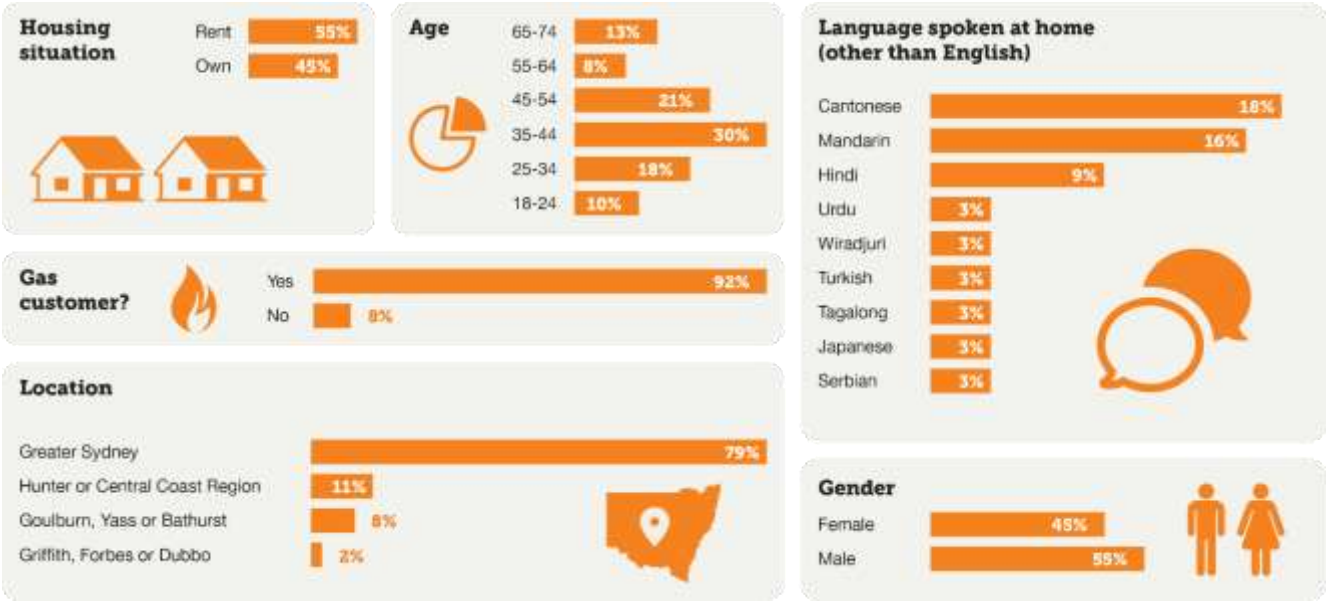
Our deliberative approach to engagement entailed the following characteristics:

- A randomly selected and representative group of participants.
- A clear remit that speaks to the uncertainty surrounding the future role of gas networks in the Australian energy landscape.
- The provision of detailed information which included the outputs from the Expert Panel and Advisory Board in addition to access to independent industry experts to help participants understand the issues associated with the remit and develop responses.
- Time and support to deeply consider the information, share and exchange ideas, weigh up issues and options and come to a consensus on recommendations.
- A commitment from us to implement recommendations to the maximum extent possible which the 2025 Plan sets out to do.

The Customer Forum consisted of over 40 participants and represented current and potential future energy customers. To encourage a range of perspectives and creation of a 'mini customer base' the recruitment process considered (but was not limited to) gender, age, geography, housing situation and language spoken at home. Approximately one quarter of Customer Forum participants also participated in the customer engagement process for our 2020 Plan.

The demographic details of the Customer Forum participants are shown in Figure 2.9.

Figure 2.9: Customer Forum Demographics



The Customer Forum was tasked with responding to the following remit.

Figure 2.10: Customer Forum remit

> "Australia is transitioning to net zero carbon emissions by 2050. We see a role for Jemena Gas Networks in the transition and beyond 2050. However, there is more and more uncertainty in the energy sector, and cost of living pressures and energy prices are rising. We want to adapt and take action now so we can create our future, but we need the support of customers to do this. Can we do this in a way that is fair for customers over the next five years, and beyond, whilst managing uncertainty and remaining affordable in the future?"

To align with our deliberative approach to engagement, we designed our Customer Forum processes to ensure participants had the time and support to deeply consider the information put forward to them, share and exchange ideas, weigh up issues and options and come to a consensus on recommendations.

A deliberative process was chosen to ensure our engagement program offered Customer Forum participants the best opportunity to engage diverse end customers in addressing the complexity of the challenges presented by the energy transition. It offered a chance for participants to develop a sound appreciation of the challenging contexts around future gas demand and build their capability to advise on the careful balances needed for us to transition to net zero, whilst balancing customer expectations and remaining a viable network business.

The process involved the Customer Forum meeting over a series of eight online and in-person sessions to understand 'what was hard' about transitioning the gas network to meet net zero from both our customers' and Jemena's perspectives[4].

Customers heard from external experts of their choosing, about the wider industry context and challenges, considered regulatory responses and initiatives recommended by the Advisory Board, and developed and finalised their recommendations to us.

To ensure customers did not just hear from Jemena voices, our engagement process included a range of guest experts, and people with alternative views (see Table 2.2 for detail).

Table 2.2: Our customers have heard from a variety of voices.

Forum and description	Theme	Guest, organisation and topic
Forum one In forum one, participants watched a number of video recordings and video messages:	Uncertainty the transition creates	Shane Rattenbury - Attorney General of the ACT (excerpt from media interview on the banning of new gas connections in the ACT)
		Gavin Dufty - Executive Manager, Policy and Research, St Vincent de Paul (on the implications for vulnerable customers)
	Exploring customer expectations	Kristen Pellew - Head of Customer and Community, Australian Gas Infrastructure Group (What other distribution businesses have heard)
		Peta Ashworth OAM - Director, Curtin Institute for Energy Transition (speaking about insights gleaned through Citizen Jury processes it has held)
		Brian Spak - Director, Energy System Transition at Energy Consumers Australia (on customer insights gleaned through survey results)
Forum Three: In the second Customer Forum, participants reviewed a long list of 17 external guests, and were tasked with selecting a prioritised list of speakers that they wished to hear from at Customer Forum three. Selected speakers are listed on the right.	Fairness and the energy transition	Gavin Dufty - Executive Manager, Policy and Research, St Vincent de Paul
		Peta Ashworth OAM - Director, Curtin Institute for Energy Transition
	The pathway to electrification	Sophia Vincent - Director Energy Consumer Branch, NSW Treasury
	The role of hydrogen	David Norman - Chief Executive Officer, Future Fuels CRC
	The role of biomethane	Shahana McKenzie - Chief Executive Officer, Bioenergy Australia
		Michael Davis - Managing Director, Optimal Renewable Gas
	The Customer Forum participants requested an additional speaker from an environmental group	David Strang – Lighter Footprints agreed to attend to represent this view.

4 Refer to page 6 of *JGN – BD Infrastructure – Att 2.2 – Customer forum engagement report* for an overview of the Customer Forum and Key Voices engagement program.

Forum and description	Theme	Guest, organisation and topic
Forum Six: Returning external guest experts in the sixth Customer Forum are listed on the right.	Different energy futures	Gavin Dufty - Executive Manager Policy and Research, St Vincent De Paul (providing the point of view of the agnostic)
		David Strang - Lighter Footprints (an electrification advocate)
		Mike Davis - Managing Director, Optimal Renewable Gas (a biomethane advocate)
Forum Eight: Speakers provided perspectives on accelerated depreciation from an economic, social and equity standpoint.	Accelerated Depreciation	Gavin Dufty - St Vincent de Paul
		Douglas McCloskey - Public Interest Advocacy Centre.
		Stephen Gray - University of Queensland, Director, Frontier Economics

Post the publication of our Draft 2025 Plan we held a recall session (Forum 8) with the Customer Forum and some of the key voices participants. The purpose of the session was to test whether the proposals outlined in the Draft 2025 Plan aligned with the Customer Forum's recommendations. Participants were also asked to vote on the extent to which we had got the balance right in the Draft 2025 Plan. Overall, there was a positive response from Customer Forum participants which we discuss in Chapter 3.

> "The fact that they have pulled together so many experts for the group to hear from and engage with – even though some of the views may not necessarily align with their own. Incredibly encouraging and open-minded!"
>
> **Customer Forum Feedback**

2.4.4 The key voices

We established a Youth Steering Group and a Culturally and Linguistically Diverse (CALD) Steering Group in early 2023. The role of these groups was to provide the Customer Forum with their unique values and perspectives on gas use, the future of gas, and the energy transition to net zero, and then to review and challenge the Customer Forum's initial recommendations from those unique perspectives.[5]

CALD Steering Group

We engaged the Ethnic Communities Council NSW (ECC NSW) before creating the CALD Steering Group to help us determine the best way to target the CALD community in this engagement process. The ECC NSW reached out to its networks to conduct interviews in Tamil, Arabic, Vietnamese and Nepali by using its educators as proxy community members to support the engagement process.

The process commenced by educators interviewing a small group of people from each of the four language groups to understand values and priorities around gas and the energy transition. This was followed by three workshops to review the outcomes from the interviews and build profiles or 'personas' that reflected CALD needs and values in terms of gas. The personas[6] were communicated back to the Customer Forum to inform deliberations and be able to make recommendations on behalf of CALD customers.

In the final CALD workshop, we tested the initial recommendations made by the Customer Forum to see if they adequately responded to their needs and values. CALD participants were also invited to join Customer Forum 8, the recall session, to understand how we acted on customer expectations.

5 Refer to *JGN – BD Infrastructure – Att 2.2 – Customer forum engagement report*; page 14 for an in-depth overview of the Key Voices engagement program.

6 Ibid, page 16-17 for Youth and CALD personas which were communicated to the Customer Forum to inform deliberations.

Youth Steering Group

The Youth Steering Group included people between the ages of 18 and 25 residing within our network. Members did not need to be gas customers as the purpose of the group was to understand their perspectives as possible future customers, or those that would inherit the impacts of the decisions we make today.

The group was recruited via an expression of interest process, through three channels: Youth Action, LinkedIn and a youth network called Ripple.

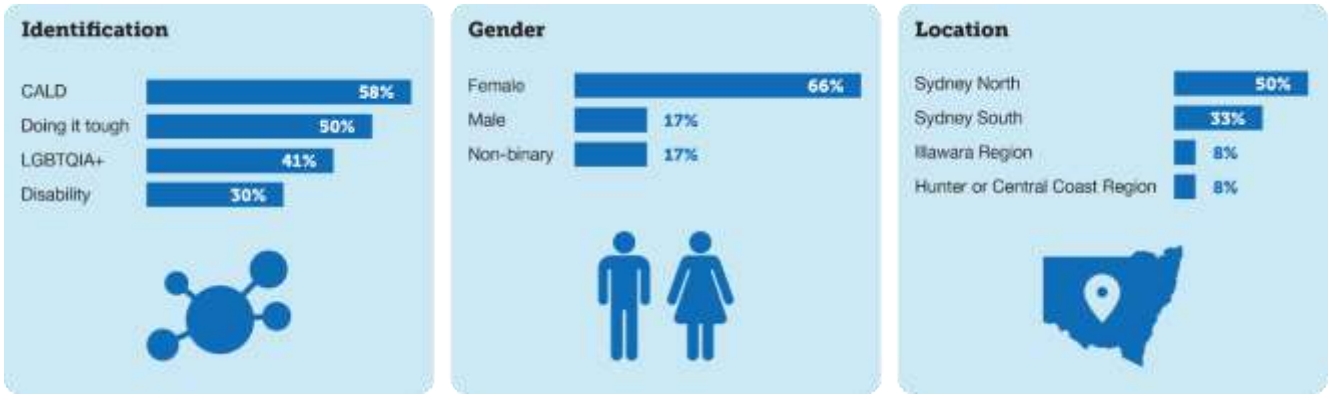
The Youth engagement process commenced with pre attendance interviews to learn about values and priorities around gas and the energy transition from young people perspectives. Three engagement workshops followed to review the outcomes of the interviews and explore customer values and attitudes developed by the Customer Forum against those held by young people. Personas were developed and communicated back to the Customer Forum to consider young people's perspectives during their deliberations.

As part of the engagement process the Youth Group tested the initial recommendations made by the Customer Forum to see if they adequately respond to the needs of young people. Youth Group participants also attended the Customer Forum 8 recall session to understand and test how well our 2025 Plan proposals aligned to customer expectations.

Five participants took part in the first Youth Steering Group workshop, 12 in the second workshop, and eight in the third workshop. This varied attendance reflected the struggle participants felt in balancing work and study with their participation.

The demographic profile from both key voice groups who participated across the process is outlined in Figure 2.11.

Figure 2.11: Key voices group profile



2.4.5 Retailers

Commencing in October 2022, we have undertaken an extensive engagement program with retailers to understand their preferences on the services and initiatives we will provide over the 2025 Plan period, and the way we propose to charge for the provision of our services.[7]

The first stage of the retailer engagement process was designed to inform the development on our Reference Service Proposal[8] (RSP) which sets out our proposed reference services for retailers and self-contracting users for the 2025-30 period.

Stage one of the retailer engagement program comprised of three phases:

1. An initial information gathering exercise conducted in October 2022, where we circulated a questionnaire to all self-contracting users, some large customers and retailers asking whether our current services are likely to meet their future needs and their preferences for consulting on our RSP.
2. Consultation on the Draft RSP, where we consulted with retailers, self-contracting users and some large customers over February to April 2023.
3. The publication of a consultation Draft RSP seeking customer and stakeholder feedback to ensure that our proposed reference services will meet their future needs.

7 Refer to *JGN – Att 3.2 – Small business Retailer Large User engagement report* for an overview of the Retailer engagement process.

8 The NGR require us to submit a RSP to the AER 12 months prior to the submission of our Access Arrangement proposal. The RSP must list all the pipeline services we can reasonably offer and specify at least one service as a reference service.

See Chapter 9 for more information on our reference services.

Stage two of the retailer engagement program entailed a series of Retailer Forums with representation from up to 13 gas retailers across the forum series to consider a range of aspects of the Draft 2025 Plan including:

- Key initiatives that act on the uncertainty surrounding the future role of our gas network including accelerated depreciation, charging for new connections and renewable gas connections.
- Digital metering which was a key topic of interest raised by retailers.
- Tariff reform and form of price control for the 2025-30 period.

At Retailer Forum 6 we held a 'closing the loop' session to provide an overview of how retailer and customer feedback had been incorporated into the Draft 2025 Plan and we asked retailers for their views and reflections to understand how well we acted on customer expectations.

We also hosted one-on-one sessions with retailers to allow for more in-depth discussions on our Reference Service Agreement which we discuss in Chapter 9.

2.4.6 Large customers

Engagement with our large customers commenced in late 2022, when we conducted a survey to understand how they wanted to be engaged as part of the RSP process and the broader price reset engagement process. The survey also explored what topics were of interest to them, relevant to the provision of gas network services.

The feedback we obtained from the survey informed our engagement program for large customers which involved hosting an online forum in March 2023 followed by a Large Customer Forum in August 2023.[9]

Following the publication of our Draft 2025 Plan we hosted Large Customer Forum 3 to provide an overview of our proposals and seek feedback.

In addition to the Large Customer Forum, we offered opt-in one-on-one sessions with those customers wanting more information. We also engaged with our largest customers via a survey to understand their demand requirements over the 2025-30 period and to get insights into the role they could see renewable gas playing in their decarbonisation pathway.

2.4.7 Small businesses

To gain a broad perspective of our small business customers we spoke to a representative from Business NSW (also a JGN Customer Council member) to determine the best way to target this customer group. After discussions, we understood that affordability and pricing are the most important themes for this group, plus understanding what the energy transition looks like from a business perspective. Business NSW also provided advice on how best to engage with small business customers in terms of approach and scheduling of engagement activities.

Based on Business NSW guidance, we established two small business customer focus groups to understand their unique perspectives around gas use, the future of gas, the energy transition to net zero and to consider the initiatives we explored with the Customer Forum.[10]

Focus group participants represented the interests of a diverse range of small business customers including restaurants, takeaway food shops, food manufacturers, information technology, accommodation, health, and other businesses considered high consumers of gas compared to residential customers. As part of the recruitment process, we ensured that participants were the main decision-makers for energy use in their business, with their annual bills ranging between $5k to $100k.

We hosted four focus group sessions in total with 13 small businesses. Two online sessions were held for each focus group with the first session designed to provide an overview of the challenges we face surrounding the uncertain future role of gas networks and the actions we can take in the form of the initiatives as explored by the Customer Forum. In the second session we deep dived on the initiatives, which included our approach to asset management, investing in renewable gas connections and accelerated depreciation. Participants were then asked to vote on the initiatives to understand their preferences and expectations.

Following the first stage of engagement with small businesses we merged the two focus groups into one to test the form of price control and tariff reform options that we discuss in Chapter 10.

Following the publication of our Draft 2025 Plan we hosted another small business focus group to provide an overview of our proposal and test their views on how well it aligned with feedback we received from the small business customer engagement process.

9 Refer to *JGN – Att 3.2 – Small business Retailer Large User engagement report* for an overview of the large customer engagement process.

10 Ibid.

2.4.8 Customer Council

Established in 2013, our Customer Council has fostered robust partnerships with industry stakeholders, influential customers, and advocates. Through this group, we maintain a continuous channel for hearing the customer perspective on our day-to-day operations. Our Customer Council members include customer advocates, large users and other stakeholders such as the Energy and Water Ombudsman. Five Advisory Board members also sit on the Customer Council allowing for fruitful cross-over between these groups.

Throughout the formulation of our 2025 Plan, we maintained a consistent dialogue with the Customer Council, actively seeking their input and guidance at each stage of our engagement process, including seeking one-on-ones with members of the Customer Council to provide advice on engaging with particular groups, such as small businesses and developers.

2.4.9 Customer Tariff Forum

To inform our tariff structures and form of price control proposals for our 2025 Plan we established a Customer Tariff Forum. To help design the tariff engagement program we consulted with the Advisory Board (via an opt-in session) to consider how we should engage on the tariff options and form of price control. The Customer Tariff Forum adopted elements of deliberative engagement by providing participants with time, information, access to independent expertise (we refer to as a 'Brains Trust'), and a high level of influence over the outcome. In testing the tariff and form of price control options, the Customer Tariff Forum was tasked with advising us on the following remit:

> "Net zero 2050 is causing uncertainty and change for the energy sector. Jemena and its regulator are reviewing how gas is priced for customers. Different pricing methods will affect how much customers pay, in different ways, with some winners and some losers. Jemena wants you to answer: Which type of pricing method is in the best interest of customers?"

The Customer Tariff Forum met in three stages and explored key concepts including risk and fairness that are important issues for customers to consider when engaging on tariff options and form of price control.[11]

Stage one comprised 29 residential customers who were originally selected by an external market research company to ensure a fair representation of our customers with a range of considerations made during the recruitment process including, but not limited to, gender, age, geography, housing tenure, and language spoken at home.

Stage 1 comprised of three workshops where participants were educated on different forms of price controls and we tested customers initial preferences on a weighted average price cap versus revenue cap and our current approach to pricing which included an overview of the declining block structure and categorisation of customers.

Because of the complex nature of tariffs and form of price control mechanism, members of the Advisory Board and Expert Panel, complemented with external guest speakers, were asked to play a role as the 'Brains Trust'. The 'Brains Trust' functioned as an independent expert to support Customer Tariff Forum participants, providing information and assisting in group deliberations by offering their views on our tariff options and form of price control we put forward to customers. One workshop during Stage 1 was dedicated to discussing tariffs and form of price control issues with the 'Brains Trust'.

The 'Brains Trust' in Stage 1 consisted of:

- Douglas McCloskey - Public Interest Advocacy Centre (PIAC) and Advisory Board member
- Victoria Jordan - Customer and Advisory Board Member
- Zubin Meher-Homji - Economist and Founder of Dynamic Analysis
- Dr Matt Pearce - National Industry Leader, Energy, Mining & Property, KPMG

The 'Brains' Trust in Stage 2 comprised of:

- Gavin Dufty - General Manager of Policy and Research at St Vincent de Paul Society and Advisory Board member - speaking on equity and fairness
- Zubin Meher-Homji - Founder and Director of Dynamic Analysis - speaking on gas pricing
- Matthew Warren - Principal at Boardroom Energy and also Expert Panel member - speaking on the context of the net zero energy transition
- Jordan Rigby - Regulatory Manager at Red Energy - speaking from a retailer perspective.

11 Refer to *JGN – BD Infrastructure – Att 3.1 Tariffs Consultation Report* for an overview of the Tariff Forum engagement process.

Following stage 1, 16 Customer Tariff Forum participants were then selected to take part in stages 2 and 3. The 16 participants were selected on the basis of their understanding of, and interest in, the subject matter which was assessed via their completion of homework tasks by our engagement partner BD infrastructure.

In response to feedback garnered from stage 1, we presented participants a range of tariff variation mechanisms that combined elements of a price and revenue cap in addition to tariff restructure proposals. These options were explored in depth in discussion with us and the 'Brains Trust' in Stage 2.

In Stage 3, the participants delved deeper into the hybrid form of tariff variation mechanism where they considered various combinations of sharing ratios and threshold levels. Indicative bill impacts for these combinations under volume performance scenarios were also presented to help participants deepen their understanding of what 'taking more risk' might actually mean. We also revisited our tariff structure proposals as outlined in the Draft 2025 Plan to test their alignment with the Customer Tariff Forum's expectations.

The outcomes from the Customer Tariff Forum are discussed in Chapter 10, where we outline our tariff proposals and tariff variation mechanism.

2.4.10 Evaluation of our engagement program

The newDemocracy Foundation (newDemocracy) was appointed by BD Infrastructure with the support of JGN to independently evaluate the Customer Forum process, which included an action-learning approach to our engagement program where regular feedback was provided to help improve the Customer Forum process.

newDemocracy focuses on the design, oversight, and research of deliberative engagement processes, like the Customer Forum, to strive for more trusted decisions informed through deliberative processes.

Internationally, newDemocracy offers advice to a range of national governments and parliaments and is a member of the OECD Innovative Citizen Participation Network (where it has contributed to the development of the OECD Evaluation Guidelines for Representative Deliberative Processes). newDemocracy has extensive experience reviewing stakeholder and customer engagement programs and activities for regulated businesses and has worked with and supported many organisations around Australia with similar advice on the design and delivery of deliberative engagement projects.

When evaluating the Customer Forum process, newDemocracy based its evaluation against the AER's Better Resets Handbook expectations of customer engagement which are principle-based and focus on the following areas:

- Nature of engagement
- Breadth and depth of engagement
- Clearly evidenced impact of engagement.

newDemocracy considered the Customer Forum was well run and allowed participants the opportunity to influence our 2025 Plan. The newDemoncracy evaluation acknowledged our commitment to customers that their work would influence the 2025 Plan to the maximum extent possible and that this commitment was fulfilled[12].

newDemocracy's evaluation noted the following highlights from the Customer Forum process:

- The early commencement of engagement
- The use of deliberative engagement within the framework of the regulatory environment—giving customers a much more substantive role than other methods
- Commitment to using engagement outcomes to develop the 2025 Plan
- Fulfilling the commitment made to customers
- The use of key voices in complementing the customer forum
- The use of random selection to recruit a representative mix of the community
- Initiating independent and appropriate evaluation of the process.

12 *JGN – newDemocracy – Att 2.8 Independent evaluation report*; page 5.

Although newDemocracy considered that the process was well run it did recommend some points of improvement for future deliberations including the utilisation of 'shallower forms' of engagement that could include the use of surveys to garner inputs from a broader number of customers and consider how the sequence of engagement is planned. For example, the deliberative process could have the Customer Forum providing feedback on their interests in collaboration with a body like the Advisory Board.

Overall, newDemocracy's evaluation concluded that the Customer Forum process was strong and demonstrated good practice, meeting the requirements of the Better Resets Handbook as depicted by the 'green' rating in its report.[13]

> It is worth noting that while some research and engagement firms describe their practices as "deliberative" they often fall significantly below established best practice. For example, 50+ self-selected people meeting for one evening is not what would be described as "deliberative". For this reason, it's commendable that JGN independently sought evaluation of its work and is seeking to push boundaries in the regulatory space through an action learning approach.[14]

newDemocracy's evaluation gives confidence that when preparing the 2025 Plan we have meaningfully engaged with customers and we understand their concerns and expectations to ensure our proposals and initiatives are prudent and algin with the outcomes valued by our customers which we discuss throughout our 2025 Plan and its associated attachments.

13 *JGN – newDemocracy – Att 2.8 Independent evaluation report*; page 6.

14 Ibid; page 5.

3. What our customers have told us

Highlights

- Customers have told us that they value affordability, fairness, the environment, choice, safety and reliability which have played an important role in shaping our 2025 Plan.
- Customers understand that we must act now to look after future generations, taking a balanced and equitable approach.
- Customers have expressed support for investments in renewable gas connections, accelerating the depreciation of our assets, changing our approach to asset management planning, reducing our greenhouse emissions and changing our connections policy.
- To test the Draft 2025 Plan's alignment with the Customer Forum expectations we asked participants whether we had honoured our commitment to act on their recommendations, and whether there were any areas where they felt their direction had not been followed. Overall participants responded in a positive manner and felt we had honoured our commitment to them with **100% of participants** believing we got the balance right in the Draft 2025 Plan.
- Following the Customer Forum process we appointed Sagacity Research (Sagacity) and Jackie Duke Insights (JD Insights) to conduct independent in-depth interviews and surveys of the Customer Forum participants to test whether customers understood the topics they deliberated on to make informed recommendations that have influenced the 2025 Plan.
- The research by Sagacity and JD Insights has confirmed that customers trusted the process, felt valued and were adequately educated to make informed recommendations which gives confidence that our proposals and initiatives algin with customers' values and expectations.

3.1 Engagement outcomes

This section details the outcomes of our engagement from each customer group, and how their feedback has shaped our 2025 Plan. We highlight instances where our customers had differing or conflicting views and how we took this into account in formulating our 2025 Plan.

Acknowledging that pleasing every customer group at all times is not possible, our focus remains on carefully navigating a pathway forward that serves the long-term interests of both our current and future customers in a balanced manner as guided by the Customer Forum recommendations.

Tasking the Customer Forum to vote on the package of initiatives and reach consensus has ensured that the proposals put forward in the 2025 Plan represent the diverse perspectives of our customers in a balanced and fair manner. We have also taken on board the feedback and views from large customers, small businesses, and retailers received throughout the engagement which have largely aligned with community representatives - via the Customer Forum recommendations.

3.1.1 Customer Forum outcomes

The Customer Forum made six recommendations which we show in Figure 3.1, reproduced exactly as they wrote them. We have included references to where in the 2025 Plan you can see and understand how their recommendations align to our proposals. The six recommendations from customers cover the following initiatives:

- Renewable gas strategy for supporting customers
- Renewable gas reliability and safety
- Renewable gas advocacy and communication
- Affordability
- Vulnerability
- Regulatory response options.

The Customer Forum recommendations demonstrate that participants understood the task of responding to the remit discussed in Chapter 2, and the challenges presented by the uncertain future for gas networks. There was a clear desire by customers to have the option to continue using gas into the future (i.e. they expressed a desire for diversity of energy sources), and a reasonable understanding of the trade-offs involved in ensuring that could happen. These sentiments were shared across all the customer groups we engaged.

Figure 3.1: Customer Forum recommendations

Jemena,
We, Jemena Gas Network Customer Forum, have met several times over the last ten months both in person and online to discuss the future of Jemena, the gas power industry, and the appropriate regulatory response for the next five-year period. We have heard from a diverse range of speakers both within and outside of Jemena and have learned a great deal about relevant and industry topics new to many of us. Based on our understanding of the gas industry and problems of an uncertain energy transition, and the input of the youth forum and culturally and linguistically diverse communities, through an ongoing democratic and inclusive listening/discussion process we have come together in agreement of regulatory responses to present these final recommendations.

The recommendation (we want Jemena to...)	Context	Why this is important	Our response
Recommendation 1 - renewable gas strategy for supporting customers. • Support the best cost-effective strategy & environmentally friendly pathway moving forward. • Consider how costs are distributed around the customer base. • We are in favour of equitable distribution.	• This is in the best interest of current and future generations of customers & society as a whole.	• Customers feel valued & respected in terms of their voices and opinions being heard and taken into account at all times. • We are supporting the best interest of future generations. • Financially viable for all customers regardless of circumstances. • Benefits include the positive impact on the environment while still supporting sustainability at the same time. • Hydrogen, biomethane and other emerging technologies are to be observed and considered and prepared for potential scale once the most attractive and accessible options are ready for the commercial and residential market through the Jemena infrastructure. • This is directed at biomethane and hydrogen when it becomes more readily available.	See section 3.1.9 balancing the diverse views of customers See section 5.3 Investing to connect renewable gas within our planned capital investments
Recommendation 2 - renewable gas reliability and safety • Invest in building a reliable renewable gas network while avoiding unnecessary redundancies (i.e., effective management & cost control). • To continue to invest and research in pilot studies and trials to properly study the safety of new/renewable gas networks (all aspects - from supplying, distribution, consumers, storage, etc.). • Benchmark and develop consensus and industry standards for reliability and safety relating to renewable gas networks. • Develop appropriate transparent internal policies and measures for the management of operational, environmental, and safety risks; involve relevant subject matter experts in these. • Ensure that after the energy transition, there will be no increases in fire and explosion risks.	• We know that major testing is being conducted on safety and reliability of the new renewable energy sources; results should be objectively evaluated and considered before decision making and implementation of network modifications. • We know that the chemical and safety characteristics of some of the renewable energy sources (e.g., hydrogen) increase the risks of fires and explosions - these all need to be considered for safe use, handling, and storage of the energy sources. • Focus on biomethane which only requires existing infrastructure. • Business continuity.	• To make sure the safety of the consumer and the network are in place, so all policies and procedures are followed. • To see the pragmatic aspect and check practicality (new technologies always have to be tested in the field) of the system modifications and adopted measures. • Fires and explosions and related injuries and deaths already occur with natural gas; to use a more risky energy source would require a great focus on proper risk mitigation and implementation strategies.	See chapter 5 our planned capital investments
Recommendation 3 – renewable gas advocacy and communication • Jemena needs to have a more public presence and speak up in the media. • Speak with the Federal and local government and councils about Renewable gas advocacy and planning for the future. • Educate all stakeholders to ultimately reduce the numbers of customers leaving gas over safety concerns.	• Without doing anything, there is inconsistent policies. • Some customers are concerned about the safety of using gas indoors, whereas it's been in use for centuries.	• The total reliance on one form of energy could be disastrous. • By following these recommendations, the public is reassured of the safety and reliability of gas. • Present to the public that Jemena believes safety is non-negotiable.	See chapter 4 responding to the energy transition

Figure 3.1: Customer Forum recommendations (continued)

The recommendation (we want Jemena to...)	Context	Why this is important	Our response
Recommendation 3 – renewable gas advocacy and communication (continued) • Recognising everyone's knowledge varies, so supply more information so there isn't any misinformation when educating everyone. • To communicate with their customers on the future of renewable gas with a personable approach, so that customers don't abandon the company. This could include cost comparison between electricity and gas. • Communicate that the option of bio-methane is an environmentally friendly solution.	• Banning gas is not speaking for the people and allowing choice. • The importance of educating the public on the different options of gas.	• By utilising the bio-methane, as an option, we are protecting the environment by having another renewable gas option. • For Jemena this means it's a more affordable option because they don't have to change the infrastructure. • By implementing these recommendations Jemena ensures fairness for vulnerable existing and new customers and for the company itself.	See chapter 4 responding to the energy transition
Recommendation 4 - Affordability • Ensure that any investment in the gas infrastructure that is necessary for the energy transition doesn't leave behind those customers who may be more sensitive to price rises. • Finding a balance between rising cost of living and retaining customer base • Undertake as many initiatives as possible to incentivise people to keep themselves a gas customer. • Subsidise connection costs for new customers to help increase new connections which in turn can help spread costs over a larger base and make it more affordable.	• People are struggling to pay their bills. Inflation will only make this worse. • Jemena needs to invest by increasing cost, but too much increase will lead to customers finding other solutions and leaving the gas network. • There will be a short term (five year) financial hit due to accelerated asset recovery in order to reduce the rate of bill increase in the future. • This is understood but means special care needs to be taken for those needing help with this increase.	• Society has a moral responsibility to make sure that energy sources are affordable - it's an essential service. • Certain people may have more of a cultural reliance on gas (e.g., cooking) and shouldn't be discriminated against.	See chapter 10 pricing for current and future generations See chapter 4 responding to the energy transition See chapter 7.3 on depreciation See section 5.3 connecting customers to our network
Recommendation 5 – vulnerability • Use their profits to help vulnerable customers and invest to make it fair for customers. At the same time support customers who are willing to share the costs in supporting vulnerable customers. • Support vulnerable customers to have a choice with gas. • To have a balanced approach on investment and the need to increase costs to customers.	• People have a basic need to keep warm and safe when using gas. • More choices for customers on types of energy offered whilst the costs are competitive in an open market. • Keep as many customers and open to new customers to keep costs down. • Jemena shows they care about all customers no matter what their circumstances are and offering financial assistance to vulnerable customers without passing the increased costs to mainstream customers.	• If people can't afford household gas, they may bring unsafe and unapproved gas appliances inside their home. • Supporting vulnerable customers is essential as we can all become vulnerable due to an unexpected change in circumstance. • Maintaining or increasing customers keeps gas prices down to all customers. By Jemena showing care to their customers in good and difficult times, it brings more positive feedback to Jemena.	See chapter 7 our proposed vulnerable customer initiatives See section 4 responding to the energy transition
Recommendation 6 – regulatory response options • Take these 7 recommendations into the future… while considering that these are the result of collaborative work from a diverse group of people and summarise a wide range of opinions. In addition to the recommendations produced from this group, we believe Jemena should continue to incorporate the summarised opinions from the youth and CALD groups, which do not entirely align with the final preferences presented here today.	• We believe that any decisions should be made with the future of all Australians in mind, and be measurable, tangible and proactive. Many of the preferences fall into a 'middle ground' which may slow change in either direction. If these decisions continue to be delayed, we only pass these issues on to the next round of participants in the Jemena public forum in 5 years.	• Jemena has curated a diverse group of people to ensure these recommendations align with the needs of the broader community. This recommendation is important because it has been the result of a long, collaborative process, and Jemena should respond to and act on these suggestions in a timely manner	See chapter 4 responding to the energy transition See section 3.1.9 balancing the views of diverse customers and stakeholders

In addition to the six recommendations, the Customer Forum voted on a package of seven initiatives (referred to as regulatory response options in Figure 3.1) that support their recommendations. When considering their votes, participants were mindful of the values they had previously agreed on and considered the key voices personas that reflected the needs and values of CALD and Youth customers which was a key element to the Customer Forum process to ensure their recommendations balanced the diverse views of customers.

These Values are:

- **Affordability**: ensuring gas remains affordable for customers in the long term.
- **Safety:** safety needs to remain a given with no additional risk introduced.
- **Reliability**: "gas should come on whenever I want it to".
- **Planning for the future**: one clear message came through on the topic of planning for the future, to act now, rather than delaying action and working towards a net zero future including renewable gas options.
- **Fairness:** ensuring that future customers do not carry the cost burden of current customers who have higher gas demand or leave the network earlier than others and that the impact of our decisions is considered across the wide diversity of customers in our network.
- **Access or choice**: retaining choice for individuals, and diversity in the energy supply.

When voting on the initiatives, the Customer Forum used an L-scale voting methodology (Love, Like, Live with, Lament and Loathe). If 80% of the group voted 'Live with' or above, the initiative was considered to be accepted by all Customer Forum participants.

The L-scale voting methodology is an adapted version of a 5-point Likert scale developed by award-winning engagement consultants MosaicLab as an evolution of Jason Diceman's 'FeedbackFrames'.[15] By using this methodology participants were allowed to indicate a level of support for the initiatives they considered while being able to express any qualifications to their preferences. This provided a better understanding of the Customer Forum's support on our 2025 Plan proposals and is a more progressive approach to understanding customer expectations compared to more traditional binary voting scales that force people into 'for' or 'against' positions that make it hard to settle on a group consensus and ensure that we account for the balancing views of diverse customers.

In Customer Forum 7, customers voted on the final package of initiatives as a whole, with 89% voting in support, demonstrating that the Customer Forum reached a consensus. Following the publication of our Draft 2025 Plan we held a recall session (Forum 8) including some members of the key voices groups. The purpose of the recall session was to test the overall support of the Draft 2025 Plan and whether our proposals aligned with the Customer Forum's recommendations in a balanced manner.

To test alignment with the recommendations we asked participants whether we had honoured our commitment to act on their recommendations, and whether there were any areas where they felt their direction had not been followed. Overall participants responded in a positive manner and felt we had honoured our commitment to them.

Customer Forum comments on the Draft 2025 Plan[16]

"I don't think there are any areas for improvement. What they have put up is reasonably in line was [with] what was put up."

"Generally, Jemena has done a good job on meeting the recommendations"

"Youth group – feel the feedback has been taken on board to adhering to recommendations. Specific examples include not sharing the cost of disconnection across the customer base, and the number of renewable gas projects, research into Western Sydney Hydrogen Hub."

"Generally, the plan adheres to many customer recommendations"

"Overall, pretty good."

When asked whether we got the balance right in the Draft 2025 Plan, all participants voted 'Live with' and above representing 100% support.[17]

The customer recommendations in Figure 3.1 tell the story around the core deliberations and what was provided to us by the Customer Forum. The recommendations give direction to us over the 2025-30 period and have played a key role in developing the 2025 Plan.

15 *JGN – BD Infrastructure – Att 2.2 - Customer forum engagement report*; page 12.
16 Ibid; page 23.
17 Ibid; page 23.

The other outcome of customer deliberations was the responses to the initiatives agreed by the Advisory Board to take forward to customers which is linked to Customer Forum recommendation 6 in Figure 3.1.

Table 3.1 provides a summary of the preferences voted by Customer Forum participants in response to the initiatives we explored with them over six sessions (Forums 2-7).

Table 3.1: Summary of Customer Forum outcomes[18]

Topics we engaged on	Customer Forum preferences	How we are responding
Renewable gas	– Innovation and planning for the future were identified as a high customer priority. – The Customer Forum overwhelmingly voted to support investment in renewable gas connections with 90% of participants voting in favour of a moderate level of support for renewable gas connections, with a focus on biomethane, over the next five years. – Reasons given for this approach included that customers wanted Jemena to pursue renewable gas connections providing more flexibility in energy sources and that a moderate approach to connecting renewable gas is more cautious than the option of an accelerated approach. – They asked Jemena to keep in mind that policies can change, technology may change and that there is currently unclear government policy.	– We are proposing to invest in eight renewable gas connections that will supply biomethane into our network. All these projects deliver net benefits to our customers. – See Chapter 5 on our planned capital investments, *JGN – Att 5.1 – Capital expenditure* and *JGN – Att 4.1 – Emissions reduction program* for more information.
Speeding up recovery of our assets	– In Customer Forum 5, we tested three options for accelerating the recovery of our assets - $300M, $500M and $700M. Participants indicated a preference split between the $300M accelerated capital recovery of our assets option (44% of votes) and the $500M option (44% of votes). $700M was least preferred with 12% of votes and was not taken forward to Customer Forum 7. – We revisited the tied preferences between $300M and $500M accelerated capital recovery in Customer Forum 7. – In Customer Forum 7, 68% of participants supported the accelerated capital recovery of our $300M assets and 47% supported the $500M option. – Customers reasons for voting this way included that they understood there would be an increase in bills in the short term in order to reduce bill impacts in the future. However, they also wanted Jemena to keep in mind the impact on vulnerable customers.	– We are proposing to accelerate the recovery of $300M assets over the 2025-30 period. – The Customer Forum reached 84% consensus in supporting this initiative. Participants who voted for $300M indicated that they did so because they felt it struck a balance between short versus long term affordability and reducing the potential impact to bills if a renewable gas future did not eventuate. – We have been very cognisant of the price impacts on customers both now and into the future. While some of our initiatives, including accelerated capital recovery, place an upward pressure on customers' bills in the 2025-30 period, they will help provide greater stability for prices over the long term. – See Chapter 10 and *JGN – Att 7.3 – Depreciation approach* - for more information on accelerating the capital recovery of our assets.

18 Refer to *JGN – BD Infrastructure – Att 2.2 - Customer forum engagement report* for a detailed overview of the Customer Forum deliberations and outcomes.

Topics we engaged on	Customer Forum preferences	How we are responding
	– The Advisory Board suggested we further socialise accelerated depreciation with customers, including a zero option. We used the recall session (Forum 8) to explore an option of zero accelerated capital recovery with Customer Forum participants. – We provided Customer Forum 8 participants with information about the implications of zero acceleration, and then retested the level of comfort with the $300M option. A "Human Library" comprising Douglas McCloskey (PIAC), Gavin Dufty (St Vincent de Paul) and Stephen Gray (Frontier Economics) was formed to offer a diverse range of perspectives on the topic. – The voting in Customer Forum 8 used the L scale approach to test that customers were still comfortable with the $300M option. – The voting results showed an increase in support for accelerated depreciation compared to Forum 7, with 84% of the group saying they could at least live with $300M.	
Managing our assets into the future	– 90% of Customer Forum participants voted to support a targeted approach to asset rehabilitation using technology and that customers valued the concept of Jemena changing the way it manages assets. – Customers' reasons for supporting this option was that safety and network reliability would be maintained. – As part of the Early Signal Pathway process, the AER suggested that we test customers' support for Picarro[19] with customers, noting that this would require an opex step change. – In Customer Forum 8, in addition to reminding participants of Picarro's role in supporting a targeted approach to mains replacement, we also discussed its potential role in helping JGN reduce its carbon emissions. Two options, with indicative bills impacts, were presented. Option 1 – Relying on carbon credits to offset emissions; and option 2 – Investing in technology (Picarro). – Customer Forum participants expressed strong support (based on results of L-scale voting) for us investing in Picarro to enable us to reduce network emissions rather than relying on the purchase of carbon credits - 94% of the Customer Forum supported the proposal.	– We are proposing to take a targeted approach to the gas mains we replace.[20] – We will invest in technologies like Picarro to help us detect gas leaks more efficiently and prioritise which gas mains we should replace. By reducing gas leaks, we can also reduce our greenhouse emissions. See Chapters 5 and 6 and *JGN – Att 4.1 – Emissions reduction program* for more information.

19 Picarro is a gas leakage detection and survey technology from the United States which will help improve our capability in detecting gas leaks in our network.

20 See *JGN – Att 5.1 – Capital expenditure*.

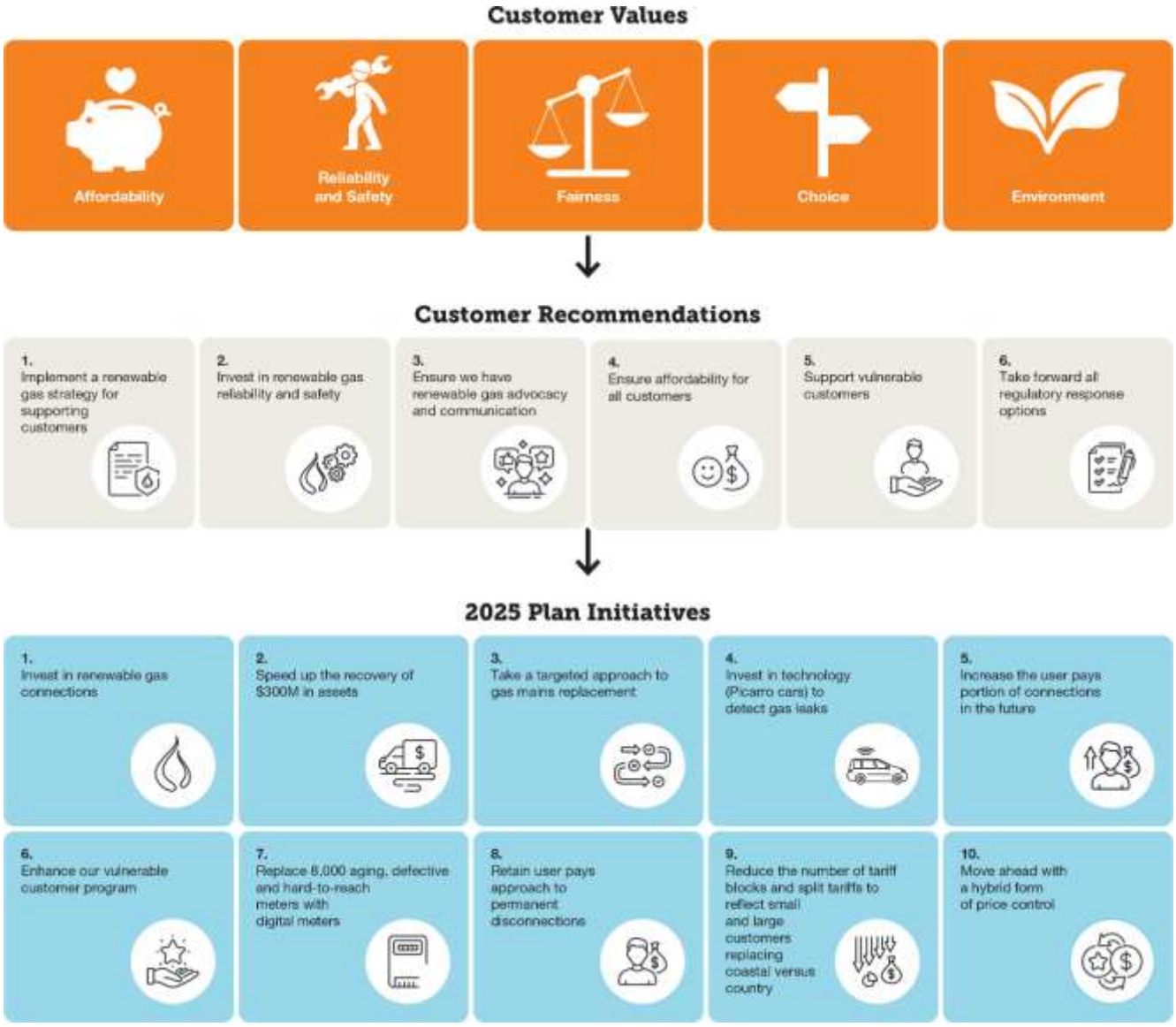
Topics we engaged on	Customer Forum preferences	How we are responding
New connections	– 87% of the Customer Forum agreed that we should increase the capital contributions that we seek from customers seeking to connect to our network.	– In May 2024, we submitted to the AER for its review proposed revisions to JGN's Model Standing Offer. The revisions to the Model Standing Offer reflect changes to JGN's connection policy so that fewer customers qualify for a free connection. See Chapter 5 for more information.
Assisting vulnerable customers	– 92% of the Customer Forum agreed that we should do more to support vulnerable customers. – Customers also included recommendations for what might constitute doing more to support vulnerable customers including more communications, especially to include diverse groups by translating materials that cater for this diversity.	– Customers were strongly supportive of their recommendations associated to vulnerable customer programs and that we should consider doing more. – We are proposing a total of $2.7M to enhance our vulnerable customer program by exploring ways to expand existing initiatives such as increasing our involvement in key community programs. This will include providing home gas audits to customers experiencing vulnerability, an information hub providing educational content on making efficient gas and energy choices in the home and enhancing our internal capacities to support our vulnerable customer program. See Chapter 6 and *JGN – Att 6.2 – Opex step changes justification* for more information.
Digital metering	– 84% of the Customer Forum voted on us replacing ageing, defective and hard-to-reach meters with a digital meter.	– We are proposing to replace 8,000 ageing, defective and hard-to-reach meters with a digital meter. See Chapter 5 and *JGN – Att 5.1 – Capital expenditure* for more information.
Permanent disconnections (abolishments)	– 84% of the Customer forum voted to maintain our current approach of charging the full abolishment fee to the party requesting to abolish their gas connection, rather than recovering some of these costs from all of our customers.	– In line with customer feedback, we are proposing to maintain our current approach. – This is discussed in Chapter 10.

At the recall session (Forum 8), we tested customer support for possible improvements to our digital customer experience platforms—our Draft 2025 Plan included an opex step change for these improvements. Participants were presented with three options, including indicative bill impacts, that could make small, moderate or large improvements to our digital communications.

The Customer Forum were not supportive of the improvements and did not consider the changes necessary or of value. Based on customers' feedback we have not included expenditure associated with the improvement of our digital customer experience platforms in the 2025 Plan.

Our 2025 Plan is designed to deliver on the values considered important by the Customer Forum. These values are supported through the Customer Forum recommendations which have informed our 2025 Plan proposals. For example, the Customer Forum recommendations associated with renewable gases is supported by initiative 1 – invest in renewable gas connections – as depicted in Figure 3.2 and shows how the 2025 Plan delivers on customers' expectations.

Figure 3.2: Values, Recommendations and Initiatives



3.1.2 Validating Customer Forum support

As part of the CCP's role in the early signal pathway process, it developed a 'Conclusions report' that provides the AER with advice on the effectiveness of our engagement activities with customers and how this is reflected in the development of our 2025 Plan. The Conclusions report raised a number of matters associated with customers' understanding of key topics, the opportunity for reopening topics, whether the information presented to customers, and the views of industry experts, were genuinely unbiased and realistic, and the extent to which the 2025 Plan proposals accurately reflect customer preferences.[21]

In light of the observations presented in CCP's conclusions report we appointed Sagacity and JD Insights to conduct in-depth interviews and surveys of the Customer Forum participants. The purpose of this research was to deep dive on the matters raised by CCP and to test whether customers trusted the engagement process and understood the topics they deliberated on to make informed recommendations that have influenced our 2025 Plan.

Two streams of research were undertaken with Customer Forum participants that were run independently by Sagacity and JD Insights. These streams involved:

21 Refer to *JGN – Att 2.1 – Consumer Challenge Panel – feedback and response* – for our response to the CPP's Conclusions report.

- Online survey: All participants were provided the opportunity to take part in an initial online survey, taking around 5 minutes, to gauge feedback at an overall level
- In-depth interviews with JD Insights: 10 participants were then selected to take part in a longer (45 minutes) in-depth interview to discuss their responses in greater depth.

32 participants of the Customer Forum were invited to take part in the online survey, with 10 doing both the survey and in-depth interview. Of the 32 participants, 22 agreed to partake in the research which represented over 50% of the Customer Forum.

Participants were asked to think about the engagement process overall, and how satisfied they were with the experience. 16 of the 23 participants taking the survey rated their overall experience as 9 or 10 out of 10 in terms of overall satisfaction with the remaining participants still rating overall satisfaction as high, or at least 7 out of 10.[22]

> "They were very clear throughout the process. 'We need your information. It wasn't just getting big businesses opinion. It was looking at what the average person wanted, what young people and people from diverse backgrounds needed. It was well done without feeling tokenistic."

Source: Sagacity and JD Insights report, page, 16.

This high level of satisfaction was applicable to all aspects of the Customer Forum process including:

- Involvement of JGN senior leaders
- Forums including a diverse group of participants
- Understanding of the challenges faced by JGN
- Time allowed for reviewing reading materials
- Customer Forums representing a balanced view of customers
- Involvement of independent speakers
- Participants understanding of topics presented
- Timing and planning of the forums
- The quality of reading materials provided.[23]

> "As experts in their field, they could offer something that Jemena couldn't. Besides being interesting hearing different points of view, they were representing their own external companies and interests. This means that Jemena were not pushing their own view at the exclusion of others… helped to give the process credibility."

Source: Sagacity and JD Insights report, page, 20.

Correlating with this high level of satisfaction, all participants surveyed felt that the Customer Forum reached an overall consensus.

The research by Sagacity and JD Insights has confirmed that customers trusted the process, felt valued and were adequately educated to make informed recommendations which gives confidence that our proposals and initiatives algin with customers' values and expectations.

In addition to the qualitative engagement program, we appointed Redbridge – discussed in section 3.1.8 - to conduct a survey of Sydney energy customers to understand their attitudes and sentiments towards the energy industry.

Redbridge's report provides us with confidence that the feedback from our customers as part of our engagement program on our 2025 Plan aligns with broader customer and community expectations.

In developing our 2025 Plan, we have taken on board the feedback and views from large customers, small businesses, and retailers received throughout the engagement which have largely aligned with community representatives - via the Customer Forum recommendations.

We have confidence that our 2025 Plan aligns with customer value and expectations based on the Sagacity's and JD Insight's research, newDemocracy's evaluation, Redbridge survey results and our engagement with the broader customer base.

22 JGN - *Sagacity and JD Insights - Att 3.3 - Sagacity and JD report,* page, 15.
23 Ibid, page 17.

3.1.3 The key voices

Through our engagement with the key voices steering groups, utilising an iterative process of building customer personas for young people and CALD communities, we were able to build an understanding of what they value.

The values of the Youth Steering Group are focused on:

- **Companies taking action:** there was a strong expectation for companies to make the hard decisions now, and for integrating community voices in senior leadership strategy forums.
- **Supporting marginalised groups:** this group emphasised the need to ensure that the least financially capable and disadvantaged individuals are not adversely impacted in the energy transition. They emphasised that choice of fuels and equity are critical for young people. For example, some young people are making cuts to their spending, others are living at home for longer, some have difficulty making ends meet and others feel a growing intergenerational wealth gap. For this group, they felt that supporting and building young peoples' capacity to participate in the transition and having their voices heard throughout engagement about the transition was very important to them.
- **Balancing the seemingly competing priorities of affordability and environmental concerns:** Many young people face a quandary, as they deeply value the environment, yet often lack the financial means to demonstrate their commitment. Instead, their focus is often on contributing to the overall household living expenses or supporting family members financially.
- **Being environmentally minded:** the group is extremely environmentally aware and keen for action to be taken now.

The values of the CALD community Steering Group include:

- **A strong cultural connection to cooking with gas:** there was a strong preference for using gas for cooking, and a reluctance to give it up under any circumstance.
- **Environmental awareness:** this group has a desire to improve the environment and doing what it takes to meet net zero emissions targets. Many came to Australia for better living conditions, including the environment.
- **A desire for renewable gas:** a strong desire to continue accessing gas into the future. If renewable gas is the way to do this, it is supported.
- **Vulnerability:** being new to Australia, they have limited connections, understanding of the English language and access to services, like benefits and subsidies.
- **Concern about affordability:** struggling with the cost of living and making choices based on what they can afford and what they know.

Following the publication of our Draft 2025 Plan some key voices participants attended the Customer Forum recall session to understand and test how well our 2025 Plan proposals aligned with customer expectations. Table 3.2 provides a summary of the perspectives raised by key voices participants in response to the topics we engaged on and how we are responding to their expectations and values.

Table 3.2: Summary of key voices outcomes

Topics we engaged on	Feedback we received	How we are responding
Young people		
Affordability	– Affordability is a concern of young people.	– Recognising affordability and cost of living pressures impacting customers today, we have sought to carefully balance the need to take action now against the short-term price impacts of our plans. – See Chapter 4 to understand how our actions will promote greater stability for prices over the long term.
The environment	– Would prefer a stronger push for renewables. – Majority said renewable gas meets the needs of young people; however, they would prefer it as a transitional fuel.	– In our 2025 Plan we propose to invest in eight renewable gas connections - with a focus on biomethane – that can help reduce overall carbon emissions across the gas supply chain. – We will also invest in new technology that will enable us to better detect and repair gas leaks which will help reduce our greenhouse emissions. – See Chapter's 5 and 6 and *JGN – Att 4.1 – Emissions reduction program* - to learn more about our plans to protect the environment.
Planning for the future and managing uncertainty	– The slow and steady approach of the Customer Forum does not meet the needs of young people in the long run (e.g. prioritising current over future customers). – This group said they did not need a future with natural gas – their focus would move to other renewable energy sources. – Jemena should consider how customers can sign up for renewable gas. – Jemena should hold the government accountable for energy policy.	– We will continue to advocate to key policy makers in relation to energy policy noting the important role that renewable gas can play. – Our 2025 Plan will implement a number of initiatives over the 2025-30 period that will manage uncertainty and support a smoother transition to net zero. – Investing in renewable gas connection projects will retain a higher number of customers which in turn lowers asset stranding risk and ensures a fairer recovery of our assets. See Chapter 4 for details.
How should Jemena meet customer expectations	– There was a strong expectation from young people for businesses like ours to take action now and do the hard work. – Consider how to support and communicate with customers through the energy transition.	– The need to act now is imperative, the earlier we start to address the challenges presented as a result of the rapid energy transition, the smoother the transition to net zero will be. Chapter 4 discusses our 2025 Plan initiatives that will support the transition to net zero. – We will enhance the way we communicate with customers through our social media and website channels about the initiatives and actions we are pursuing as outlined in the 2025 Plan.

Topics we engaged on	Feedback we received	How we are responding
Culturally and Linguistically Diverse (CALD**) communities**		
Affordability	– Focus on keeping bills affordable for vulnerable CALD communities.	– Recognising affordability and cost of living pressures impacting customers today, we have sought to carefully balance the need to take action now against the short-term price impacts of our plans. – Partner with other networks and community organisations to support vulnerable customers through increased investment in community programs like Voices for Power.
The environment	– More detail on how renewable gas will be implemented and funded, as well as government policy.	– We are proposing to invest in eight renewable gas connections that will support the supply of biomethane into our network. See Chapter 5 on our planned capital investments for more information and *JGN – Att 4.1 – Emissions reduction program* - to learn more about our plans to protect the environment. – We will continue to advocate key policy makers in relation to energy policy and the role that renewable gas can play in supporting the transition to net zero.
Planning for the future and managing uncertainty	– Consider how CALD communities can be supported through the energy transition. – This group had a strong cultural attachment to gas and they want the choice to access gas in the future. – They strongly support renewable gas to enable choice and future access to gas. – They would accept any overarching energy policy decisions from government, but would find a way to continue cooking with gas if mains gas wasn't available. For example, they would revert to LPG bottled gas or using charcoal for cooking purposes.	– We are proposing to invest in eight renewable gas connections that will support the supply of biomethane into our network which in turn can retain a choice in the use of gas for CALD communities. See Chapter 5 on our planned capital investments and *JGN – Att 4.1 – Emissions reduction program* for more information.
How should Jemena be meeting customer expectations	– This group sees government playing a role in providing subsidies for the energy transition, in addition to community organisations and businesses playing a supporting role. – They are ready to adopt more sustainable lifestyles, however, they would like to find a way to continue cooking with gas for cultural reasons.	– As highlighted above, we will continue to advocate key policy makers in relation to energy policy matters including the role that renewable gas can play in supporting the transition to net zero. In addition, we are exploring ways to expand accessible language communications, the provision of visual information via social media, and support programs for customers experiencing vulnerability. See Chapter 6 and *JGN – Att 6.2 – opex step change justification* for more information.

3.1.4 Retailers

At Retailer Forum 6 we held a 'closing the loop' session to provide an overview of how retailer and customer feedback had been incorporated into the Draft 2025 Plan, and we asked retailers for their views and reflections on how well they thought we had acted on customer expectations. Overall, the majority of retailers attending agreed that the Draft 2025 Plan reflected the sessions and discussions they had with us in the lead-up to the development of the Draft 2025 Plan and concluded that we had incorporated customer feedback in a balanced and comprehensive manner.[24]

Table 3.3 provides a summary of the issues raised by retailers in response to the topics we engaged on and how we are responding to their feedback.

Table 3.3: Summary of retailer feedback

Topics we engaged on	Feedback we received	How we are responding
How retailers would like to be engaged	– Value open and positive communication, and transparency which includes the provision of information in a timely manner. – Happy to engage in an online environment using online tools to gather feedback. – Frequency and timing of engagement is important.	– To understand the needs and expectations of retailers, we have undertaken an extensive engagement program that aligns to their preferences, as outlined in section 2.4.5.
Planning for the future	– Interest in renewable gas and when it becomes available. – Industrial customers will need gas for a more extended period, and use a lot of gas, so renewable gas can offer a solution.	– We propose to invest in renewable gas connections to biomethane suppliers. This means that customers – including industrial customers – can access renewable gas sooner, which provides greater energy security from fuel diversification. See Chapter 5 and *JGN – Att 5.1 – Capital expenditure* for more information on our planned capital investments.
Digital metering	– Overall retailers are supportive of digital meters, and think that they would help improve the customer experience. – One retailer did not support digital metering in the context of the uncertain role gas will play in the future.	– We are proposing to replace 8,000 ageing, defective and hard-to-reach meters with a digital meter. See Chapter 5 for more information and *JGN – Att 5.1 – Capital expenditure* for more information.
A new approach to connections	– Most retailers agreed with our proposed changes to our connections policy so that more customers are required to make an up-front contribution if they wish to connect to our network.	– We submitted our revised Model Standing Offer to the AER for review which proposes to update our connection policy so that fewer customers qualify for a free connection. See Chapter 5 for more information.
Assisting vulnerable customers	– A majority of retailers told us they are supportive of assisting customers in need, with a number reporting that customers are asking for gas bill assistance for the first time. – One retailer was not in favour of us assisting vulnerable customers.	– We are proposing to enhance our vulnerable customer program by exploring ways to expand existing initiatives such as our involvement in key community support programs. See Chapter 6 and *JGN – Att 6.2 – Opex step changes justification* for more information.

Retailer's feedback on the form of price control and proposed tariff structures is discussed in Chapter 10.

24 Refer to *JGN – Att 3.2 – Small business Retailer Large User engagement report* for an overview of the Retailer engagement process.

3.1.5 Large customers

Following the publication of our Draft 2025 Plan, we hosted a Large User Customer Forum to provide an overview of our proposals and test their view on how well our proposal aligned with the feedback we garnered from the earlier large customer forums. Overall, large customers agreed with the proposed initiatives in the Draft 2025 Plan with participants acknowledging that they "made sense" to them.[25]

Table 3.4 provides a summary of the issues raised by large customers in response to the topics we engaged on and how we have responded to their expectations.

Table 3.4: Feedback from large customers

Topics we engaged on	Feedback we received	How we are responding
How large customers would like to be engaged	– They would like two-way conversations. – Want engagement to be meaningful, focused, transparent and open.	See section 2.4.6 for details of our engagement with large customers.
Planning for the future	– Large customers were predominately interested in understanding how we are ensuring reliability and managing the energy transition. – They see renewable gas playing an important role in the energy transition which can support large customer obligations of meeting the Federal Government's safeguard mechanism requirements. – Renewable gas could take the pressure off the electricity network and reduce investment by major gas customers needing to transition their equipment to electric. – They also see renewable gas as having a role to support ongoing processes that involve high heat.	To avoid the risk of adverse customer outcomes resulting from the energy transition, it is prudent to act now, and implement a suite of initiatives – including investing in renewable gas connections - that can minimise bill impacts over the longer term, and address intergenerational equity issues. See Chapters 4 and 5, and *JGN – Att 5.1 – Capital expenditure* - to understand how we are planning for the future.
Speeding up recovery of assets	– The majority of large customers were silent in terms of their preferences for accelerated depreciation with one participant noting that accelerated depreciation would help with technology adaptation in their own processes.	See Chapter 7 and JGN – *Att 7.3 – Depreciation approach* - for details on our proposed accelerated depreciation allowance which is far less than what would be required if we were planning for a future in which our network had no role to play in a decarbonised energy sector.
Reliability	– Large customers wanted to understand how we are maintaining network reliability into the future.	Our capex program is focussed on ensuring that we continue providing efficient, reliable and safe services to customers through our asset management programs. See Chapter 5 and *JGN – Att 5.1 – Capital expenditure* - for more details.
Affordability	– Large customers wanted more information to understand how we are ensuring affordability for the provision of our services.	Recognising affordability and cost of living pressures impacting customers today, we have balanced the need to take action now against the short-term price impacts of our plans. In doing so will help provide greater stability for prices over the long term, and support the efficient future utilisation of our gas network by large customers. Chapters 4 and 10 discuss how we are balancing our plans to provide long term price stability and how we propose to charge for the provision of our services moving forward.

25 Refer to *JGN – Att 3.2 – Small business Retailer Large User engagement report* for an overview of the Retailer engagement process.

3.1.6 Small businesses

As part of our 2025 Plan consultation process we hosted a final small business focus group to provide an overview of our proposals and test whether our Draft 2025 Plan aligned with the feedback we received from small business customers. Participants were overall supportive of the Draft 2025 Plan proposals and felt that the document was clear, balanced and highly understood.[26] Participants appreciated the transparency in the decision-making process and how different points of view from customers and stakeholders were balanced across the initiatives put forward in the 2025 Plan.

Table 3.5 provides a summary of the issues raised by small business customers in response to the topics we engaged on and how we are responding to their expectations.

Table 3.5: Feedback from small businesses

Topics we engaged on	Feedback we received	How we are responding
Affordability	– Small business customers are concerned with current rising energy costs in electricity and gas and the expense of the energy transition down the track. They like to have the choice of fuel to support the flexibility of business needs and appreciate the reliability of gas. – Some participants were considering switching to alternative renewable energy sources potentially based on future gas price movements.	– We recognise affordability is a crucial challenge for small businesses. We have sought to carefully balance the need to take action now against the short-term price impacts of our plans to ensure longer term stability in the price for gas network services. We discuss this in Chapter 4.
Accelerating capital recovery	– 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 this initiative.	– We are proposing to accelerate the recovery of $300M assets over the 2025-30 period whilst being cognisant of the price impacts on customers both now and into the future. Refer to chapter 7 section and *JGN – Att 7.3 – Depreciation approach* for more information about our approach to accelerating capital recovery.
Planning for the future and managing for uncertainty	– Small business customers are extremely interested in renewable gas as many are reliant on gas as a fuel source and will find it difficult to switch energy sources. – 50% of small businesses voted to expedite renewable gas and the remaining 50% voted for a more moderate approach to investing in renewable gas.	– We are proposing to invest in eight renewable gas connections that will supply biomethane into our network. All these projects deliver net benefits to our customers. – See chapter 5 on our planned capital investments and *JGN – Att 5.1 – Capital expenditure* for more details.
A new approach to connections	– Most small business customers agreed with our proposed changes to our connections policy so that more customers are required to make an up-front contribution if they wish to connect to our network. – Although they were supportive of our proposed changes there were differing views in terms of how much of the connection costs should be paid by the customer directly versus the boarder customer base.	– We submitted our revised Model Standing Offer to the AER for review which proposes to update our connection policy so that fewer customers qualify for a free connection. See Chapter 5 for more information.
How Jemena manages its assets	– Small business customers had similar sentiment to residential customers and prefer that we take a targeted approach to our gas main replacement program.	– We are proposing to take a targeted approach to the gas mains we replace. – We will invest in technology (Picarro) to help us detect gas leaks more efficiently and prioritise which gas mains we should replace. See chapters 5 and 6 for more information.

Refer to chapter 10 for small business customers feedback on the form of price control and proposed tariff structures.

26 Refer to *JGN – Att 3.2 – Small business Retailer Large User engagement report* for an overview of the Retailer engagement process.

3.1.7 Customer Council

Table 3.6 provides an overview of the feedback from our Customer Council.

Table 3.6: Customer Council feedback

Topics we engaged on	Feedback we received	How we are responding
Engagement design	– Asked how Jemena planned to incorporate diverse groups in the engagement – Consider observers and hybrid engagement (mix of online and in-person) – Consider the Advisory Board and Expert Panel and how the individuals in these groups potentially cross over or interact with each other.	– We incorporated diverse groups into the key voices part of our engagement program, focusing on young people and the CALD community because of their integral role in the energy transition. – The key voices groups provided the Customer Forum with their unique values and perspectives on gas use, the future of gas, and the energy transition to net zero, and then to review and challenge the Customer Forum's initial recommendations from those unique perspectives. – We used both online and in-person sessions for the engagement process. – We considered Advisory Board and Expert Panel separately because of their distinct role, however we looked for opportunities to promote interactions with each other. For example, we arranged for the Chair of the Advisory Board, Rosemary Sinclair AM to attend Expert Panel Session 4 (18 November 2022).
Reflections on the process	– Asked how the program has been evaluated and what the evaluators feedback is. – Whether the deliberative engagement process used is still fit for purpose.	– The newDemocracy Foundation was appointed by BD Infrastructure with the support of us to independently evaluate the Customer Forum process. Overall, newDemocracy's evaluation concluded that the Customer Forum process was strong and demonstrated good practice, meeting the requirements of the Better Resets Handbook. – We have listened to the CCP and taken on feedback when preparing the Draft 2025 Plan. For example, the CCP noted that JGN should incorporate conflicting consumer views in the development of the Draft 2025 Plan. In response, we aimed to ensure the 2025 Plan clearly articulates and acknowledges the differing customer views. This is described in section 3.1.9. – As discussed in Chapter 2 we made efforts to ensure broad and deep engagement through the diversity of groups we engaged with and the number of repeated in-depth sessions. Post the publication of our Draft 2025 Plan we held recall sessions with all the customer groups we engaged to test their views on whether our proposals, as outlined in the 2025 Plan, aligned with their values and expectations.

3.1.8 Other insights – quantitative survey

In addition to the qualitative engagement program, we appointed Redbridge to conduct a survey of Sydney energy customers to understand their attitudes and sentiments towards the energy industry. The survey was designed to provide representative samples of our customers based on age, gender, education and location by Australian Electoral Commission (AEC) defined regions across the Sydney metropolitan area.

The survey provided an effective sample size of 1,801 customers which is statistically significant.

In Redbridge's, *Sydney energy attitudes and sentiments* report[27], the most important issue identified by Sydney residents was cost of living and

27 Redbridge, Sydney energy attitudes and sentiments, December 2023 (*JGN – Redbridge – Att 3.4 – Sydney Energy Attitudes and Sentiments*).

household affordability—76%[28] of survey respondents considered this the most important issue. This is consistent with the feedback we have heard from our customers throughout the various engagement forums, and the Customer Forum's key value of 'Affordability'. The Redbridge report also reveals that 76%[29] of Sydney households are concerned about energy reliability, and 85% agree that NSW needs a mix of energy sources—including solar, wind and gas—and that we should not 'put all energy eggs in the one basket'.[30] This feedback is consistent with our customers' desire for choice when it comes to meeting their energy needs. It is also consistent with recent polling by Resolve Political Monitor conducted on behalf of the Sydney Morning Herald which found that 60% of people polled supported the use of gas in Australia's energy mix.[31]

In addition, 78%[32] of customers surveyed by Redbridge support having the choice of renewable gas options as part of the energy transition. This customer sentiment aligns to the Customer Forum's recommendations that renewable gas can play a strategic role in supporting customers and ensure the provision of reliable and safe gas services into the future.

The Redbridge report shows that customers appreciate the challenges associated with the energy transition, with 68%[33] of survey respondents believing that the transition to net zero will not make energy prices cheaper.

The customer sentiments revealed in Redbridge's report indicate that customers recognise the challenges presented by the transition of Australia's energy system from a centralised, fossil fuel-based system to a decentralised, renewables-based system. Mitigating these challenges will entail a range of initiatives including, but not limited, to those outlined in our 2025 Plan. These include investing in renewable gas connections, which can lower the risk of asset stranding, and our initiative to accelerate depreciation to help ease the cost burden of unrecovered past investments for gas customers into the future.

Redbridge's report provides us with confidence that the feedback from our customers as part of our engagement program on our 2025 Plan aligns with broader customer and community expectations.

3.1.9 Balancing the diverse views of customers

Central to our customer engagement program was our commitment to consult with a wide array of customers to ensure that we understand the diverse perspectives of needs and expectations of our services and on the initiatives that can help us manage uncertainty surrounding the future role of our gas network.

The Youth Steering Group advised us that young people are strongly orientated towards environmental outcomes but are struggling with the cost of living, and that they weighed up those factors heavily in their considerations. The Youth Steering Group also provided feedback on the Customer Forum's initial recommendations, that they might be overly cautious given the long-term challenges of transitioning to net zero carbon emissions and expressed impatience with older members of the group adopting a more 'wait and see' approach to managing uncertainty. Customer Forum Recommendation 6 (see Figure 3.1) showed how the group acknowledged the variance of views.

The CALD Group advised the Customer Forum that new and emerging communities have a strong cultural connection to gas, but also struggle with affordability and lack of access to government subsidies for energy and are isolated due a lack of connection to mainstream Australian society. The CALD group supported the Customer Forums preferences for the pursuit of renewable gas and supporting vulnerable customers.

In formulating our 2025 Plan, we have sought to ensure that we transparently represent the wide range of views put forward by our customers. Our commitment to deliberative engagement puts the community affected by our decisions at the heart of the decision-making process by ensuring the

28 Redbridge, Sydney energy attitudes and sentiments, December 2023 (*JGN – Redbridge – Att 3.4 – Sydney Energy Attitudes and Sentiments*); page 3.

29 Ibid; page 4.

30 Ibid; page 7.

31 Sydney Morning Herald (James Massola), Australian voters back plans to keep gas on tap, May 2024, polling based on a survey of 1,602 respondents.

32 Redbridge, Sydney energy attitudes and sentiments, December 2023 (*JGN – Redbridge – Att 3.4 – Sydney Energy Attitudes and Sentiments*); page 12.

33 Ibid; page 13.

Customer Forum participants, representing their community, come to a consensus view on the initiatives that they considered. This does not mean that 100% of the Customer Forum participants had to come to an agreed position for each initiative considered. This is highly unlikely and is arguably not desirable in a deliberative process that centres on diversity and balancing the views of customers. A common rule of thumb in deliberative processes is that around 80% of participants must agree that they could 'live with' a set of recommendations.

In finding consensus the Customer Forum used an L-scale voting methodology (Love, Like, Live with, Lament and Loathe) as outlined section 3.1.1. If 80% of the group voted 'Live with' or above, the initiative was considered to be accepted by the Customer Forum.

To ensure the Customer Forum could make informed recommendations that considered the balancing views of customers, the deliberative process was designed to educate participants about the challenges presented by the energy transition and to understand values associated to the provision of gas services from a broader community perspective. Participants then began to pull what they had learned into a set of questions and considerations that they used when assessing the initiatives and setting preferences and making initial recommendations. The questions and considerations raised by Customer Forum participants demonstrate they had grasped the core trade-off issues of who pays, who bares risk, and when to act.[34]

When casting their votes, the Customer Forum members were asked to consider the diverse views of the participants, including the feedback they received from the Youth Steering Group and CALD Group.

During Customer Forum 7 customers reached a consensus view (of at least 80%) on six of the seven individual initiatives considered. The only exception was accelerating the capital recovery of our assets, which was supported by 68% of participants. Although slightly short of 80%, the Customer Forum expressed support for this initiative when it considered it as part of the full package of initiatives (Recommendation 6), and as evidenced by its voting on the final package of initiatives (with 89% in support, which represents a consensus).

Following the publication of our Draft 2025 Plan we held a recall session (Forum 8), which also included some of the key voices participants, to test the overall acceptance of the Draft 2025 Plan and whether they thought our proposals aligns with the Customer Forum's recommendations.

During the recall session, the Customer Forum was also presented with a view of zero accelerated capital recovery to ensure that they had a solid understanding of this initiative.

The voting results showed a clear increase in support for accelerated depreciation compared to Forum 7, with 84% of the group saying they could at least live with $300M.

As discussed in Chapter 3, we appointed Sagacity Research and JD Insights to conduct in-depth interviews and surveys of the Customer Forum participants to test whether they understood the topics they deliberated on to make informed recommendations that have influenced the 2025 Plan. As part of exploring participants understanding of the key topics, the research explored customers understanding of the role of accelerated depreciation. Of the 22 participants surveyed, 17 felt they had good to excellent knowledge of the topic with 4 participants feeling they had average knowledge but enough to provide informed feedback.

When the Customer Forum was asked whether we got the balance right in the Draft 2025 Plan, all participants voted Live with and above representing 100% support. This support is consistent with support we received from small businesses and large customers.

Sagacity Research and JD Insights also explored Customer Forum participants broader understanding of the concepts and topics that were covered across the Forum series. All participants surveyed felt they had enough knowledge to provide informed feedback which gives confidence to the outcome that the Customer Forum agreed we got the balance right.

Tasking the Customer Forum to vote on the package of initiatives and reach consensus has ensured that the proposals put forward in the 2025 Plan represent the diverse perspectives of our customers in a balanced and fair manner. We have also taken on board the feedback and views from large customers, small businesses, and retailers received throughout the consultation process which have largely aligned with the views of our community representatives - via the Customer Forum recommendations.

34 Refer to page 22 of *JGN – BD Infrastructure – Att 2.2 – Customer forum engagement report* for an overview of Customer Forum questions shaping participant considerations.

4. Responding to the energy transition

Highlights

- Australia and the NSW governments have committed to achieving net zero emissions by 2050, which is driving a major transformation of the energy system towards renewables. The NSW Government has set a target to reduce greenhouse gas emission by 50% of 2005 levels by 2030.
- Our network is a large greenhouse gas emitter and therefore must plan to support these emissions reduction targets. Achieving the Australian and NSW Government's legislated emission reduction targets will require significant change, akin to the industrial revolution but on a compressed timescale. The resulting transition creates uncertainty for gas networks, but also provides opportunities to support decarbonisation through renewable gases and evolving to a more decentralised energy system. The need for us to act is now.
- Our involvement in helping the NSW Government achieve its legislated target emissions reduction is consistent with the National Gas Objective and recent supporting changes made to the NGR.
- To understand the implications of achieving emissions reductions, we have considered different initiatives via the development of an economic model with four plausible future scenarios to 2050. The modelling found that without transitioning to renewable gases like biomethane and hydrogen, gas is likely to lose competitiveness to electrification in three of the four scenarios that the Expert Panel developed between 2030-2040, risking increased prices for remaining customers, asset stranding and intergenerational equity issues.
- To address these risks, we have developed a balanced set of initiatives in our 2025 Plan including accelerated depreciation, investments in renewable gas connections, a more targeted asset replacement program, changes to connections policies, improved measurement of emissions (through leading Picarro technology) and updates to tariff structures. We have also accounted for mandatory climate change reporting which will help us identify the target emission reductions we need to support government commitments.
- While these initiatives may increase prices in the near-term, our modelling shows they can help mitigate price spikes, asset stranding risks and intergenerational equity issues in the long term as the energy system transitions.

4.1 An uncertain future for gas

The energy system both in 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 Australian energy landscape. This presents a complex challenge for JGN and our customers which we have considered when developing the 2025 Plan which is in the long-term interests of consumers. Whilst we believe that gas has an important role to play in ensuring an orderly and least cost transition to net zero, there is still much uncertainty about both the exact pathway and pace of the energy transition.

Following the United Nations Paris Agreement, which came into effect in 2016, Australia has made a number of commitments to reduce carbon emissions. In September 2022, the Federal Government formalised the pledge for Australia to achieve net zero carbon emissions by 2050. This will be enforced by the Safeguard Mechanism, which introduces a new requirement for high-emissions facilities, including JGN, to reduce their baseline emissions.[35]

35 The Safeguard Mechanism

In addition to setting emission reduction targets, the Australian Government has joined the Global Methane Pledge. This pledge is a commitment to reduce methane emissions to a level consistent with the 1.5°C pathway (30% below 2020 levels by 2030) and to continuously work to improve the accuracy, transparency, consistency, comparability, and completeness of national greenhouse gas inventory reporting.

State governments, including the NSW Government, have set net zero emissions targets by 2050. Other states, such as Victoria and the ACT, have introduced bans on new gas connections. To date, the NSW Government has ruled out a similar ban. However, a number of local councils located within our JGN network have either proposed or implemented bans on new gas connections.[36]

Australia's commitment to decarbonisation has created the need for a rapid transformation of how energy is produced, distributed and used. To meet Australia's commitment to net zero carbon emissions by 2050, and interim targets of 43% (Australian Government) and 50% (NSW Government) reductions in emissions by 2030, the energy system needs to transition from a centralised, fossil-fuel based system to a decentralised, renewables-based system.

In supporting Australia's commitment to decarbonisation, the Energy Ministers agreed to integrate emissions reduction objectives into the National Gas Objective with the purpose of providing greater clarity to energy market bodies on how to consider emissions reductions in undertaking their functions; and to send clearer signals to the wider energy industry and broader public in working together to achieve a decarbonised energy sector.

In response to the revision of the National Gas Objective, the Australian Energy Market Commission amended the NGR to be clear that network pipeline service expenditure which contributes to the meeting of government emission reduction targets is to be considered when setting regulated prices.

Government decarbonisation policies, improvements in energy efficiency, constrained supply, volatile wholesale gas prices, and growing competition from renewable electricity are all placing pressure on the role of natural gas in the energy mix. AEMO forecasts residential and small commercial consumption to gradually decline in the short 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 our network becoming stranded, with potential implications for customers who remain dependent on gas.

We know from our engagement that some customers already find the energy transition difficult, expensive and challenging. Customers are concerned about the prospect of the implications for our most vulnerable, and the risk that they are left behind. They are also concerned about the implications for future generations.

The increasing speed with which this transformation is occurring has a direct impact on our gas network and our planning processes. We cannot continue to operate in the same way that we have in the past. Our network has the potential to support the transition of the energy system to a distributed, renewables system, particularly though the provision of safe, affordable, reliable, and cost-effective services to residential, commercial and industrial customers. Notably, renewable gas and our emissions reduction program[37] provide a pathway to reducing the carbon footprint of our gas network which can support broader decarbonisation objectives.

The need to act now is imperative, the earlier we start to address the challenges presented as a result of the rapid energy transition, the smoother the pathway to net zero will be. Our 2025 Plan will implement a number of initiatives based on the best information currently available and provides flexibility to adjust these initiatives in the future as new information becomes available.

Regardless of how we respond to the energy transition, we must also continue to meet our regulatory obligations in regard to safety, reliability, security, and the environment, which are the key drivers of our expenditure forecasts. This includes meeting obligations under the NGR, including the mandatory connection of customers seeking the supply of gas from our network. Our 2025 Plan has accounted for these regulatory obligations through our planned capex and opex forecast that we discuss in Chapters 5 and 6 respectively.

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

37 Refer to *JGN – Att 4.1 – JGN Emissions reduction program*.

4.2 Plausible future energy 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). This included the establishment of an Expert Panel to develop plausible future scenarios for the future NSW energy system. These scenarios are tailored to the role of our gas network in the NSW energy system and are based on our understanding of the characteristics and usage patterns of our NSW-customer base. The scenarios highlight plausible scenarios for the gas network in the 2050-time horizon, and also more immediately in 2030.

The Expert Panel produced four plausible future scenarios, as detailed in Table 4.1.

Table 4.1: Key attributes of each scenario

	Government	Social	Technology	Economics	Customers	Decarbonisation
Electric Hare	Strong electrification policies	Community committed to decarbonisation	Slow technology development for H_2 and biomethane	High energy price leads to intervention	Rapid adoption of electrification	Rapid decarbonisation
Big Hydrogen	Strong renewable fuel policies	Community committed to decarbonisation	Rapid technology development for H_2 and biomethane	High costs initially, but rapidly fall	Some pay premium for renewable gas amenity	Rapid decarbonisation
Electric Tortoise	Policies reactive to price shocks	Community focus on affordability	Slow technology development for H_2 and biomethane	High energy price leads to intervention	Slow to convert	Slow decarbonisation
Market Hydrogen	Policies based on incentives and price signals	Community focus on affordability	Rapid technology development for H_2 and biomethane	Commercially competitive H_2 market	Some pay premium for renewable gas amenity	Slow decarbonisation

Source: *JGN – KPMG – Att 2.3 – Expert Panel Report*.

4.3 Our modelling tool – Future of Gas 2050 Model

4.3.1 Modelling framework

The implications of the decisions that we make during the 2025-30 period will be different depending on how the future unfolds. If customers transition away from our network at a slower rate than we assume in our planning, this may result in us investing too little over the 2025 Plan, which may detrimentally impact the service levels we are able to provide our customers, or the availability of renewable gas. If we delay certain decisions until later planning periods, this may have a disproportionate effect on those that are unable to transition away from gas.

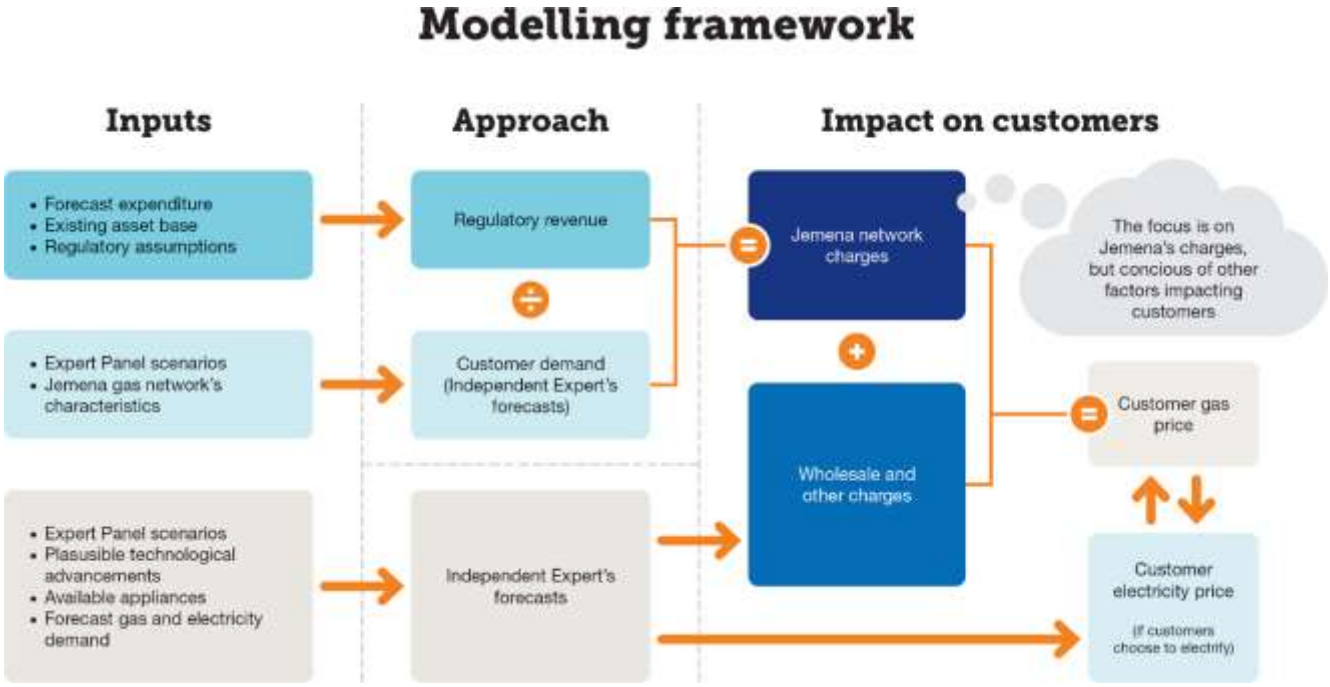
To better understand the long-term implications of the decisions that we must make during the 2025-30 period, we developed a Future of Gas economic model. The model is based on the four scenarios developed by the Expert Panel. It includes a 25-year outlook, from 2026 to 2050, and compares how each initiative performs under each scenario. By assessing how each initiative performs under different scenarios, we are able to make more informed decisions taking into account the long-term impacts on our customers and the asset stranding risk of our network.

The model uses the AER's standard building block cost framework and compares the end-customer gas prices (measured as the total retail bill) with the cost of electrification (electricity price and the additional cost to electrify) over the 25-year outlook. Overall, when the cost of electrification falls below the cost of gas, customers are more likely to switch to electric appliances. This would result in fewer customers over which to recover our costs, which would drive an increase in gas prices. The increase in gas prices would in turn drive further customers away from our network, and result in the rapid decline of our customer base. In our analysis, we use this price comparison between electricity and gas to understand the risk of asset stranding we face in the context of the energy transition to net zero.

Our network charges make up around 36% of a residential customer's total bill. To assess customer impacts, we engaged Blunomy to estimate the non-network components of customers' gas prices (i.e. wholesale, transmission and retail prices)[38] and the equivalent price of electrification for customers opting to switch to electricity[39]. Blunomy forecasted customer demand for each plausible scenario and accounted for the specific characteristics of our gas network, as well as the composition of possible renewable gas blends in our network.

We developed asset investment plans and costs based on Blunomy's demand forecast for each scenario. These, along with the demand forecasts, were incorporated into the Future of Gas model to derive the regulatory revenue forecasts and price impacts from 2026 to 2050.

Figure 4.1: The Future of Gas modelling framework



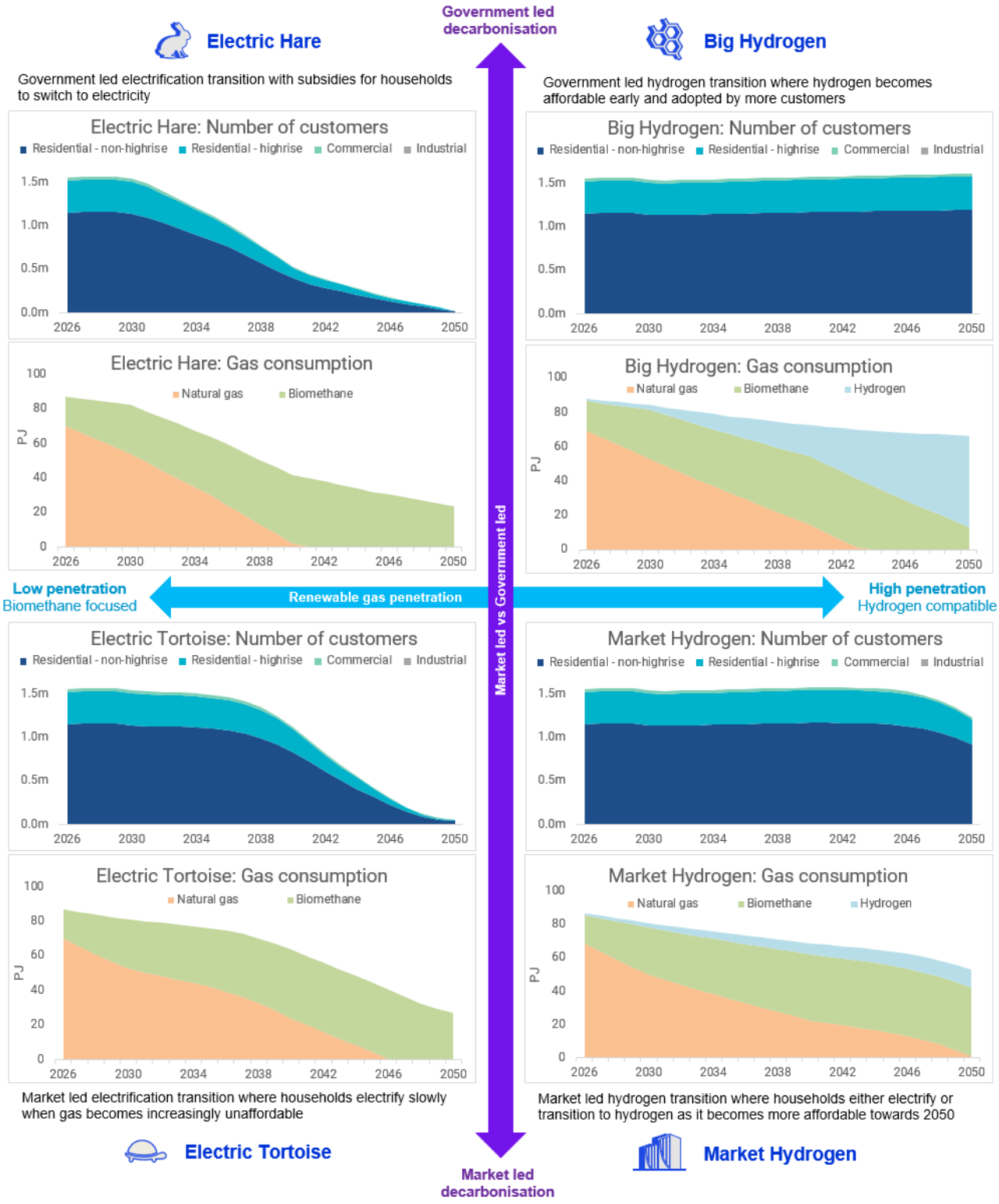
4.3.2 Long term demand outlook

Blunomy projected the gas demand in our network from 2026 to 2050 for the four plausible future scenarios. The projections include customer numbers in each segment (i.e. residential, commercial and industrial) and the gas consumption by the type of gas (i.e. natural gas, biomethane, and hydrogen) expected to be available at the time. The results are depicted in Figure 4.2.

38 The wholesale gas price considers AEMO's forecasts, the Australian Hydrogen Market Study report, and Blunomy's biogas studies.

39 The price of electrification considers the annualised cost of electric appliances versus gas and the ongoing electricity costs.

Figure 4.2: Projected customer numbers and gas consumption under the Expert Panel scenarios

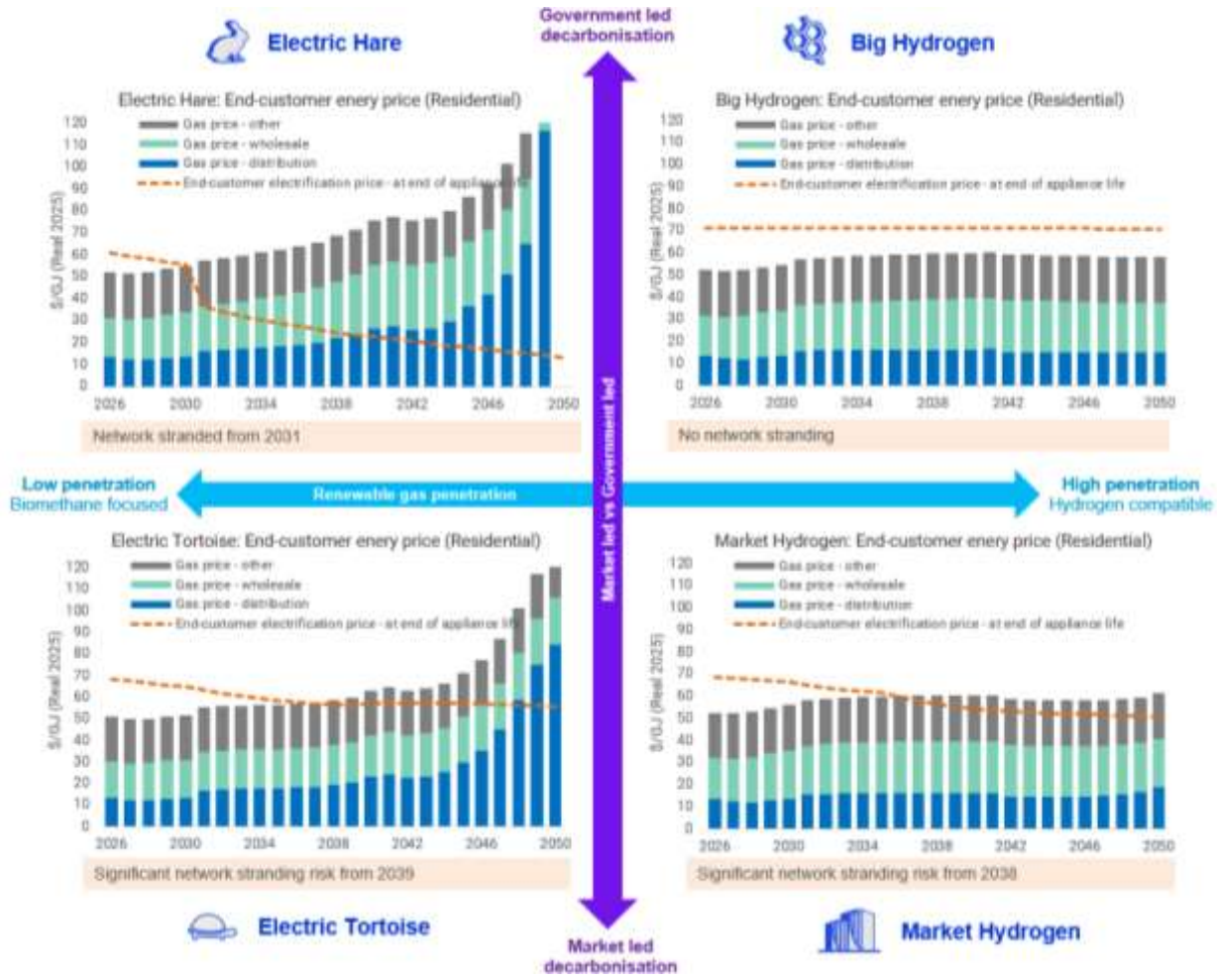


Blunomy's projections highlighted varying paths of future gas consumption for the four scenarios, aligning to the drivers outlined by the Expert Panel, being the potential uptake and penetration of renewable gases versus the extent of government-directed or market-led progress to decarbonisation.

4.3.3 Impact on customers

The Future of Gas model derives the average network bill customers would pay over the 2026-50 forecast period by combining the projected demand outlook with the building block revenue required to maintain and operate our network. The model then converts the network bill into a $/GJ charge and adds other key gas price components (i.e. wholesale, transmission, and retail) to derive the end-customer gas price. This price is then compared to the equivalent price of electrification for customers opting to switch to electricity, as shown in Figure 4.3.

Figure 4.3: End-customer energy prices for residential customers under the Expert Panel scenarios



The Future of Gas model has enabled us to assess the scenarios to observe how price stability, affordability and equity outcomes can transition over the forecast period. Key observations for each scenario include:

- Under the Electric Hare and Electric Tortoise scenarios there is a significant increase in the network gas bill as more customers disconnect from the network. With a diminishing customer base, the costs of maintaining the gas network are shared among fewer customers, leading to a substantial rise in customer bills towards the end of the forecasting period. Customers remaining on the gas network may be constrained with affordability challenges associated with costs required to retrofit their property and purchase new electric appliances. Other customers might be restricted in their ability to electrify, for example renters, or residential apartment blocks that share centralised gas hot water heating.
- In the Electric Hare scenario, gas remains competitive until 2030. Beyond that, the cost to electrify homes significantly reduces due to assumed government subsidies that contribute to the purchase of electric appliances. The customer base starts to decrease significantly driving up gas prices for customers remaining on the gas network. This can lead to asset stranding and intergenerational equity issues.
- In the Electric Tortoise scenario, gas loses competitiveness from 2039 as electrification costs continue to decline gradually. This means more

customers switch to electricity when replacing household appliances leaving customers who find it harder to transition to electrification experiencing an increase in gas prices. Like the Electric Hare scenario this can result in asset stranding and intergenerational equity issues.

- Under the two hydrogen scenarios - Market Hydrogen and Big Hydrogen - gas network bills remain relatively stable over time due to the retention of a larger customer base. The gas network bill for Market Hydrogen shows a slight upward trend from 2046 onward, with some customers reverting to electricity when an increase in the hydrogen blend requires upgrades to household gas appliances.
- Under the Big Hydrogen scenario, the viability of renewable gas keeps gas prices lower compared to electricity which in turn retains a higher number of customers. The gas network remains viable with lower asset stranding risks and overcomes intergenerational equity concerns by ensuring a more equitable recovery of our assets.

Overall, in three out of the four scenarios, the price of electrification becomes lower than the gas price at some point before 2040, implying that customers are more likely to electrify in the longer term. This introduces substantial asset stranding risk for our network, which if not properly mitigated, will discourage further investments necessary for the network's safe and reliable operation, limit choice of fuel and flexibility for customers who remain on the gas network, and create intergenerational equity issues associated with the inequitable recovery of our asset base.

4.4 Our strategic response

Using the Future of Gas model we have been able to examine each of the initiatives discussed in Chapter 3 to inform Customer Forum deliberations. While some of these initiatives place an upward pressure on customer's bills in the 2025-30 period, they will help provide greater stability to prices over the longer term. Most customers and stakeholders we spoke to recognise the need for action now to meet the challenges ahead, and to support the transition to net zero emissions by 2050.

The Future of Gas model has shown that the earlier we start to address the risks presented by the energy transition, the smoother the pathway to net zero will be. The AER has made similar observations, noting that the longer the time we have to make adjustments (for example, by accelerating deprecation) the smoother the price impacts will be.[40]

Throughout our Gas Networks 2050 engagement program, customers and stakeholders have empathised the need for fairness across generations when considering the long-term impact of our decisions in meeting the challenges associated with the energy transition. To avoid the risk of adverse customer outcomes resulting from declining demand, it is prudent to act now, and implement a suite of initiatives that can minimise bill impacts over the longer term and address intergenerational equity issues.

In formulating the strategic initiatives included in our 2025 Plan, we assessed how they performed across the four scenarios and how they interact together. These initiatives are not mutually exclusive and in some cases are complementary, which has been an important consideration to ensure we have taken a balanced approach when developing our 2025 Plan.

The first of these initiatives is accelerated depreciation. The amount of accelerated depreciation we propose in Chapter 7, and further explained in *JGN – Att 7.3 – Depreciation Approach*, is far less than what would be required if we were planning for a future in which our network had no role to play in a decarbonised energy sector. Indeed, under all of the four plausible future scenarios developed by the Expert Panel, our network will continue to play a role beyond 2050. We consider that our accelerated depreciation proposal is measured and will provide options and flexibility to us and our customers, while also reducing the risks that will arise if there is a decline in demand (for example, if the Electric Tortoise scenario is representative of the future).

Importantly, accelerated depreciation, avoids the potential for any inequitable capital recovery of our assets and ensures more stable prices in the future by starting to reduce the amount of our asset base that must be recovered in future periods.

40 AER, 2022, Regulating Gas Pipelines under Uncertainty, page 44.

The second initiative we propose is to invest in renewable gas connections which forms a key aspect to our emissions reduction program[41]. Supporting renewable gas connections from biomethane suppliers means that customers can access renewable gas sooner, which also provides greater energy security from fuel diversification. As the supply of renewable gas grows, this will help to lower the risk of asset stranding. In addition, we will be able to retain a larger customer base, in turn placing a downward pressure on prices for those remaining connected to our network. Renewable gas can also reduce overall carbon emissions across the gas supply chain, which is consistent with the National Gas Objective. Chapter 5 and *JGN – Att 5.1 – Capital expenditure* provides an overview of our proposed renewable gas investments.

The third initiative we propose is to change our asset management approach, by taking a more targeted approach to our mains replacement program. Where possible, we have sought to reduce our capital investments, to minimise the growth in our asset base.

In developing our capital program, we have explored opportunities to defer investment and make trade-offs that slow the growth in our asset base. By using digital tools to better understand the condition of our assets we can prioritise which assets need replacement and which assets we can work harder through more maintenance. Through this approach we can reduce main replacements expenditure over the 2025-30 period without compromising on safety and network reliability. Replacing assets in a targeted manner reduces our capex and growth of our regulatory asset base. This in turn can reduce our stranding asset risk for new investments.

The fourth initiative involves making changes to our connections policy so that more customers are required to make an up-front contribution if they wish to connect to our network. This change will help to reduce the growth in our asset base, and lower asset stranding risk with minimal impact on customer prices. To support this initiative, we have proposed updates to our Model Standing Offer for basic connections.[42]

Figure 4.4: 2025 Plan initiatives

Focus area	Initiative		Customer values	For further information see
Inter-generational equity	How we manage our assets	• Our expenditure forecasts include investment in new technologies that will help us to reduce emissions and allow us to invest in our assets in a more targeted manner.	Reliability and safety	Chapter 5
	A new approach to connections	• We will make changes to our connections policy so that more customers to make an upfront contribution to connect to our network.	Fairness	Chapter 5
The transition to net zero	Accelerated depreciation	• To ensure fair recovery of costs from our customers across generations, we propose to speed up recovery by $300 million.	Fairness Affordability	Chapter 7
	Supporting renewable gas connections	• We propose to support connections to eight biomethane projects.	Fairness Affordability Access to the gas network (choice) Environment	Chapter 5
Pricing for the future	Simplicity, cost reflectivity, and risk sharing	• We are proposing to remove the distinction between country and coastal customers; differentiate between large and small customers; and reduce the number of tariff blocks from six to four. • We are proposing to move away from a price cap tariff variation mechanism to a hybrid mechanism. This enables more stable pricing and sharing of volume risks between us and customers. • We are providing large customers on Chargeable Demand (CD) the opportunity to reset CD at the start of the 2025 Plan period.	Fairness	Chapter 10

41 See *JGN – Att 4.1 – Emissions reduction program*.

42 In May 2024, we submitted to the AER for its review proposed revisions to JGN's Model Standing Offer. The revisions to the Model Standing Offer reflect changes to JGN's connection policy so that fewer customers qualify for a free connection.

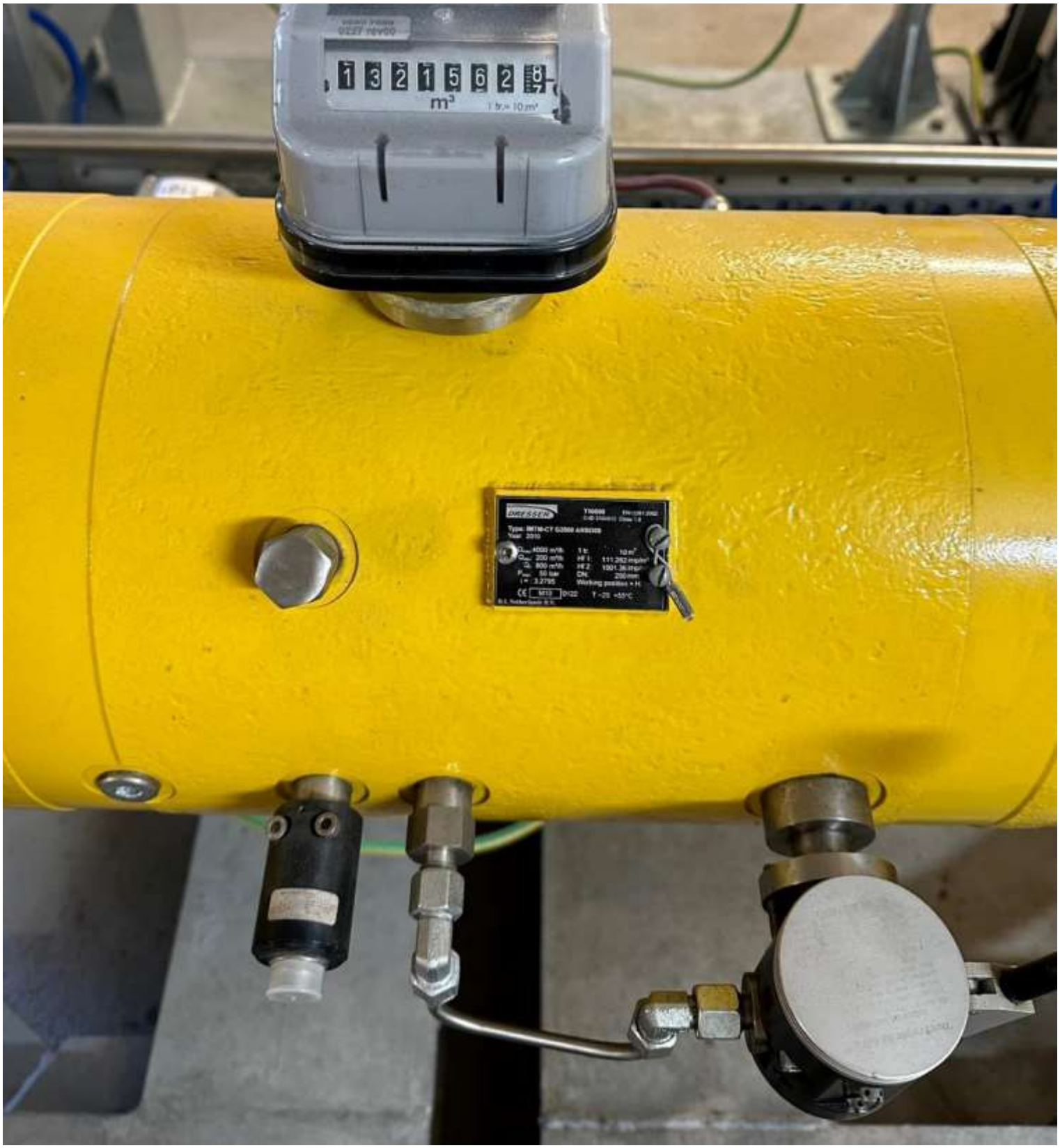
We are also making changes to our tariff structures so they can be more adaptable and ensure fairness in the way we charge for the provision of our gas network services. These changes, discussed in chapter 10, will simplify our tariff structures by removing the differentiation between country and coastal customers and reduce the number of tariff blocks in our volume market, whilst improving cost reflectivity. We are also proposing to move away from a price cap tariff variation mechanism for our Transportation RS which sets the way we adjust prices annually over the 2025-30 period, to a hybrid mechanism. This proposal is supported by our customers and will share volume risks between us and customers. It also addresses the AER's concerns around gas networks earning higher than forecast revenues by limiting revenue earnt through volume outperformance.

In developing our 2025 Plan, we have been very cognisant of the price impacts on customers both now and into the future. While some of these initiatives place an upward pressure on customers' bills in the next five-year period, they will help provide greater stability for prices over the long term and support the efficient future utilisation of our gas network.

Recognising affordability and cost of living pressures impacting customers today, we have also sought to carefully balance the need to take action now against the short-term price impacts of our plans. We believe that our 2025 Plan, which has been shaped by the feedback of our customers, reflects a balanced approach. Our customers recognise that there is a need to act now and were not supportive of us delaying taking action.

As we learn more about the exact pathway and pace to net zero, we will revisit these initiatives and adjust our strategies accordingly in future planning periods to ensure that we continue to meet the long-term interests of our customers and support the energy transition.

5. Our planned capital investments



Highlights

- Our proposed capex for the 2025 Plan period is $833M, an 8.8% reduction from our expenditure over the current 2020-25 period. Excluding ICT costs, as some of these costs have moved to opex, the reduction in capex is 5%.
- Our plan takes into account the uncertainty around the future of gas and integrates customers' expectations throughout. This includes our plans to facilitate access to renewable gas, adopt a more targeted approach to mains rehabilitation and the changes to our connections policy.
- Despite the uncertainty we face, our 2025-30 investment drivers are clear. We will:
  1. Continue to connect customers consistent with our regulatory requirements. Due to a combination of our strategies to reduce the capital intensity of our connections and a reduced connection forecast, connections capex is expected to reduce by $193M (41%).
  2. Play our role in reducing emissions. First, we will facilitate access to renewable gas, reducing stranding risk and the size of our accelerated depreciation request. Second, we will reduce the emissions we produce in providing our services.

     While this requires $143M in expenditure (up from $39M this period), these projects will deliver $1.6BN of customer benefits (net of the investment cost we incur), primarily through reducing emissions but also by lowering the risk of gas supply shortages and improving reliability.
  3. Keep our ageing network safe and reliable. While we are forecasting an increase in our metering program this is largely due to the age profile of our meters. The remainder of our program is flat.
- We will continue to be one of the most capital efficient gas networks regulated by the AER, through discipline, best practice asset management and other strategies to constrain capex we need to incur.

5.1 Our proposed investments

As outlined in Chapter 4, worldwide energy systems are undergoing a once-in-a-generation transformation. There is growing urgency to reduce emissions which is driving global changes in how energy is produced, transported and consumed.

The Expert Panel developed four plausible future scenarios which sets our four sets of outcomes in terms of both customer numbers, volumes and the uptake of renewable gas. There is no business-as-usual scenario. All plausible future scenarios are materially different from our current and historical operating environment but demonstrate that the need to act now is imperative to support a smoother pathway to net zero.

Accordingly, our investment program for 2025-30 and beyond will not look like the past. Despite this uncertainty, there is clarity in the investment drivers and capex for the 2025-30 period.

First, we need to continue to connect customers and provide access to our network, consistent with regulatory obligations and customer expectations. We are forecasting to connect 45% less customers over the 2025-30 period, primarily due to decarbonisation of the electricity system, policy changes and shifts in consumer preferences.

Second, we will need to play our role in the achievement of the NSW and Australian governments emission reduction targets, consistent with the amended National Gas Objective. We will do this by enabling access to renewable gas (facilitating reductions in customer emissions) and reducing fugitive emissions from our network activities.

Notably, decarbonisation has the twin effects of reducing connection capex as well as driving increased investment to reduce emissions.

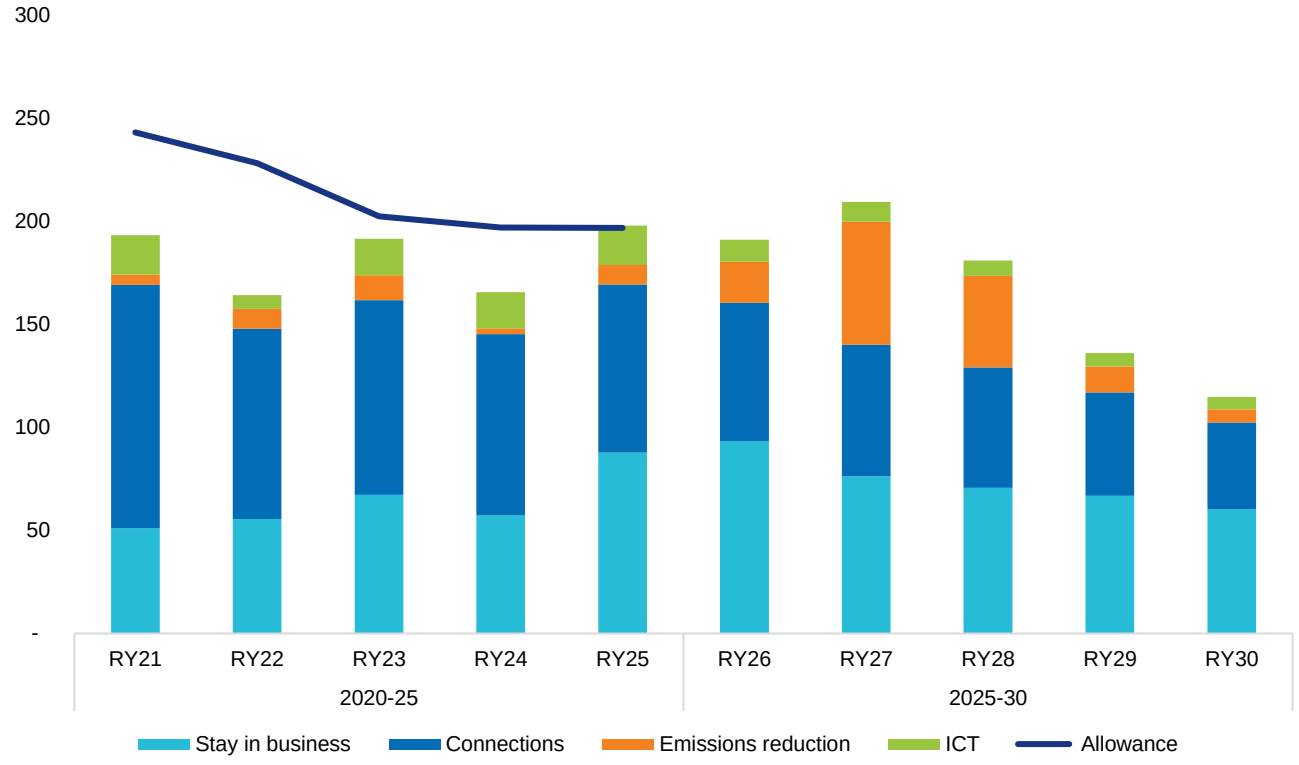
Third, we need to 'stay in business' by keeping our network safe and reliable. Despite the long-term uncertainty around our role, our network will continue to grow (in terms of assets in the ground), while the plausible future scenarios indicate that customer numbers are unlikely to materially fall before 2030. Our ageing network needs to be kept safe and reliable, as long as our customers continue using gas.

Once we exclude ICT given the change in accounting treatment (discussed in Chapter 6), our overall capex program is $40M (5%) lower compared to 2020-25 capex, which in turn is lower than the current period allowance. This is shown in Table 5.1 and Figure 5.1.

Table 5.1: Capex over time by category ($2025, millions)

	2020-25		2025-30
Category	**Allowance**	**Actual and forecast**	**2025 Plan**
Connections	524.0	474.3	281.8
Reducing emissions: Renewable gas facilitation	-	5.9	83.4
Reducing emissions: Reducing our emissions	40.5	33.3	59.5
Stay in business: Metering	151.4	112.3	169.4
Stay in business: Excluding Metering	220.8	206.7	198.0
ICT	124.6	80.1	40.3
Total	**1,061.2**	**912.7**	**832.5**
Total (Excluding ICT)	**936.6**	**832.6**	**792.1**

Figure 5.1: 2020-25 and 2025-30 capex ($2025, millions)



5.2 Our investment approach

5.2.1 Reducing capex to manage uncertainty

While natural gas use is expected to decline in the period to 2050, we expect that the availability of renewable gas will mitigate the decline of customers and gas consumption on our network.

However, as the four plausible future scenarios developed by the Expert Panel show, there is considerable uncertainty beyond 2030. If our customer numbers and volumes significantly decline, we will likely see material increases in customer prices.

Given this uncertainty it is imperative that we keep capex to a minimum over the 2025-30 period. We want to avoid building infrastructure which might not be required beyond 2050 and to limit price increases.

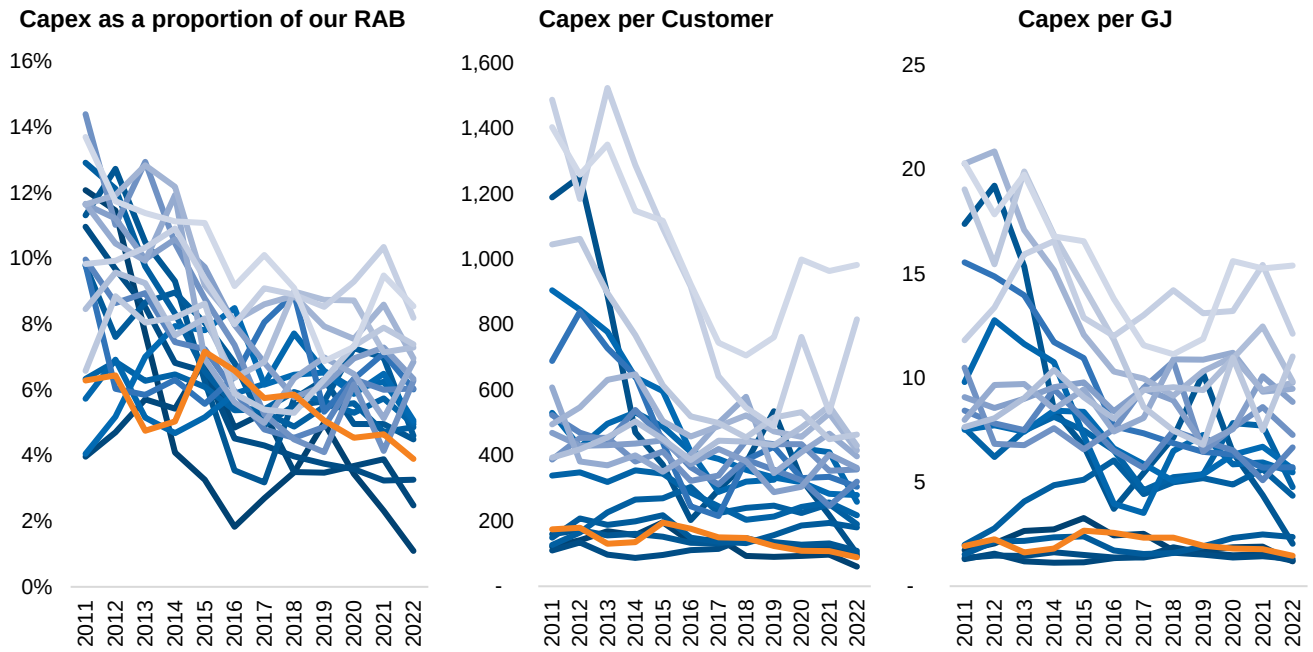
In a way this is not new. As a provider of a fuel of choice, we have always been conscious of the price implications of our expenditure. Given the risks around the future of gas, over the last 10 years we have implemented a series of measures to constrain capex.

Our effectiveness in constraining capex is illustrated by our capex relative to the other 20 energy networks regulated by the AER. As shown in Figure 5.2, these metrics indicate that JGN (orange line) has one of the lowest capital intensities of all businesses regulated by the AER. This is consistent with CEG's benchmarking results which found that JGN consistently ranks in the top two or three of gas distribution businesses benchmarked.[43]

We have been able to constrain capex through discipline, best practice asset management strategies and targeted risk-based approaches to extending the life of our existing assets.

Our proposal reflects a continuation of our existing strategies, integrating cost reductions we have already achieved as well as the integration of additional efficiencies we plan to deliver over the 2025-30 period.

Figure 5.2: AER regulated energy network capex ($2022, Millions), JGN in orange



43 *JGN – Att 6.4 – CEG Relative efficiency and forecast productivity growth of JGN.*

5.2.2 Integrating customer preferences

In developing our capex program, we consulted with our customers on a number of key initiatives, in the context of an uncertain future.

Key initiatives to reduce our capex, as discussed in chapter 4, include:

- Changes to our connection policy to reduce the number of connections we provide free of charge.
- Using technology to take a more targeted approach to our asset replacements.

Our customers also told us that they support initiatives to:

- Facilitate access to renewable gas to enable end-users to reduce emissions.
- Reduce emissions on our network (rather than relying on offsets).
- The roll-out of digital metering where it is difficult to access and read meters.

Customers also told us that they did not support an initiative to improve digital customer experience services.

These preferences are discussed in Chapter 3 and have been reflected in our 2025 Plan and associated attachments.

5.2.3 Changes since our Draft 2025 Plan

Since the publication of our Draft 2025 Plan, we have continued to refine and update our capex forecast. Key changes include:

- 65% reduction in ICT capex, as costs were moved to opex due to a change in accounting treatment.
- 14% reduction to Stay in business (excluding metering) as a result of additional review, challenge and prioritisation (following feedback from the AER as part of the Early Signal Pathway).

  For example, we removed the forecast Kotara mains augmentation and Auburn mains rehabilitation projects, on the basis that we will be able to use our improved ICT capabilities to avoid these costs.
- Updated timing of our renewable gas facilitation costs shifting some costs from 2020-25 to the 2025-30 period.
- Excluding ICT costs, our capex program is 3.5% lower than was outlined in the Draft 2025 Plan

5.3 Connecting customers to our network

Connecting new customers to our network requires us to extend our mains and install new services and gas meters.

Over the past decade, our network has undergone unprecedented growth. Connections capex has made up the largest part of our capital program. The increase in our customer base has allowed us to spread our largely fixed costs over more customers, resulting in lower network bills. It has also meant that people living in new homes can enjoy the benefits of gas.

Connections capex is a customer-initiated program. As long as the regulatory framework imposes obligations on us to connect new customers, we will continue to incur connection expenditure.

We engaged Core Energy & Resources (Core) to develop an independent forecast of the number of new connections.

Core forecasts that we will connect approximately 70,000 new connections, which is lower than the 125,000 we expect to connect over the current 2020-25 period as shown in Figure 5.3.

This reduction is driven by:

- Recent changes to building standards which encourage new households to use electric appliances, rather than gas appliances.
- Proposed changes to our connections policy (our Model Standing Offer), which will require more customers to make an upfront contribution in order to connect to our network.[44]

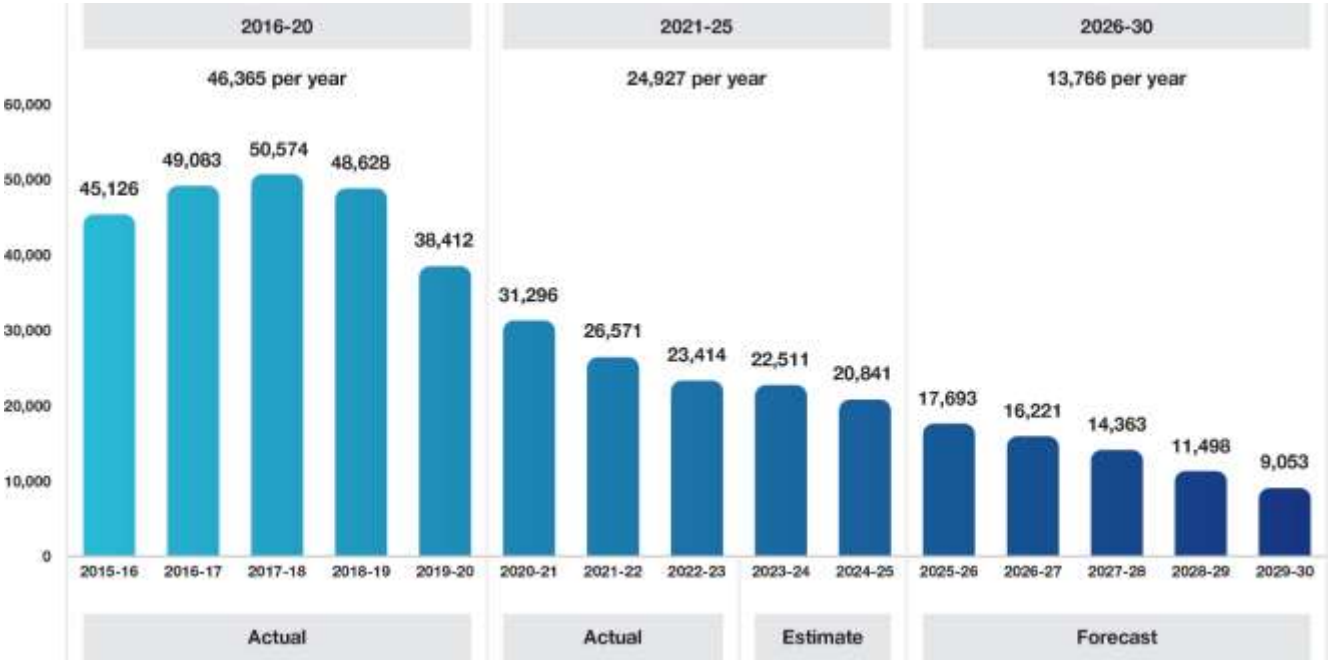
44 In May 2024, we submitted to the AER for its review proposed revisions to JGN's Model Standing Offer. The revisions to the Model Standing Offer reflect changes to JGN's connection policy so that fewer customers qualify for a free connection.

Along with the reduction in connection numbers, we have introduced a range of initiatives which seek to reduce the capital intensity of new connections. Our forecast includes:

- $32.1M reduction due to our existing strategy to offer apartment buildings a single connection (rather than individually metering each dwelling).
- $10.3M reduction in net capex as a result of our changes to our Model Standing Offer.
- $65.2M of efficiencies by forecasting unit rates using a 4-year average of historical costs, with no adjustment for the significant post COVID-19 cost pressures felt across the energy and civil construction sectors.

Given the reduction in connection numbers, together with the efficiencies built into our forecast, we are forecasting connection capex to reduce by 41% to $281.8M over the 2025-30 period, more than the expected drop in dwellings connected.

Figure 5.3: Historical and forecast new connection volumes



Proposed changes to our Model Standing Offer (MSO)

The regulatory framework within which we operate is an open access regime. That means that we have obligations to connect customers wanting to access our network (provided that it is safe to do so). We are required to publish an MSO, which sets out the terms and conditions for the establishment of basic residential connections to our gas distribution network.

If a customer decides that they wish to connect to our network, our obligations within the NGR specify that we are only able to charge an upfront contribution if the cost to connect the customer exceeds the revenue we will earn over the life of the connection.

At present, our MSO provides four basic connections services free of charge. Basic connections are those that satisfy specific requirements and do not require significant augmentation of our network. Approximately 70% of new connections are basic connections.

As part of our drive to reduce our capex and minimise the growth of our asset base, we engaged our customers to understand whether they support us making changes to our MSO to require more customers to make an upfront contribution to connect to our network. Asking new customers to make an upfront payment is likely to mean that some customers choose not to connect to our network.

Our Advisory Board was supportive of us testing this initiative with our customers, noting that it would help to minimise the growth in our asset base.

We engaged a number of stakeholders as well as our Customer Forum. We heard a mixture of views—while most were in support, there was also some circumspection.

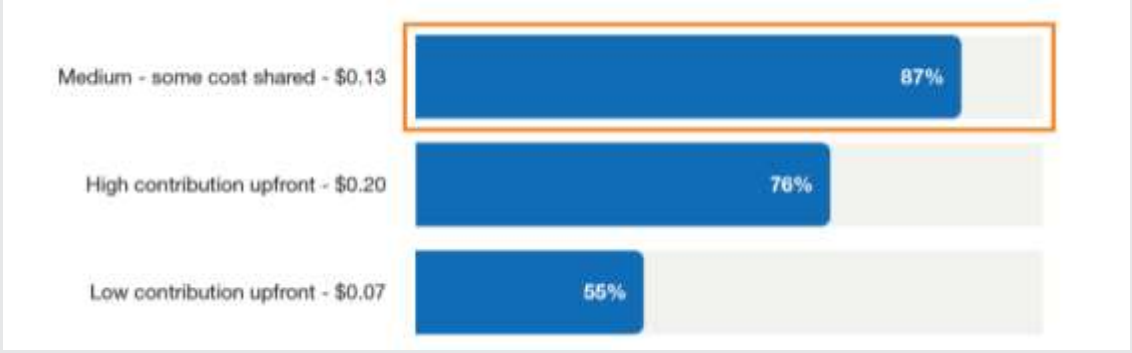
Customers from our Customer Forum supported charging customers more to connect to our network; however, they were concerned that if the charge was too high, some customers might not be able to afford to connect. They understood that more customers connecting to our network means a greater customer base over which to spread the recovery of our largely fixed costs.

We tested three options with customers.

- Low contribution – a large portion of costs of each new connection is shared by the broader customer base
- Medium contribution – some costs are shared across customers
- High contribution – a small portion of costs of each new connection is shared by the customer base.

In the final voting (at Customer Forum 7), customers expressed a preference for the 'medium' option (see Figure 5.4 below).

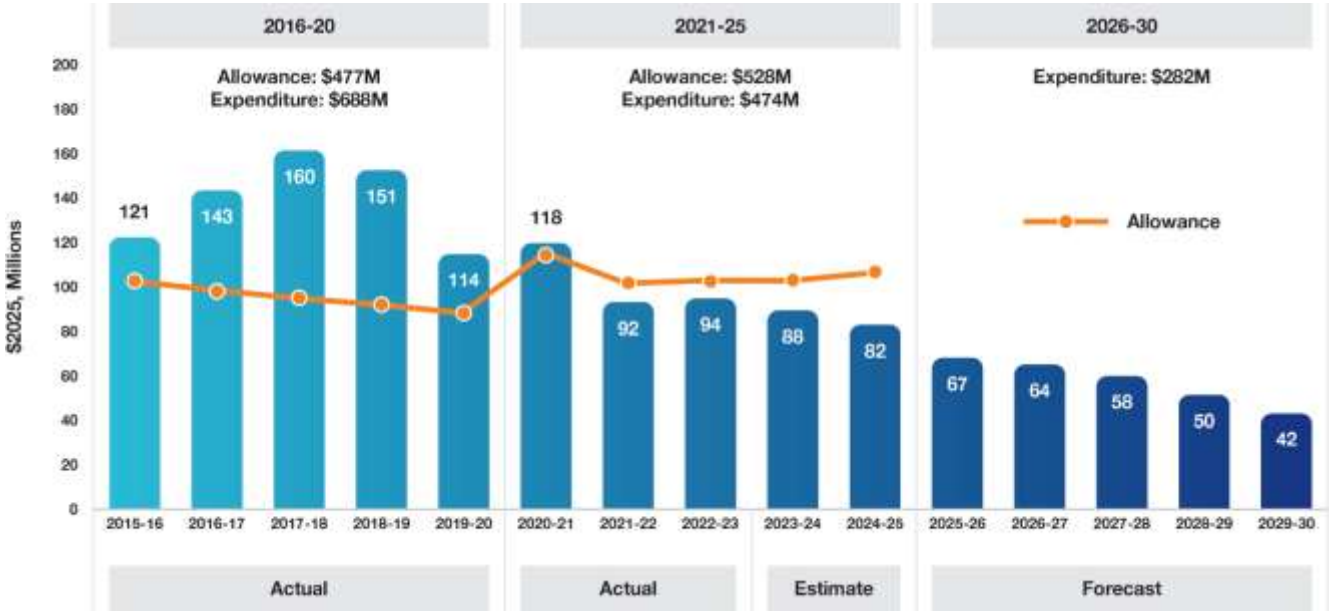
Figure 5.4: September 2023 Customer Forum Voting: a new approach to residential connections



In line with the feedback we have received from customers, in May 2024 we submitted to the AER for its approval, proposed changes to our MSO. We will adopt a 'moderate' approach which means in some cases a proportion of the costs to connect a new customer may still be shared by the broader customer base.

The changes to our MSO have been factored into our forecast of new customer numbers. Even with the changes to our MSO, it is likely that some customers will still qualify for a free connection (in accordance with our obligations in the NGR).

Figure 5.5: Connections capex ($2025, millions)



We provide more detail on connections capex in section 3 of *JGN – Att 5.1 - Capital expenditure*.

5.4 Facilitating reductions in customer emissions

Our plan to reduce emissions

As outlined in Chapter 4, our approach to reducing emissions, to support the achievement of the NSW and Australian government emissions reduction targets, has three components. The first is facilitating reductions in customer emissions by enabling access to renewable gas.

The second component, moving to direct emissions measurement (using Picarro technology), requires opex and is discussed in Chapter 6.

The third component, undertaking no-regrets targeted actions to reduce our emissions is outlined in the next section of this chapter.

The renewable gas opportunity

Renewable gases are low emission gases which produce no, or a minimal amount of, net greenhouse gas emissions when they are burnt. In the context of gas networks, renewable gases typically refer to:

- **Biomethane** – gas that is derived from plant and animal by-products, agriculture, farming, forestry and human waste. Methane is captured, optimised and used, instead of being naturally released into the atmosphere from its original waste source, so there are no additional emissions. A key advantage of biomethane is interchangeable with natural gas and does not require significant changes to gas infrastructure or replacement of customer appliances.
- **Renewable hydrogen** – gas produced by separating hydrogen from water which is powered by electricity from renewable sources. When burnt, hydrogen produces no carbon emissions.

Renewable gases can displace natural gas when injected into the gas network, resulting in a reduction in overall carbon emissions across the supply chain.

An alternative source of gas into the system can also enhance the gas network's resilience against potential gas supply shortages, ensuring a reliable supply. AEMO forecasts a risk of supply shortfalls in the near term—adding biomethane to our network could help alleviate this concern.

While renewable gases are still in their infancy in Australia, other countries are already making significant investments in renewable gases for use within gas networks. For example, biomethane is used widely in many countries, particularly in Europe. Denmark is aiming to replace natural gas entirely with biomethane by 2030, a significant leap from its already 25% share in 2021.[45]

Recognising the potential of renewable gases to help contribute to lowering Australia's greenhouse emissions, policymakers have made a number of important changes to the regulatory framework in recent months to accommodate the introduction of renewable gas into gas networks. These include:

- The introduction of a new **emissions reduction objective within the National Gas Objective** to recognise that the long-term interest of consumers now extends to the achievement of Commonwealth, State and Territory targets for reducing Australian's greenhouse gas emissions, or that are likely to contribute to reducing Australia's greenhouse gas emissions.
- Changes to the NGL and NGR to **recognise biomethane and hydrogen blends**.

Jemena has also made investments to support the development of the renewable gas industry, and renewable gas is already being distributed to customers across our NSW gas distribution network.

45 European Commission 2021, *Biomethane Fiche – Denmark (2021)*. Available here.

Interconnection of the Malabar Biomethane Injection Plant into JGN's network

The Malabar Biomethane Injection Plant is the first of its kind in Australia. In partnership with Sydney Water, the Malabar Biomethane Facility upgrades biogas produced from organic waste at the Malabar Water Resource Recovery Facility so that it is suitable for injection into JGN's gas network. The Malabar Biomethane Facility project is jointly funded by Jemena Malabar Pipeline Pty Ltd (JMP) and the Australian Renewable Energy Agency (ARENA) which is contributing up to $5.9M in grant funding. The facility has an initial capacity of 95 terajoules (TJ) of renewable gas per annum. This is about equivalent to the average annual gas usage of 6,300 NSW homes.

During the current plan period, JGN entered into an interconnection agreement with JMP to enable this renewable gas to be injected into the network.

Western Sydney Green Hydrogen Hub

The Western Sydney Green Hydrogen Hub is a $15M project and renewable gas trial, co-funded by JGN and ARENA. The Western Sydney Green Hydrogen Hub demonstrates the effectiveness of hydrogen in helping to achieve emissions reduction targets in NSW.

Hydrogen is produced by a 500kW on-site electrolyser, which is powered by the electricity network. Once injected into the existing gas network, and blended with natural gas, the hydrogen can be used by homes and businesses in the surrounding areas of Western Sydney.

This trial will provide important information on the safety and reliability of Hydrogen blends in gas networks, which was identified by the Customer Forum (recommendation 2) as an important priority. In addition, Jemena participates in several industry working groups that are focussed on developing industry standards for the use of Hydrogen within gas networks. This includes industry led research forums reviewing the safety and integrity of existing and new gas pipeline infrastructure for the transport of renewable gases.

While we expect many household customers to electrify their energy loads over time, some customers will be unable to substitute gas for electricity. This includes large industrial and commercial customers that use gas as a feedstock to their processes, or who require a very high heating load which electricity cannot provide.

It also includes some residential customers where the higher upfront cost of electrification may pose particular challenges, for example customers experiencing vulnerability or living in rented homes.

There may also be physical constraints that make it hard to transition away from gas, including in high rise buildings that do not have sufficient space to accommodate electric heat pumps. As our energy system decarbonises, these customers will need to find alternative sources of energy. In addition, some customers told us that they enjoy the amenity of gas and may choose to remain connected to our network.

Renewable gases can play an important role in these situations by providing our customers with a cost-effective decarbonisation solution, in addition to electrification, while maintaining energy choice.

Biomethane is a cost-effective way to reduce carbon emissions, ready for use now and is capable of helping NSW reach its net zero emissions goal. As biomethane is a renewable form of methane, there is no need to modify our network, customer homes or industrial processes.

Whilst hydrogen is not yet commercially competitive, significant investments are currently being made in export scale projects, hydrogen technology, steel and other manufacturing, and transport solutions that have the potential to increase its competitiveness and enable it to become a viable renewable gas option in the future. We also note that the Federal Government's $2 billion expansion in May 2024 to the Hydrogen Headstart program may provide more opportunities for hydrogen projects to become commercial to connect hydrogen supplies to our network. Should any such developments arise between now and the end of 2024 we will provide details of them in our response to the AER's draft decision on our 2025 Plan

A 2021 report from ARENA[46] notes that NSW could potentially generate 553 PJ of biomethane annually, mostly from organic wastes. This amount is far greater than the energy needs of our customers and could replace natural gas. Ultimately though, the feasibility of using this resource depends on factors like overall cost and other potential uses for biomethane, such as energy production.

Recognising the potential for biomethane to displace natural gas in our network, we have been approached by numerous parties that are currently planning to develop and construct biomethane production facilities at various locations across our NSW distribution network. The recent changes to the regulatory framework means that we must allow these facilities to connect into our network provided that it is technically feasible and safe to do so.

In some instances, we will need to make investments in our network to enable the connection of these sources of renewable gas. This investment is required to ensure that it is economically feasible for these facilities to connect into our network. If we don't make these investments, these parties are unlikely to connect. This would be a missed opportunity to make renewable gas available to our customers.

To understand the economic feasibility of our investments, we engaged Frontier Economics to assist in conducting an independent cost benefit analysis (CBA) on the proposed renewable gas connection projects. The CBA analysis for each project was primarily guided by the NGR which includes the requirement that such investments have a positive overall economic value. The analysis also considered the economic, social and environmental values that contribute to the environmental benefits of avoiding greenhouse gas emissions costs for the boarder Australian community, as required through the final National Gas Amendment Rule change.[47] Frontier Economics applied the interim Value of Emissions Reductions (VER) as set out by Energy Ministers to inform the CBA analysis.[48]

The CBA modelling calculated the benefits by determining the incremental changes in economic, social, and environmental costs for each option compared to the base case. Following best practice CBA guidelines, quantifiable benefits (including VER) that could be reasonably measured were included in the Net Present Value (NPV), while impacts that couldn't be quantified were assessed qualitatively. We also addressed the risk and uncertainty for key CBA assumptions by conducting sensitivity analysis, ensuring a robust economic assessment.

The CBA assessments identified several benefits in enabling renewable gas connections. They offer direct advantage for gas customers by helping them achieve emission reduction targets without needing to switch appliances. This not only supports environmental goals but also facilitates choice for customers. Also, renewable gas connections can make the gas supply system more resilient, addressing potential shortfalls and ensuring a reliable energy source. There are also benefits in terms of avoidable costs on the electricity infrastructure network when customers remain on gas.

The CBA for each project demonstrates a positive NPV and highlights the economic viability and broader advantages of our renewable gas projects. Overall, the projects will deliver $1,412.3M in consumer value, primarily (but not entirely) through the reduction of emissions.

Considering customer views on the energy transition and the future of gas

Our Customer Forum and key voices were very supportive of us investing in renewable gas connections. The Customer Forum highlighted biomethane as a priority and advocated for a renewable gas strategy. Biomethane, with its immediate availability and compatibility with existing infrastructure, was seen as a fair solution for current and future customers, ensuring the sustainability of the gas network. Notably, 90% of customers expressed support for adopting renewable gases, particularly biomethane.

Small businesses, heavily reliant on gas as a fuel source, showed significant interest in renewable gases, with 50% of small businesses voting to expedite renewable gas and the remaining 50% voted for a more moderate approach to investing in renewable gas. Retailers were generally supportive, seeing renewable gas as a choice for customers and recognising the need for alternative gas sources for large industrial customers with high-heat processes.

Overall, our customers were overwhelmingly supportive of the inclusion of renewable gases into the network. They see renewable gases as offering choice for customers who do not have the flexibility to electrify due to practical, technical or affordability reasons. As noted in section 3.1.8, this is also supported by the survey conducted by Redbridge where 78% of customers surveyed supported having the choice of renewable gas options as part of the energy transition.

46 https://arena.gov.au/assets/2021/11/australia-bioenergy-roadmap-report.pdf

47 On 1 February 2024, the Australian Energy Market Commission finalised new gas, electricity and retail rules to bring them in line with updated national energy objectives. The updated rules now reflect considerations for reducing Australia's greenhouse gas emissions.

48 https://www.aemc.gov.au/sites/default/files/2024-04/MCE%20statement%20on%20interim%20VER.pdf

Why we are facilitating renewable gas

Our proposal includes expenditure to build mains to connect 6.7 PJs of local renewable gas to our network, decarbonising 8.3% of the energy we transport by 2030.

It is prudent to include this expenditure facilitating renewable gas because it:

- is supported by our customers.
- reduces gas network stranding asset risk and, in turn, constrains the level of future accelerated deprecation required, given the potential reduced opportunity to recover at least our efficient costs as the energy market transitions. Without renewable gas, our 2025 Plan would need to assume that our network has a limited role to play in a decarbonised future and propose a higher level of accelerated depreciation.
- reduces emissions consistent with the achievement of the amended National Gas Objective. It is expected to reduce emissions by 347,000 tCO2e a year by 2030 or 1% and 0.4% of the emissions reductions need to achieve the NSW and Australian government's 2030 emission reduction targets.
- provides significant customer value, as shown by Frontier Economics CBA.

We provide further details on this program of work in *JGN – Att 5.1 – Capital expenditure*, including how renewable gas provides additional benefits in terms of:

- unlocking a new gas decarbonisation pathway for our customers.
- ensuring hard to abate manufacturing sectors can reduce actual emissions via renewable gas, in addition to offsetting or supporting least cost emission optionality and continued economic viability.
- avoiding the significant whole of economy consequences from a higher cost electricity only pathway to net zero by supporting renewable energy choice as valued by our customers.
- avoiding placing additional cost and operational pressure on the electricity system.
- reducing the risk of and size of the impact of natural gas supply shortfalls in the gas market.

Three of the renewable connections' projects are described below.

Biomethane injection plant, Regional New South Wales (NSW)

We are working collaboratively to connect a biomethane plant to our network in an area of NSW known for its established crops, including oranges, prunes, rice, wheat, cotton and walnuts, grapes, and wine. This dynamic range of food production provides vast quantities of biowaste which makes it ideal for supporting the supply of biomethane from crop residues back into our network for local industry and community use.

Biomethane injection plant, Metropolitan Sydney

With this landfill site along one of Sydney's key growth corridors, the area produces biomethane and is close to our NSW distribution network. Biomethane will be injected back into the network from this location to service the surrounding area, which, in the future, will include hotels and other businesses and will supply a new major transport hub currently in development in addition to the greater Sydney area.

Biomethane injection plant, Metropolitan Sydney

An established landfill site located on the edge of Metropolitan Sydney already produces biomethane to power on-site generators. It is located in close proximity to our network. Biomethane will be injected back into the network to service surrounding homes and businesses.

5.5 Reducing our emissions

The third part of our plan to reduce emissions is to undertake no-regrets targeted actions to reduce our emissions.

We will do this by delivering:

- a targeted mains replacement program to address the areas of our network in the poorest condition, where a reactive repair-based approach will not be economic.
- Pressure reductions across our network to reduce the rate at which gas leaks and in turn the extent of emissions.
- The installation of catalytic heaters to reduce the amount of gas used for operational purposes.

Value of reducing fugitive emissions

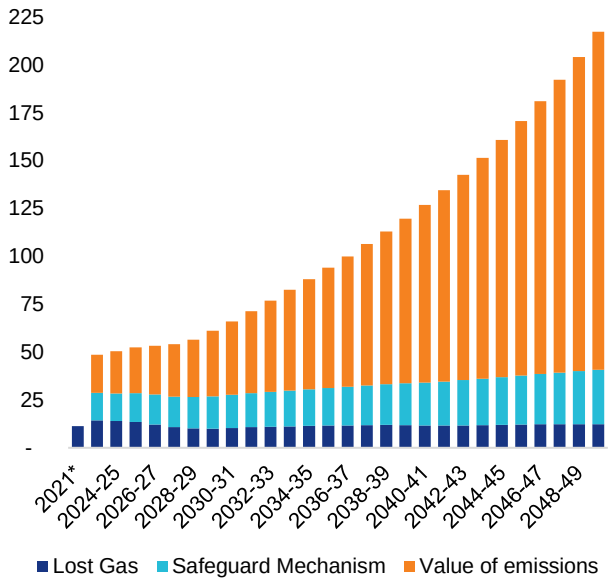
In providing pipeline services we produce around 290,000 tonnes of carbon dioxide equivalent (tCO2e) emissions. 98.7% of our emissions are due to 'fugitives' – the release of natural gas to the atmosphere from leaks and operational activities.

We have always sought to reduce the number and extent of the leaks on our network, but until recently we have only been able to quantify the cost of the lost gas and repairs. We are now able to quantify the penalties we incur under the Safeguard Mechanism[49] as well as the value of reducing emissions as set by Energy Ministers.

Figure 5.6 shows the quantified cost of releasing 1 GJ of gas into the atmosphere over time. In 2021 this only included the cost of replacing lost gas, which was about $11 (dark blue bar). In 2023-24 the cost, which now incorporates the application of the Safeguard Mechanism and the value of reducing emissions, increased to $49 – an increase of 345%.

Factoring in the value of reducing emissions changes the cost and benefit balance of projects which reduce fugitive emissions, such as mains replacement.

Figure 5.6: Cost of a 1 GJ of leakage on our network ($2025)



Customer feedback on adopting a targeted approach

During the Customer Forum deliberations, we asked participants for their views on how we should approach asset management in an uncertain future. We focussed on our mains replacement program.

We provided three options and highlighted the bill impact for both the short term (2025-2030) and long term (2031 and beyond) for each option. The options were also overlaid with the Expert Panel plausible future scenarios to give customers an indication of the trade-off decisions we can consider in terms of managing the challenges presented by the energy transition.

The options considered by the Customer Forum were:

- Maintain current approach of replacing mains across whole network sections.
- Targeted rehabilitation using emissions detection technologies to adopt a more targeted approach.
- Defer mains rehabilitation to wait for certainty about the future of gas.

It was emphasised to customers that all options would involve repairing assets when required to ensure that safety was not compromised.

49 The Safeguard Mechanism requires that we keep emissions below a baseline which reduces each year. Where emissions cannot be reduced, we must purchase Australian Carbon Credit Units (ACCUs) or Safeguard Mechanism Credits (SMCs). Further details are provided in *JGN – Att 4.1 – Emissions reduction program - 20240608*.

When asked to cast their first round of votes on their preferred option, Customer Forum participants were split between the targeted and defer options as depicted in Figure 5.7 with no participants voting to maintain our current approach.

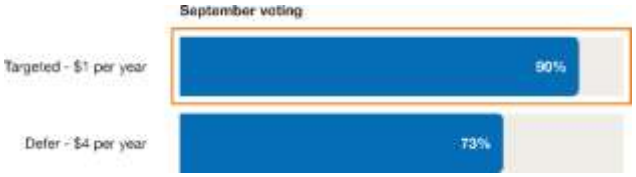
Participants appreciated the challenges we faced in the context of an uncertain future and that doing nothing was not an option they were willing to trade-off. Although customers were split, participants felt that either option was fair for customers as safety and reliability would be maintained with minimal impact to the long-term interest of customers.

Figure 5.7: Voting from July 2023 on how JGN manages assets

Following a second round of Customer Forum deliberations, when customers reconsidered the mains replacement options against the full suite of initiatives, 90% of customers voted in favour of a targeted approach[50] (see Figure 5.8).

The majority of Customer Forum participants supported the targeted approach as it falls into the 'middle ground' that supports the ongoing investment to ensure a reliable gas network while avoiding excessive works into the future.

Figure 5.8: Voting from Customer Forum in September 2023 on asset management



The shift to direct emissions

One challenge we face is that fugitive emissions are not currently measured. Emissions are reported, using a 'lower order' method that relies on generic assumptions, in line with the National Greenhouse and Energy Reporting (NGER) Scheme. The NGER Scheme is based on the historical assumption that fugitive emissions cannot be directly measured.

As outlined in Chapter 6, we will move to direct emissions measurement using Picarro technology. This will require surveying our entire network once each year (which requires more vehicles to survey our network) and moving beyond our current compliance surveys (where we survey our network on a 5-year rolling basis).

This approach will improve the data available to optimise our investment program. In particular, if leaks could be identified quickly enough it may be more economic to adopt a reactive repair approach to managing fugitive emissions. This approach is likely only to be economic for plastic mains as undertaking repairs on iron mains is much more difficult.

Moving to direct emissions would also ensure that the full emission reduction benefit is recognised in our emissions reporting.

In Customer Forum 8, in addition to reminding participants of Picarro's role in supporting a targeted approach to mains replacement, we also discussed its role in helping us identify gas leaks and in turn reduce emissions. Customer Forum participants expressed strong support for us investing in Picarro technology to enable us to reduce network emissions rather than relying on the purchase of carbon credits which we discuss in Chapters 3 and 6.

Approach

Given all of these factors, our approach to mains replacement for the 2025-30 period is to adopt a targeted approach and replace cast iron mains and unprotected steel in the poorest condition.

We will also continue our pressure reduction program where we will make a series of small investments to enable us to maintain supply while reducing the flow of gas through small leaks.

This approach is consistent with customer feedback, allows us to integrate the benefits of the shift to direct measurement while maximising emissions reductions per dollar invested.

Taking into account the value of reducing emissions, along with other factors such as reductions in maintenance costs and improved reliability, our program will deliver about $237M of value to consumers (benefits minus cost of the investments).

50 Voting percentages do not equal 100%, as customers voted on each option individually using the L-Scale (love, like, live with, lament and loathe).

5.6 Keeping our network safe, reliable and secure

Stay in business capex covers what we need to incur to continue to operate.

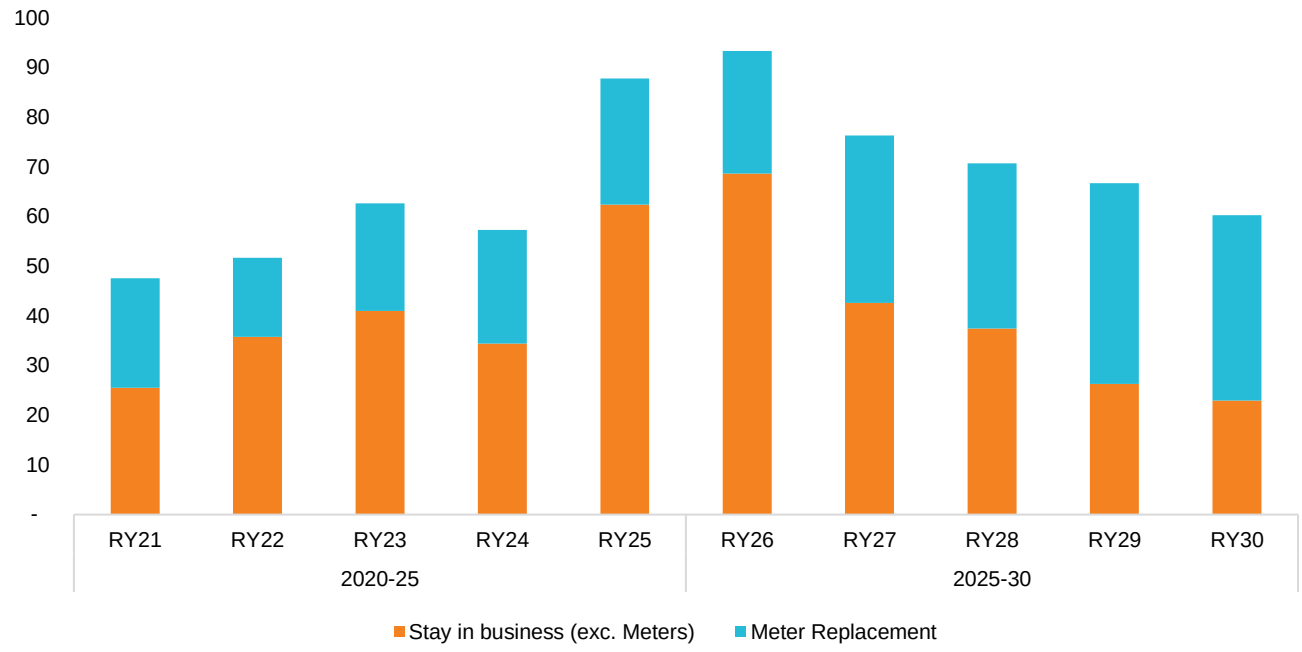
While the future role of our network is uncertain, our ageing network needs to be kept safe, reliable and secure as long as our customers continue to stay connected.

Over the 2025-30 period we will continue to replace meters to ensure that we (and retailers) accurately bill our customers and manage the safety, reliability and security of our network through a targeted risk-based asset management approach.

Overall, stay in business capex will increase, largely due to the bow-wave of meter replacements due over the 2025-30 period.

The remainder of our capex will be slightly less than in the 2020-25 period. While we will need to increase our investment to continue our programs to maintain the integrity of our high-pressure pipelines and address obsolete components of our critical facilities, this increase is offset by reductions in our augmentation and non-network categories.

Figure 5.9: Stay in business capex ($2025, millions)



Meter replacement

An essential part of the service we provide is metering each customers' gas consumption.

This ensures customers are accurately billed for their gas usage. As meters age, the internal components of meters wear out and the meters become inaccurate, or simply stop working.

Although only designed to last 15 years, we have seen remarkable performance of our residential gas meters.

We are able to extend the life of many meters by 5-years if they pass an accuracy test. We have seen some meters pass their 15, 20, 25 and now 30-year tests. Not all pass – over the 2020-25 period 9% of meter lots failed their accuracy test.

This performance has enabled us to reduce capex and in turn our customers' bills in the 2025-30 period.

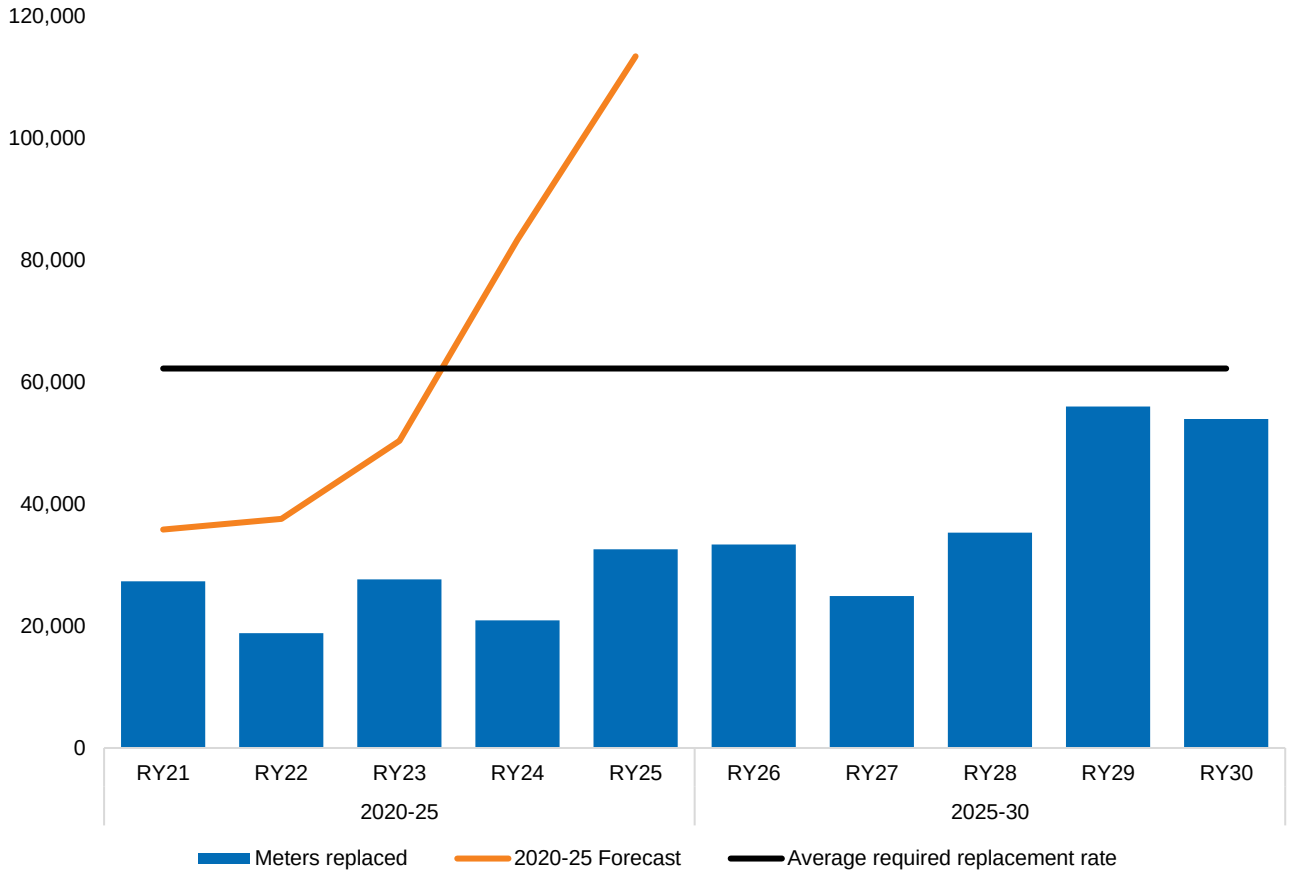
Our 2025 Plan reflects this latest performance data. We have assumed that 100% of our meters will pass their 15, 20, 25 and 30-year tests before being replaced at 35 years of age (as preliminary data indicates that meters fail at higher rates after 30 years). This is an optimistic forecast given general industry practice assumes meters last 25 years at most. We have also made no allowance for the meter lots which fail each accuracy test.

Even with these optimistic forecasting assumptions, metering capex will need to increase in the 2025-30 period. This is because the age profile of our meters will mean that a 60% increase in our planned replacement program is required.

Despite this increase, our forecast remains 35% lower than the long-term average required replacement rate (total meters divided by their expected life) for our meter fleet, as shown in Figure 5.10.

Our forecast also includes $17M of efficiencies by forecasting unit rates using a 4-year average of historical costs, with no adjustment for the significant post COVID-19 cost pressures felt across the energy and civil construction sectors.

Figure 5.10: Planned meter replacement forecast versus long-term require replacement rate



Moving towards digital meters

We currently have a large number of 'chronic no access' meters which we cannot regularly read, generally as they are located in an inaccessible area of a customer's home or premise. In these circumstances we estimate customers' consumption.

On numerous occasions throughout our engagement with customers and retailers, we heard that estimated meter reads are an ongoing source of frustration, particularly when customers receive repeated estimated meter reads or where a customer experiences bill shock (generally once an actual read occurs).

We have introduced a range of strategies to read these meters. These include operational changes (such as reading meters at different times of the day), deploying wireless Radio Frequency technology (to avoid the need to enter individual dwellings) and a mobile self-read app (so customers can lodge their own meter readings). Despite these endeavours accessing our customers meters continues to be a challenge.

Digital meters, now standard technology in water and electricity businesses in Australia and widely adopted by other gas businesses internationally, are a solution to this long-standing problem. Replacing the most inaccessible meters with digital meters will allow us to obtain actual meter reads.

Recognising that digital meters are more expensive than traditional meters, we engaged our customers and retailers to test their support. We presented a number of investment options. These options work on a cumulative basis as follows:

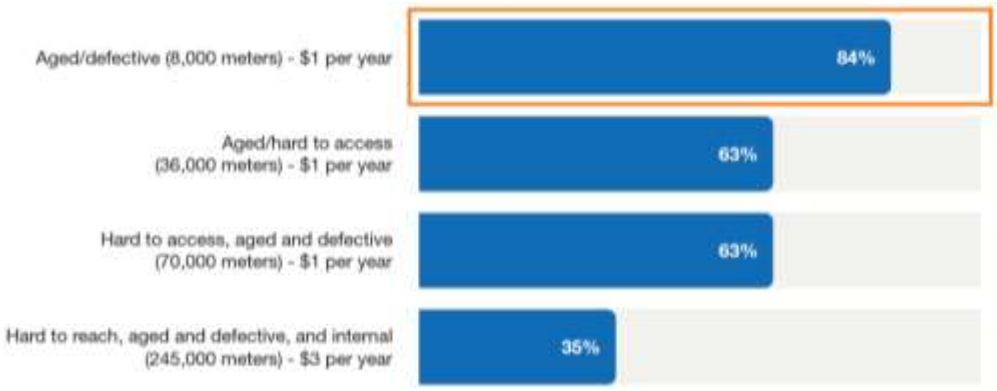
- Option 1: Do nothing (i.e. do not install digital meters)
- Option 2: Replace 8,000 aged and defective meters in our network that are considered chronic no access.
- Option 3: Replace 36,000 meters – which includes the 8,000 above – that are considered hard-to-access meters located in internal and external sites like secure high-rise apartment buildings or behind a property's locked gate.
- Option 4: Expand the number of sites to 70,000 to include external properties with hard-to-access meters (including properties with dangerous dogs or overgrown vegetation).
- Option 5: Replacing all hard-to-reach, aged and defective meters with digital meters (245,000).

When the Customer Forum was asked to provide preliminary preferences on the above options, 90% of participants were supportive of the rollout of digital meters although there were differing views on the number of digital meters we should install.

Following a second round of Customer Forum deliberations – when all of the initiatives were considered as a total package – 84% of participants voted for 8,000 meters to be replaced with digital meters over the 2025-30 period. Deliberating on the initiatives as a total package, Customer Forum participants considered a range of trade-off decisions which revealed their preferences in terms of how we should balance our investments for the 2025 Plan period. Figure 5.11 sets our Customer Forum participants preferences across digital metering options.

Based on customer feedback, we are proposing to replace around 8,000 meters with a digital meter over the 2025 Plan period at a total cost of $9.4M. This includes the incremental cost of the meters and supporting ICT infrastructure.

Figure 5.11: September 2023 Customer Forum voting on digital metering[51]



51 The 'Do Nothing' option was not considered in the second round of Customer Forum deliberations as 90% of participants supported digital metering from the first round of deliberations.

Integrity, safety and security

Over the 2025-30 period we will continue our programs to extend the life of our high-pressure infrastructure to maintain the safety, reliability and integrity of our network. Our integrity, safety and security focuses on assets that are now 40-50 years old and require additional investment to maintain their safety, reliability and integrity.

Most of the expenditure relates to two programs:

- Pipeline integrity – Managing the integrity of our high-pressure mains, for instance by reconfiguring the pipeline to allow integrity assessments using in-line inspection technology. This includes completing the remainder of the Sydney Primary Main risk reduction program.
- Obsolescence – Replacing obsolete equipment at our facilities, ensuring they meet modern standards and regulatory requirements as well as simplifying design to reduce costs.

The remainder of our program addresses a range of issues and risks we have identified (such as security risks) and includes a forecast of minor capex required to manage many of our assets on a reactive basis in addition to asset relocations and the purchasing of tools and equipment.

Overall, our integrity, safety and security capex is slightly above historical spend to complete the pipeline integrity and obsolescence programs, and address security risks.

Augmentation

Augmentation includes capex to install new gas mains and district regulators to ensure that our network has sufficient capacity to meet demand.

Drivers of augmentation include the construction of new estates, construction of high-rise buildings (generally in existing areas) and peak demand growth. Consistent with the 43% reduction in connection numbers, we are forecasting a 58% reduction in augmentation capex.

We are forecasting to deliver a small number of augmentation projects to support supply in several areas of our network either affected by high-rise development or the shift to hybrid work (which has increased peak demand in some pockets of our network).

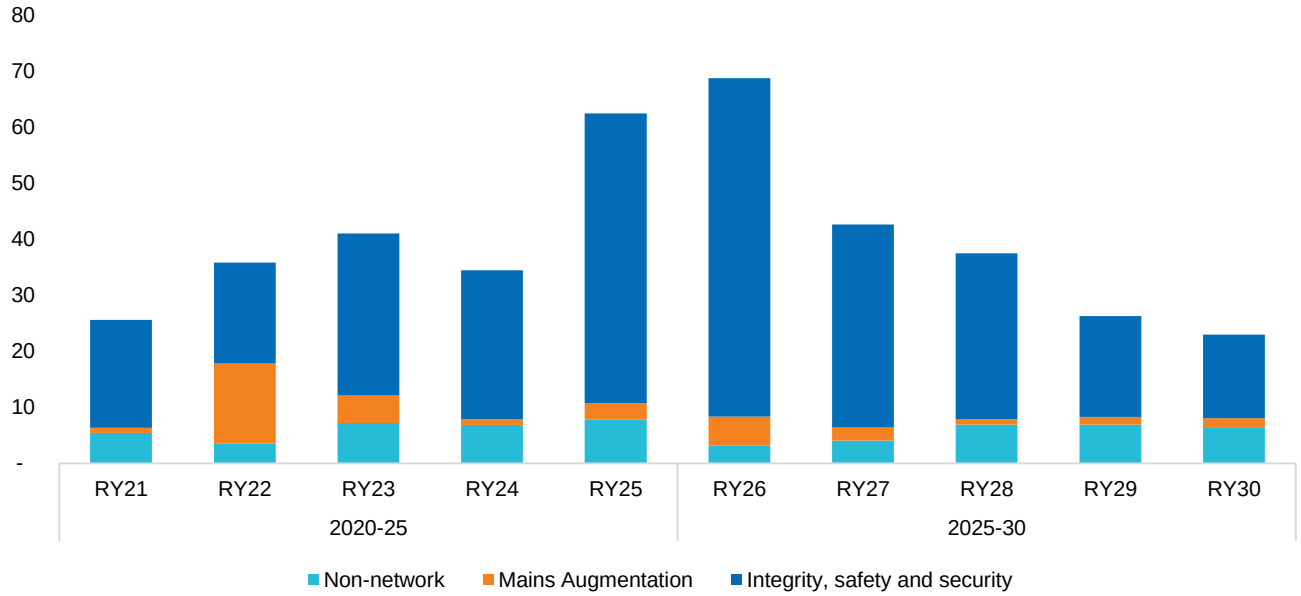
Non-Network

Non-network capex comprises property and vehicle costs required to support the operations of our networks.

We are forecasting to continue spending the minimum required to maintain our properties and fleet to ensure that they remain fit-for-purpose and can support the efficient delivery of services. We are forecasting 2025-30 capex to be slightly below 2020-25 spend by $3.3M.

We provide more detail on our stay in business capex spend in section 6 of *JGN – Att 5.1 – Capital expenditure*.

Figure 5.12: Stay in business (excluding metering) capex ($2025, millions)



5.7 Maintaining our information technology

ICT underpins the delivery of safe, reliable and cost-effective gas services to customers and provides the essential platforms which support almost all of our operations. For example, our systems correct billing errors before they reach the customer and help us quickly respond to network incidents, allowing us to keep the supply of gas safe and reliable.

There are other major drivers that did not exist in the same magnitude five years ago. Cybersecurity requirements continue to be an emerging cost driver as we need to protect customer information and the operations of our network. Utilities are constantly targeted by cyber-criminals, and we need to ensure our ICT and data remains secure by providing fit-for-purpose protection and response in line with cybersecurity threats. Similarly, the Security of Critical Infrastructure (SOCI) Act[52] requires us to put in place certain data protection mechanisms into our digital environment.

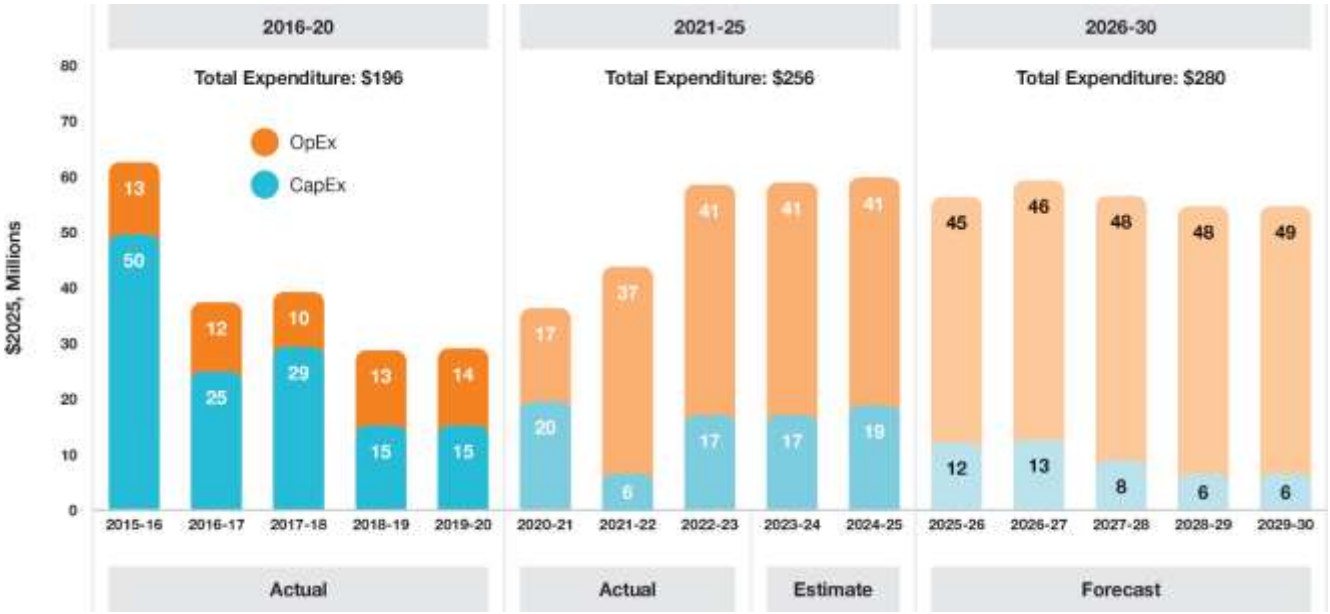
Additional drivers of our proposed ICT investments include enhancing analytical platforms to enable us to further optimise asset performance and investment based on evolving customer needs and demand. Another major focus area is lifecycle management of critical platforms: this aims to achieve long term operational efficiencies, minimise disruption for customers and reduce emissions.

Other drivers of our ICT expenditure include areas where more digital support will be required such as digital meters as discussed in section 5.6, and the need to accommodate increased analytics to support investment planning and regulatory reporting.

It is difficult to compare ICT costs on a period-on-period basis by looking only at capex, as cloud implementation and customisation costs have been treated as capex in AER allowances for the 2020-25 period but recorded as opex from 2021 due to a change in accounting policy. Cloud costs will be treated as opex in the 2025-30 period.

Accordingly, in Figure 5.13 we set out a total expenditure view. Further details on our ICT projects are set out in *JGN – Att 5.4 – Technology Plan*.

Figure 5.13: ICT totex ($2025, millions)



52 *Security of Critical Infrastructure Act 2018*

6. Our operating expenditure requirement

Highlights

- Customers have told us that issues of affordability – particularly in a context of rising inflation – continue to be front-of-mind and challenging. They want us to ensure gas remains affordable for customers in the longer term whilst we transition to a renewable gas and environmentally friendly market.
- Over the 2020 Plan period, we expect to incur $1,185M of opex consisting of $1,098M Transportation RS and $87M Ancillary RS. This is $174M or 13% below the allowance approved by the AER. According to recent analysis by Competition Economists Group (CEG), who we engaged to benchmark our performance against our peers, we continue to benchmark well in relation to opex, capex and our total costs.
- Our proposed opex seeks to maintain a constant opex per customer over the 2025 Plan period. This is despite an increase in costs associated with ICT activities, directly measuring our fugitive emissions, costs required to comply with new climate reporting requirements, Safeguard Mechanism compliance, investing in new initiatives to assist vulnerable customers, and costs associated with pipeline integrity management.
- Our forecast opex for our 2025 Plan represents the amount that is required to meet our obligations and customers' expectations efficiently, and to promote the long-term interests of our customers

6.1 Our operating expenditure for Transportation RS

This chapter sets out our opex for our Transportation RS. We treat our forecast Ancillary RS opex separately in our 2025 Plan, consistent with the AER's preferred treatment of Ancillary RS.[53]

We incur opex by undertaking a range of activities to maintain and support our network. These activities include ongoing network maintenance, such as inspections, repairs, and emergency response for unplanned outages or incidents. We also incur opex in network planning and design, customer service, field operations, and corporate support, such as ICT.

Our opex is generally recurrent in nature, funding the regular operations required to deliver reliable network services. Table 6.1 illustrates the high-level categories of our opex. We provide more details on our opex categories in Appendix A of *JGN – Att 6.1 – Operating expenditure*.

Table 6.1: Categories of Transportation RS opex

Opex categories
Repairs and maintenance
Marketing and retail incentives
Debt raising
Unaccounted for gas
Government levies
Other operating expenditure

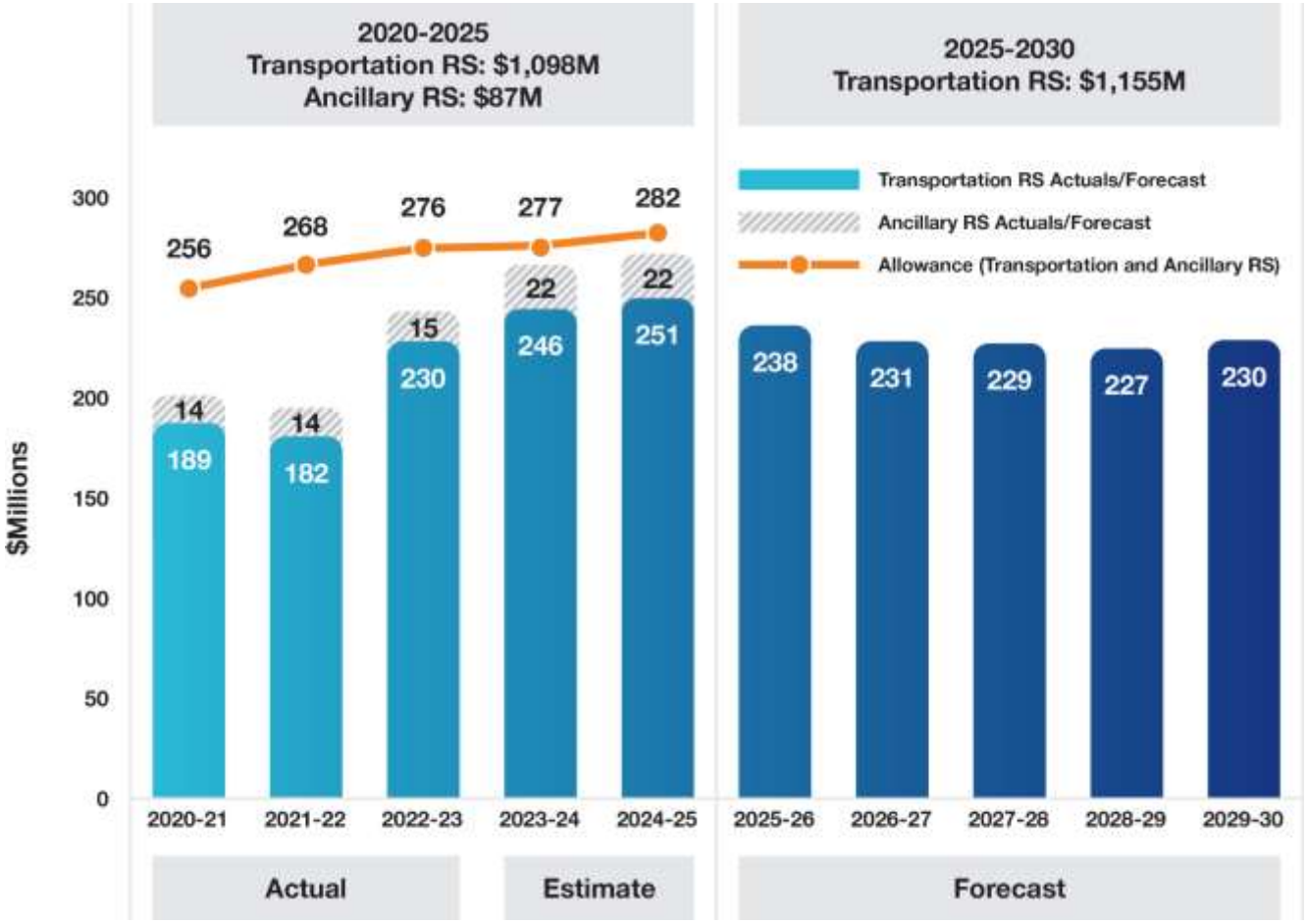
53 We discuss our Ancillary RS in more detail in Chapter 10.

6.2 Overview of our Transportation RS opex

Our current period opex is for our single Reference Service, which comprises transportation, metering and ancillary activities. We explain in Chapter 9 the splitting of our current single Reference Service into a Transportation RS (comprising transportation and metering) and an Ancillary RS, from 1 July 2025.

Figure 6.1 shows our total opex over the 2020-25 and 2025-30 periods, and the AER total opex allowance for the 2020-25 period.

Figure 6.1: Total opex, current and forecast period ($2025, Millions)



We discuss our opex forecast in section 6.3 below.

Over the 2020-25 period, we expect to incur $1,185M of opex with $1,098M attributable to Transportation RS and $87M Ancillary RS. This is $174M or 13% below the allowance approved by the AER for our current single Reference Service. The underspend is largely driven by the following factors:

- Prior to 2021-22, we implemented a transformation program to simplify business processes and lower operating costs. This resulted in a sustained reduction in our opex cost base and partially offset the impact of a change in our capitalisation policy to expense all corporate overheads.
- Over the 2020-22 period, many operational activities were temporarily halted by the impact of repeated COVID lockdowns. This included meter reading and a range of inspection and maintenance activities. These activities have since returned to normal levels from 2022-23.

- During 2021 and 2022, prolonged wet weather caused by the La Nina weather event resulted in significant flooding across NSW impacting operational activities.[54] However, following these flooding events, spending in emergency repairs and maintenance, as a result of water entering pipelines, resulted in increased costs to undertake repairs.[55]
- Partially offsetting the reductions to opex was a material increase in unaccounted for gas (UAG) replenishment costs. The increase in UAG costs was due to significant spikes in wholesale gas prices in 2021-22. Despite the significant increase in the UAG costs, we were able to operate below the opex allowance approved by the AER.

What is unaccounted for gas (UAG)?

UAG is the difference between the measured gas entering our network and the gas delivered to customers.

Estimating UAG across a network such as JGN's is complex as it is caused by many factors, such as measurement inaccuracies, third party damage to our network, leaks and venting of gas for safety reasons.

We are responsible for purchasing the additional gas required to replace UAG. This cost forms part of our opex.

54 In March 2021, following months of prolonged wet weather, a series of floods affected large parts of the east coast of NSW, including Sydney. It was the most significant flood event in 60 years in parts of the state, and the Australian Government declared many parts of the east coast a natural disaster zone. This was followed by further flooding in February 2022.

55 Costs to relight households were also incurred following the significant gas outage in Bathurst, when an APA pipeline delivering gas to our Bathurst network suffered damage during flooding, resulting in a loss of gas supply to the area.

6.3 Our forecast opex

6.3.1 Developing our Transportation RS forecast opex

In developing our 2025 Plan, we have forecast our opex (as shown in Figure 6.2) using the AER's preferred forecast method, 'base, step, trend'. The method forecasts future opex using a 'base' year – where the operating costs are representative of the efficient costs necessary to operate and maintain the network, and regulatory obligations.

We have also used specific forecasts for items that the base year opex does not provide a reasonable basis with which to forecast future expenditure requirements. We undertook a thorough assessment to determine that our forecast opex represents the amount that is required to meet our obligations and customers' expectations efficiently, and to promote the long-term interests of our customers.

Figure 6.2: Our opex forecasting approach

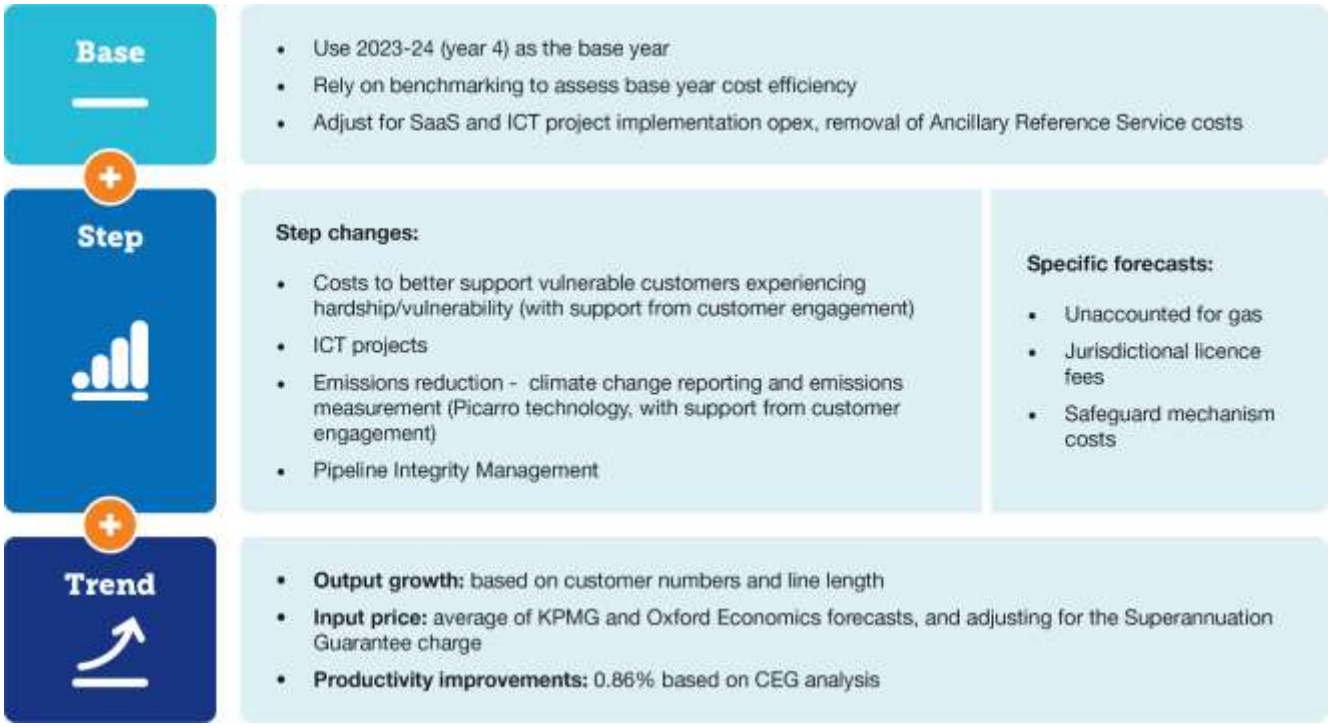


Table 6.2 shows that our total forecast opex for the 2025-30 period is $1,155M, inclusive of debt raising costs. Our forecast Transportation RS and Ancillary RS opex for the 2025 Plan period is around 13% lower than our allowance for the 2020 Plan period. When comparing Transportation RS opex, our forecast opex is about 5% higher compared to what we expect to incur in the current 2020-25 period.

The drivers of the increase in forecast Transportation RS opex compared to 2020-25 period is largely due to step changes for the transition to cloud-based and other ICT services ($15M), emissions measurement ($21M), pipeline integrity management ($28M), legislative requirements pertaining to emissions reporting ($4M) and safeguard mechanism compliance ($10M), offset by assumed productivity improvements of $24M.

Table 6.2: Forecast opex for the 2025 Plan period ($2025, millions)

Category	Description	Total forecast opex ($M)
Establish efficient base year	Our proposed base year is 2023-24. The estimated base year opex after removing software as a service (SaaS) implementation costs[56] and before removing Ancillary RS is $268M. This estimate will be updated in our revised proposal in January 2025 to reflect the full year actual audited costs.	1,342
Adjust base year opex	We have made adjustments to the base year opex to: – remove category specific forecasts in the base year – remove costs relating to Ancillary RS to reflect the separation of Ancillary RS from 1 July 2025 – re-allocate SaaS implementation costs from capex to opex in line with the AER's guidance – include the project costs associated with establishing and implementing new ICT cloud-based service capacity – account for the increment from base year to final year in the model.	-458
Estimate trend	We have trended the efficient base year forward by applying rates of change. This includes: – Output growth (customer number and line length) of $19M – Price growth (labour) of $19M – Ongoing productivity improvements of 0.86% per annum, which equates to a reduction of $24M over 5 years	14
Develop category specific forecasts	We have developed specific forecasts for items where base year costs are not representative of the costs we expect to incur. This includes: – UAG $146M – Licence fees and government levies $21M – Safeguard Mechanism costs $10M – Debt raising costs $10M	187
Forecast step changes	We have proposed the following step changes: – Support for customers experiencing vulnerability $3M – ICT services $15M – Climate reporting $4M – Emissions measurement (Picarro) $21M – Pipeline Integrity Management (pig and digs) $28M	70
Total		**1,155**

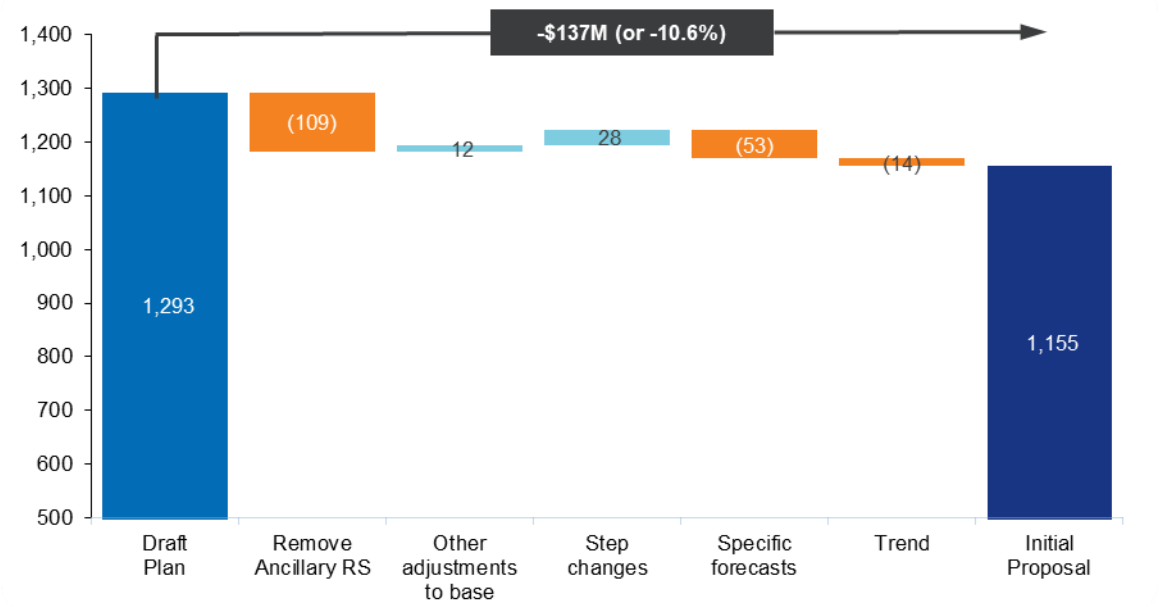
6.3.2 Changes since our Draft 2025 Plan

In our Draft 2025 Plan, our forecast opex was $1,293M over 2025-30 period for Transportation RS and Ancillary RS, compared with our proposed $1,155M for Transportation RS in the 2025 Plan.

This results in a difference of $137M. After excluding the impact of ARS, our proposed opex is $28M lower than the Draft 2025 Plan. Figure 6.3 shows a comparison between our Draft 2025 Plan and our 2025 Plan.

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

Figure 6.3: Opex forecast between Draft Plan and 2025 Plan ($2025, millions)



This is a result of the following key changes since we published our Draft 2025 Plan:

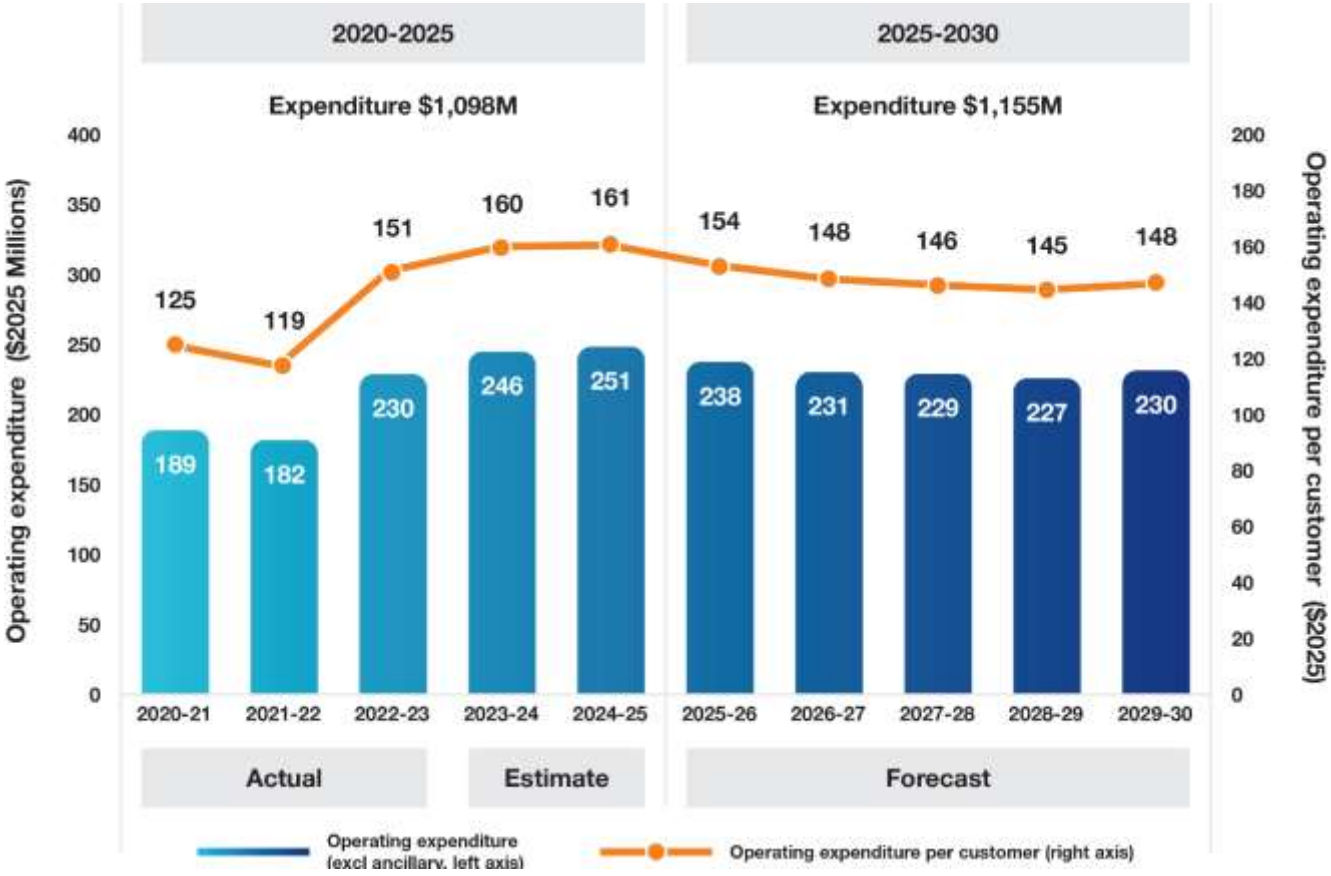
- Our Draft 2025 Plan included opex for our total reference services, that is, for our Transportation RS and Ancillary RS. To be consistent with the AER's preferred treatment of Ancillary RS, we have backed out Ancillary RS opex from base opex using an estimate of what we expect to incur in our base year.
- The inclusion of a new base year adjustment on incremental ICT project implementation costs, which is reclassified from a step change to a base year adjustment based on the AER's feedback through the Early Signal Pathway engagement.
- Increase in our step changes, including a new step change on pipeline integrity management and an increase in emissions measurement activities.
- Reduction in specific forecasts driven by lower cost of UAG due to an update of forecast gas prices from AEMO.
- Updated estimates on output growth, labour escalation and productivity adjustments based on external experts' forecasts from CEG and Oxford Economics.

Opex per customer

In line with customer values including affordability, we are committing to keeping opex per customer constant over the 2025 Plan.

Figure 6.4 shows our historical and forecast total opex over the 2020-21 to 2029-30 period. Opex per customer is relatively constant over the 2025 Plan period. This is despite opex pressures associated to transferring some ICT costs from capex to opex, directly measuring our fugitive emissions, complying with new climate reporting and Safeguard Mechanism requirements, investing in new initiatives to assist vulnerable customers, and pipeline integrity management.

Figure 6.4: Total Transportation RS opex ($2025, millions), current period (2020-25) and forecast period (2025-30)



Note: The relatively lower opex per customer in 2020-21 and 2021-22 is due to the halting of operational activities, such as meter inspections and some meter readings, due to COVID lockdowns.

6.3.3 Benchmarking shows that we are operating efficiently

When compared to other gas distribution businesses (GDB's) in Australia, we have consistently benchmarked well in terms of the costs and efficiency of the services we provide. According to recent analysis by CEG, who we engaged to benchmark our performance against our peers, we continue to benchmark well in relation to opex, capex and our total costs. Economic Insights in its report for us in 2019 also made similar conclusions.[57]

CEG has used the following approaches to benchmarking opex:

- **Productivity indices** – a productivity index is a measure of how efficiently a firm uses opex and capital inputs to produce its outputs. CEG has compared JGN's total factor productivity (TFP) and partial factor productivity (PFP) trends against the productivity trends of the other GDBs. CEG also analysed JGN's productivity levels against other Australian GDBs measured using multilateral TFP (MTFP) and multilateral PFP (MPFP).
- **Econometric analysis** – measures whether JGN is efficient in its use of opex inputs relative to that of the efficient production frontier.

57 Economic Insights, Relative efficiency and forecast productivity growth of JGN, April 2019.

- **Partial performance indicators (**PPIs**)** - measures the relationship between opex (as the input) and individual outputs to measure opex efficiency. PPIs offer a general indication of the comparative performance of GDBs in delivering specific outputs.

CEG's independent analysis outlined below strongly supports that we are operating efficiently. This outcome provides evidence that our level of operating costs is efficient. Consequently, we consider that our 2023-24 base year opex provides an efficient basis to forecast our opex for the 2025 Plan period.

Productivity indices

CEG's analysis on productivity indices includes both TFP/PFP and MTFP/MPFP measures. The TFP and PFP indices provide the change in productivity trends over time, whereas the MTFP and MPFP indices provide a comparison of the relative efficiencies between GDBs.

CEG's analysis shows that we have the fastest rate of productivity improvements across 8 Australian and 4 New Zealand GDBs on opex. We are also in the top three on all MTFP and MPFP measures. The results are summarised in Figure 6.5 below.

Figure 6.5: Summary of JGN's results on productivity indices[58]

Econometric analysis

CEG's econometric analysis concludes that our efficiency score on historical average opex is 0.84, higher than the industry average score of 0.72 for all GDBs. When assessing the efficiency of the latest year where data is available (i.e. 2022), JGN is the most efficient network with an efficiency score of 0.98 compared to the industry average score of 0.80. These findings suggests that we are efficient and does not require an efficiency adjustment to our base year opex.

CEG also estimated that our average rate of technical change or 'frontier shift' is 0.86% per annum (expressed as a rate of productivity growth), which is higher than the 0.74% per annum in JGN's 2020-25 opex forecast and higher than the 0.5% per annum commonly applied in electricity distribution determinations. In an uncertain future with possibility of declining customer base it will be challenging for us to achieve this level of productivity growth. However, in absence of a counterfactual we have applied 0.86% per annum productivity adjustment.

Partial performance indicators

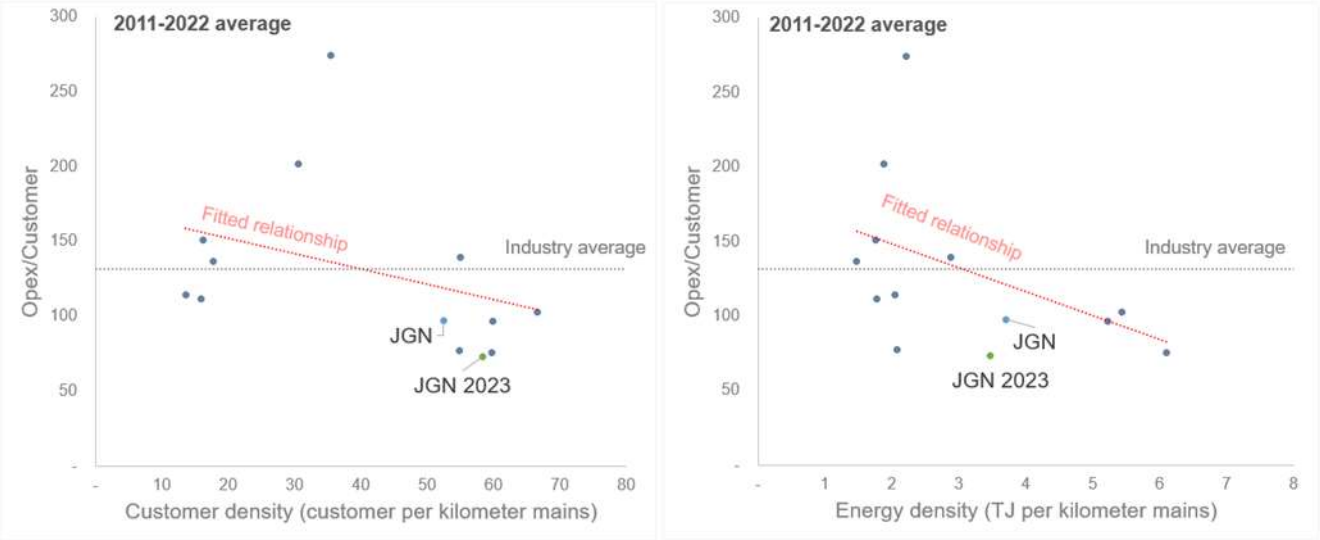
We are one of the GDBs with the lowest opex per customer across Australian and New Zealand gas networks. Figure 6.6 shows that JGN is consistently below the industry average on opex per customer over the long period (2011-22) and short period (2018-22). The blue bar represents our historical average opex per customer and the green bar represents our 2022-23 opex per customer (the latest year where JGN's actual opex is available). It shows that JGN's most recent (2022-23) opex per customer is lower than our historical average as well as the industry average (grey line).

58 Opex PFP and Opex MPFP include 12 GDBs in the analysis (8 Australian and 4 New Zealand GDB) whereas Capital PFP, TFP, Capital MPFP and MTFP include only 7 Australian GDBs. This is because data on capital inputs are not available for all 4 New Zealand GDBs and 1 Australian GDB.

Figure 6.6: Historical average opex per customer ($2022)

When we compare the opex per customer with GDBs with similar customer density and energy density in Figure 6.7, both JGN's historical average and 2022-23 opex per customer is lower than other networks with similar densities. Additionally, our opex per customer is below the predicted level (red line) for a business with our network density; that is, our level of opex is efficient relative to the average industry level when accounting for customer density and energy density.

Figure 6.7: Opex per customer conditional on network density ($2022)



6.3.4 Base year opex

CEG's benchmarking analysis provides us with assurance that our proposed base year (2023-24) opex provides an efficient basis for setting our future opex allowance based on benchmarking results and performance against regulatory allowance.

We are proposing to use the penultimate year in the current regulatory period, 2023-24, as our base year opex. We consider that the operating costs in 2023-24 best represent the efficient costs necessary to operate and maintain the network and meet our regulatory and legal obligations in regard to safety, reliability, security, and the environment.

6.3.5 Base year opex adjustments

Base year costs are adjusted to account for any changes in the treatment of costs and to remove costs subject to category specific forecasts.

We have adjusted our base year costs:

- to remove Ancillary RS to reflect the splitting of our current single Reference Service into Transportation RS and Ancillary RS from 1 July 2025
- to remove SaaS implementation costs, which are currently treated as capex for regulatory purposes for consistency with the AER's treatment of them in the CESS and ECM. SaaS costs will be treated as opex in the 2025-30 period and therefore we add them back to base year opex resulting in a net zero impact
- for the net movement in ICT non-recurrent project implementation costs
- to remove costs that we develop category specific forecasts for.

These adjustments to our base year are shown in Table 6.3.

Table 6.3: Base year adjustment ($2025, millions)

Description	Total opex base year adjustment
Remove Ancillary RS opex from our 2023-24 base year (see *JGN – Att 7.2 – Ancillary reference services cost build up approach*)	(21.9)
SaaS costs provided as capex allowance	2.5
Net movement in non-recurrent ICT project opex	2.4
Remove costs that we develop category specific forecasts for	(79.2)
Net adjustment to base year opex	**(96.2)**

We provide more detail on these adjustments in section 7.3 of *JGN – Att 6.1 – Operating expenditure*.

6.3.6 Opex trend

Once the base year opex has been set, we trend the efficient base year costs forward by applying a rate of change in opex. This rate of change is based on:

- An average forecast increase in wages costs of approximately 0.68% per annum above inflation.
- A forecast increase in opex due to output changes including customer numbers and network length of approximately 0.65% per annum.
- An ongoing productivity target accounted for in our forecasts of 0.86% per annum. This reflects our ongoing commitment to target efficiency savings in the delivery of our services, which benefits customers through lower bills. Accounting for these savings lowers our opex by $24M over five years.

Table 6.4 shows the forecast opex trend over the 2025 Plan period. These costs will increase our opex by $14.5M or 1.6% of base opex in the 2025 Plan period. We provide the basis of our rate of change factors in section 8 of *JGN – Att 6.1 – Operating expenditure.*

Table 6.4: Forecast opex trend ($2025, millions)

	2025-26	2026-27	2027-28	2028-29	2029-30	2025-30 Total
Price change trend	1.5	2.8	3.9	5.0	5.8	19.0
Output growth trend	1.6	2.7	3.7	5.0	6.3	19.2
Productivity adjustment	(1.6)	(3.1)	(4.7)	(6.4)	(8.0)	(23.8)
Total opex rate of change	**1.5**	**2.3**	**2.9**	**3.6**	**4.1**	**14.5**

6.3.7 Step change forecasts

Lastly, we account for step changes in our operating costs. Step changes are costs we incur in undertaking new activities or meeting new obligations that are not accounted for within our base year costs.

The proposed step changes reflect the outcome of an extensive review of our opex requirements for the 2025-30 period. We are proposing opex step changes for investing in new initiatives to assist customers experiencing vulnerability, some ICT costs associated with non-recurrent projects, costs required to comply with new climate reporting requirements, costs associated with directly measuring our fugitive emissions, and costs associated with pipeline integrity management.

Our proposed step changes are set out in Table 6.5.

Table 6.5: Forecast opex step changes ($2025, millions)

Step change	Driver	2025-26	2026-27	2027-28	2028-29	2029-30	Total
Support for customers experiencing vulnerability	Reflects accepted good industry practice supported by customer engagement	0.53	0.53	0.53	0.53	0.53	2.66
ICT services	Major external factor outside JGN's control	0.76	2.26	3.75	3.93	4.34	15.04
Emissions reduction – Climate reporting	New regulatory obligation	0.78	0.71	0.71	0.71	0.71	3.61
Emissions measurement (Picarro leak detection services)	Reflects accepted good industry practice supported by consumer engagement	4.17	4.14	4.16	4.16	4.16	20.80
Pipeline Integrity Management– Preventative measures ('pigs and digs')	Reflects accepted good industry practice and major external factors outside JGN's control	9.30	3.14	4.08	4.03	7.58	28.13
Total		**15.54**	**10.78**	**13.23**	**13.36**	**17.32**	**70.25**

These step changes are further discussed below. Additional information on our proposed step changes is available in *JGN – Att 6.2 – Opex step change justification*.

Step change: Support for customers experiencing vulnerability

We propose a total of $2.7M to enhance customer support for customers experiencing vulnerability.

We have long been assisting customers experiencing vulnerability, and currently undertake several initiatives including Voices for Power which trains cultural community leaders to provide tailored energy literacy programs, the Uniting Energy Assist Program which helps customers navigate the energy sector and access support, an Aboriginal Workforce Mentoring program to advance reconciliation, and an annual Community Grants Program that has provided over $650,000 to support local groups addressing social issues.

During our engagement in developing our 2025 Plan, customers told us of their concerns about people experiencing vulnerability and their lack of voice in navigating the changing energy system and rising bills. They supported us providing further customer support for customers experiencing vulnerability which we discuss in Chapter 3.

The box below shows how we tested the enhancement of our vulnerable customer support program with customers.

Figure 6.8: Customer preferences for our vulnerable customer support program

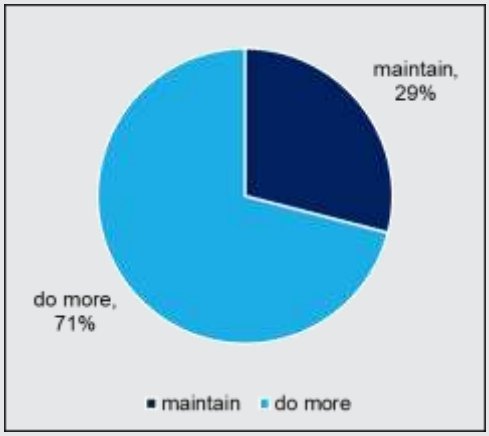
Forum 5

At a broad level, customers believed that we should invest in initiatives to ensure that vulnerable customers are supported. We tested the step change expenditure in vulnerable customers at two Customer Forums.

In Customer Forum 5, 29% (11 customers) voted for JGN to maintain its current activities, while 71% (27 customers) voted that we should “do more”.

The support for the vulnerable customer program was confirmed in Customer Forum 7, when customers were asked to review their preferences from the previous forum. Over 92% of customer voted that they could “live with”, “like” or “love” the vulnerable customer program (the other options were “lament” and “loathe”).

Should we “maintain” or “do more” to enhance our vulnerable customer program?



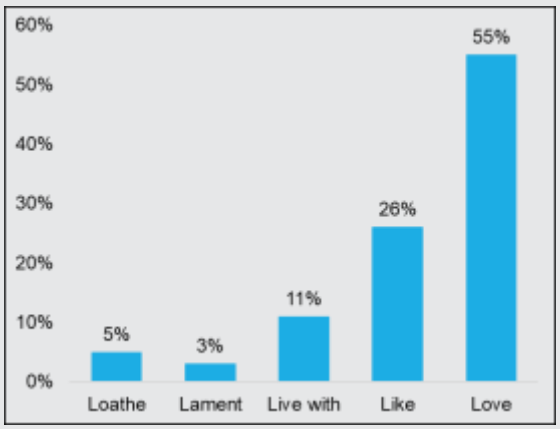
Forum 7

In Customer Forum 7, customers recommended that JGN provide education and awareness programs for high priority vulnerable customers by understanding all levels of vulnerability, which includes clearly communicating and/or translating by letters and emails important information regarding environmental issues and financial costs (statistics/factsheets).

Customers emphasised that JGN needs to take a broad approach to communicate to all customers including CALD, elderly, and not tech savvy, noting that we must cater communications and engagement to match the diversity of our customer base.

Based on customer recommendations, we collaboratively designed new initiatives with stakeholders and community groups to identify impactful ways to better support vulnerable customers.

Support for vulnerable customer program: “Do more” (L scale rating on preferences)



Based on customer and stakeholder feedback, we have decided to proceed with:

- **Home Gas Audits and Emergency Appliance Repair** - we will provide home gas audits and possible emergency appliance repair to help improve equity and access to customers experiencing vulnerability in our network. We propose to work with a range of community service organisations and customer advocate groups to identify and refer customers experiencing vulnerability to participate in the Home Gas Audit and Emergency Appliance Repair program. The home audits will be conducted by trained energy advisors from community service organisations, who will perform an assessment on how efficiently these customers use gas and determine if any appliances need to be repaired. Based on feedback from our stakeholders, we will also offer translation services during the Home Gas Audits to cater to CALD communities. If appliances have been identified for repair during the audit based on predetermined criteria, these community service organisations will connect the customer with trade partners who will conduct the repair. There was a deliberate effort to ensure community service organisations were engaged in each step of the process so that customers experiencing vulnerability have a continuity of support and are given the appropriate level of care.
- **Information Hub** - we will create bite-sized educational content and links to other credible information sources (i.e. government websites) to ensure customers experiencing vulnerability are informed, involved and engaged on making efficient gas and energy choices for their homes. This includes an online resources hub with information in multiple languages which will enable us to reach the most customers and provide engaging educational content, specifically targeting those who experience vulnerability.
- **Internal resources** – we will provide the necessary staffing and internal capacities to deliver the program of work. We estimate that we will require 1 employee (FTE) to manage the implementation of, and provide ongoing support for, the initiatives to support customers experiencing vulnerability. This would involve the design of the program, establishing relationships with key community organisations, trade partners and suppliers to negotiate the development and delivery of programs. This role will also lead monitoring and evaluation of the programs, integrate customer feedback and manage continuous improvement. We will also require resources to support internal capacity training of customer service, field-crew staff and updating of internal processes and systems to create a more responsive customer environment.

Section 2 of *JGN – Att 6.2 – Opex step change justification* provides detail on our proposed opex step change for customers experiencing vulnerability.

Step change: ICT services recurrent step opex for new projects

We propose a total of $15M ($14M 2023$) for ICT recurrent opex associated with non-recurrent projects.

ICT recurrent opex reflects the incremental costs associated with new systems that are deployed for new capacity that are not reflected in our base year opex. The incremental expenses may include costs related to maintenance, licensing fees, support, and ongoing operational activities required to sustain the benefits or functionality delivered by the project. They reflect accepted good industry practice, new regulatory obligations and external factors outside JGN's control.

Table 6.6 sets out the non-recurrent projects that we expect will require additional ongoing opex.

Table 6.6: Forecast ICT non-recurrent opex step change for the 2025 Plan ($2025, millions)

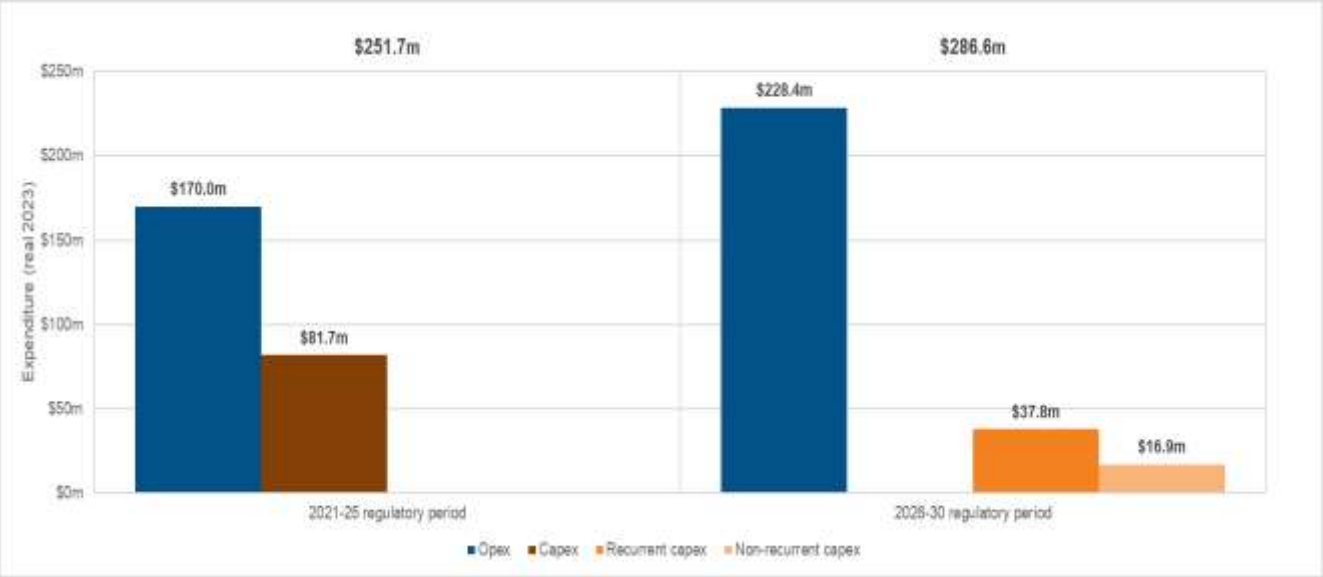
Non-recurrent ICT sub-categorisation	Initiative Name	Recurrent step opex
Maintaining existing services, functionalities, capability and/or market benefits	Gas Retail Market Settlement – Major Application Lifecycle	0.09
	Geospatial systems lifecycle management	0.59
	Cloud Capacity Growth	3.48
Complying with new/altered regulatory obligations/requirements	Enterprise Content Management	0.82
	Data Foundations and Governance	0.83
	Cybersecurity Program	2.95
	Contract lifecycle Management	0.73
New or expanded ICT capability, functions and services	Asset Investment Optimisation	2.98
	Network Management Advanced Analytics	2.19
	Chronic No Access Digital Metering pilot	0.38
Total		**15.04**

We have prepared Investment Briefs for each proposed program of work which establishes and summarises the overarching objective and problem statements that will be addressed, as well as the high-level scope, and what options have been considered to deliver the most prudent and efficient technology solution. The options analysis provides a preliminary assessment of the options to implement an effective solution to achieve the objective of the Investment Brief. *JGN – Att 5.4 – Technology plan* provides more details on our proposed non-recurrent ICT projects over the 2025-30 period.

We have demonstrated in the Investment Briefs the need to incur the expenditure and that we are adopting the most efficient option in accordance with accepted good industry practice. We consider that the above non-recurrent programs will help us deliver services to our customers consistent with the achievement of the National Gas Objective. Each non-recurrent project is necessary to ensure that our systems remain fit for purpose in a constantly changing technology and network environment where our customers' requirements and expectations continue to evolve.

As shown in Figure 6.9 we are forecasting an increase in opex and overall ICT total expenditure (totex) over the 2025-30 period compared with the 2020-25 period. The increase in opex reflects the continuing shift away from capex to opex. Our increase in totex supports the need to ensure the sustainability and resilience of our infrastructure and operations, and to meet the evolving needs and priorities of the regulatory environment.

Figure 6.9: ICT totex over 2021-30 ($2025, millions)



Section 3 of *JGN – Att 6.2 – Opex step change justification* provides detail on our proposed ICT recurrent opex step change.

Step change: Emissions reduction – climate reporting

We expect that we will have new obligations from January 2025 to disclose climate-related financial information in a general-purpose financial report. We forecast a cost of $3.6M to comply with the new emissions reporting requirements.

The introduction of the International Sustainability Standards Board (ISSB) under the International Financial Reporting Standards (IFRS) is setting a global benchmark for sustainability reporting on business performance in terms of emissions reduction. This standard has been adopted by the Australian Government which means that we will need to comply with these standards. However, because ISSB do not refer explicitly to climate-related matters, and material information about climate-related matters often falls outside the scope of general-purpose financial statements (GPFS), the Australian Accounting Standards Board (AASB) has developed additional guidance or requirements to promote consistent and comparable reporting of climate-related financial information.

The AASB has released a draft Exposure Draft SR1 Australian Sustainability Reporting Standards – Disclosure of Climate-related Financial Information which proposes Australian climate-related financial disclosure requirements, using IFRS S1 and IFRS S2 as the baseline.

The proposals would require an entity to disclose climate-related financial information in a general-purpose financial reports (e.g. as part of its annual report). The new legislation for emissions reporting is expected to commence from 1 January 2025 which will take effect from our 1 January 2025 reporting period.

Section 4.2 of *JGN – Att 6.2 – Opex step change justification* provides more detail on our emissions reporting step change.

Step change: Emissions measurement – Picarro technology

We forecast a cost of $21M to more accurately detect leaks in our network.

To survey our network, our maintenance teams walk along gas main routes (some 26,000km in total) with a gas detector to detect and record the leaks on paper maps before transferring the data to a spreadsheet. This process is labour intensive, and it takes us five years to survey our entire network.

Effective from July 2024, as part of the Safeguard Mechanism, JGN is mandated to report annual carbon emissions and achieve a reduction in carbon emissions by 4.9% per annum. A significant portion of JGN's emissions is attributed to network leakage, emphasising the need for more robust surveying measures.

Further, the Australian Government has joined the Global Methane Pledge, which commits Australia to take action on reducing methane emissions in the energy, resources, agriculture and waste sectors.[59] This creates a need for us to facilitate ways to minimise our emissions in an efficient manner.

To address these challenges and align with local and international best industry practice, we need to invest in technology to detect and report emissions accurately. As a major carbon emitter, JGN has a responsibility to contribute to the government's net-zero emissions target by 2050. We consider that accurately measuring our UAG is consistent with the intent of the NGER scheme, and in helping NSW achieve its target of a 50% reduction in emissions compared to 2005 levels by 2030.

In August 2023, we commenced trialling a new leakage detection and survey technology subscription service (offered by Picarro) which will help improve our capability in detecting gas leaks in our network. Picarro is a global leader in emissions measurement and advanced leakage detection surveys and its technology is used worldwide to assist network operators to reduce emissions and improve infrastructure safety. The Picarro technology is more accurate than our traditional survey methods which can understate leaks on the network.

As part of the trial, we acquired two gas leakage survey vehicles and associated support from Picarro. These vehicles were successfully tested in our Dubbo network. We have subsequently acquired a third car which commenced operations in April 2024.

The Picarro survey units will help us to more accurately detect gas leaks from the network and enable us to take a more proactive approach in selecting which assets we need to repair or replace which aligns to customer expectations in terms of how we manage our assets. In addition, it will also enable us to reinforce our safety protocols and risk mitigation strategies.

The data obtained from Picarro will help:

1. Prioritise targeted areas for remediation and to identify areas that can be clustered for targeted repairs.
2. Provide greater visibility of JGN's network integrity.
3. Determine areas where the pressure can be reduced to minimise leakage, particularly when the cost-benefit analysis does not stack up for asset replacement.

We have considered cost-benefit analysis of three options: do nothing (option 1: our current three cars), enhanced coverage (option 2: five cars), and advanced measurement (option 3: eight cars). For option 3, a sensitivity analysis was conducted considering three emissions scenarios (high, medium, and low) to account for the uncertainty in the difference between actual and reported emissions.

The cost-benefit analysis shows that we will derive the greatest net benefits from having eight cars which will enable us to survey our network on an annual basis. This approach will transition us from manual methods to a more accurate and technology-driven process. We will be able to detect and repair leaks sooner, helping us to reduce carbon emissions, and better support the achievement of decarbonisation objectives.

Customers also expressed strong support for us investing in Picarro to enable us to reduce network emissions rather than relying on the purchasing of carbon offsets.

59 See 'Australia joins Global Methane Pledge', 23 Oct 2022, at https://minister.dcceew.gov.au/bowen/media-releases/australia-joins-global-methane-pledge

Figure 6.10: Customer views on leak-detection technology vehicles

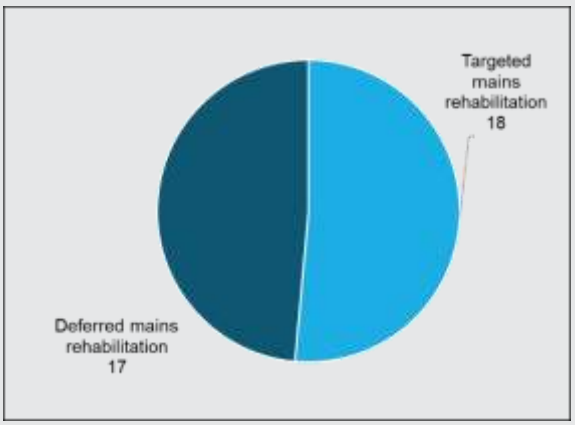
Customer Forum 5

Throughout our engagement our customers told us that they care deeply about the environment and want us to invest in new technologies which will help lower carbon emissions as Australia strives towards achieving its net-zero ambitions.

We engaged with customers over three customer forums on how we should approach our mains replacement program, in the context of the energy transition, and uncertainty surrounding the future role of gas networks.

Customer Forum participants were provided a range of mains rehabilitation options to consider for the next five-year period.

How should we change the way we replace our mains?



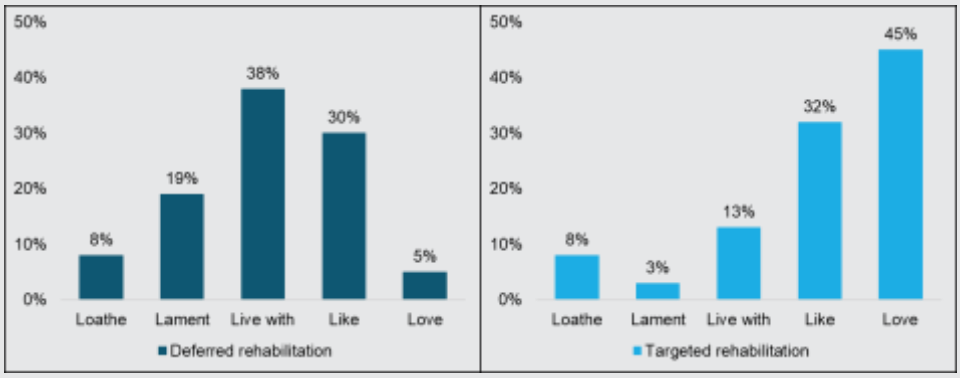
In Customer Forum 5, we tested three mains replacement approaches. There was an almost even split of votes between a *deferred* and *targeted* approach to mains rehabilitation.

Customer Forum 7

In Customer Forum 7, we tested both the deferred and targeted approaches again, using a different scale. For the targeted approach, 90% of customers voted that they could 'live with', 'like' or 'love'. For the deferred approach, this figure was at 73%.

The deferred approach involves using digital technologies to identify gas leaks, which allows us to take a targeted (as opposed to broad) approach to replacing our mains.

Support for each mains rehabilitation option (L scale rating on preferences)



Customer Forum 8 – Recall Session

As part of the Early Signal Pathway process, the AER suggested that we test customers' support for Picarro with customers, noting that this would require an opex step change.

In Customer Forum 8, in addition to reminding participants of Picarro's role in supporting a targeted approach to mains replacement, we also discussed its potential role in helping us reduce carbon emissions. Two options, with indicative bills impacts, were presented with option 1 relying on carbon credits to offset emissions; and option 2 entailing the investment in technology (Picarro) to identity leaks that enables us to take a more proactive approach to asset management and support a reduction in actual emissions from the network.

Customer Forum participants expressed strong support (based on results of L-scale voting) for us investing in Picarro to enable us to reduce network emissions rather than relying on the purchase of carbon credits - 94% of the Customer Forum supported the proposal.

Support for Picarro to identify leaks and reduce network emissions (L scale rating on preferences)

Scale	Votes	%
Carbon reduction approach (Forum 8)		
Love	7.5	21%
Like	17.5	49%
Live with	9	25%
Lament	1	3%
Loathe	1	3%
Total votes	36	**100%**
Total > live with	**34**	**94%**

Small business

As part of our 2025 Plan consultation process, we hosted small business focus groups to understand small business customers needs and expectations of the services we provide, and their views on how we should best plan for, and respond to, the energy transition in the face of uncertainty. We examined trade-offs, and the long-term implications of the initiatives we might adopt during the 2025 Plan. These initiatives were the same ones as considered by the Customer Forum.

Overall small business customers shared similar sentiments to the Customer Forum with all participants preferring we take a more targeted approach to our gas main replacement program using technology to identify gas leaks.

Section 4.1 of *JGN – Att 6.2 – Opex step change justification* provides detail on our proposed emissions measurement opex step change.

Step change: Pipeline Integrity Management

Often referred to as 'pigs and digs', these safety and compliance activities are necessary to avoid risk of failure in our high-pressure pipelines and to comply with Australian Standard 2885 – for high pressures pipelines (> 1050 kPa).

We forecast a cost of $28M to comply with Australian Standard 2885 by adopting best industry practice for Pipeline Integrity Management.

Throughout our engagement with customers, they consistently expressed their desire for us to prioritise safety which is one of the key values agreed by the Customer Forum. Given the critical safety implications of preventative measures and the potential risks to us if the program is not carried out correctly, we determined that seeking customer input on this specific activity would not be appropriate. Presenting customers with options for varying levels of pigging activities would be disingenuous, as we are not willing to consider alternative programs or options that could compromise safety. This approach aligns with our engagement objectives, which include building trust and fostering collaboration with customers in formulating our 2025 Plan. We believe that maintaining the integrity of our pipeline system is a non-negotiable aspect of our operations, and we remain committed to upholding the highest safety standards.

This activity is a major external factor outside our control to avoid risk of failure in high pressure pipelines. We had assumed that our base year spend for pipeline integrity management to avoid risk of failure in high pressure pipelines would be sufficient for our requirements over 2025-30.

Since our Draft 2025 Plan, we have conducted a comprehensive review of AS 2885 Pipeline Integrity Management Standards requirements and applied a risk-based asset management approach when developing our forecast pipeline integrity management program. Based on this approach we have identified the need for a significant increase in preventative measures over the 2025-30 period.

We also considered the risk allocation between us and our customers. In particular:

1. We have taken a balanced approach that ensures a fair sharing of risk between us and our customers
2. Given our ageing and critical infrastructure, we have considered the implications of our plan on customer values of Safety, Environment and Reliability
3. Our planned program is long-term focused and not to the detriment of future generations.

Whilst pipeline integrity management activities are recurrent in nature, they are very much dependent on the age of the pipelines and when the last preventative assessment measures were undertaken (they are usually completed on a 10-year rotation basis which algins to good industry practices).

This means that our Pipeline Integrity Management Program can vary year to year, and particularly from one regulatory period to another. In the 2020-25 period, our expenditure on Pipeline Integrity Management Program preventative measures is expected to be an average of $2.5M (2023$) per year and $2M in 2023/24. We had assumed that our base year spend for preventative measures to avoid risk of failure in high pressure pipelines would be sufficient for our requirements over 2025-30. However, we are expecting our pipeline integrity management activities to increase over the 2025-30 period with an average annual forecast spend of $7.3M. Given the resulting increase in costs we have disclosed our Pipeline Integrity Management Program costs as a step change rather than a category specific forecast.

Our pipeline integrity program is a very important activity in ensuring that we provide a safe and reliable service. Our approach is consistent with our regulatory requirements and accepted good industry practice. We have sought to ensure that our program is efficient to minimise our overall spend whilst ensuring that we continue to provide safe and reliable services. We consider that our program is consistent with the achievement of the National Gas Objective.

Section 5 of *JGN – Att 6.2 – Opex step change justification* provides more detail on our proposed Pipeline Integrity Management Program opex step change.

6.3.8 Category specific forecasts

We have used specific forecasts for items where the base year opex does not provide a reasonable basis on which to forecast expenditure requirements over the 2025-30 period. These specific forecasts include the following:

- **Unaccounted for Gas (**UAG**), $146M**: We are responsible for purchasing UAG. To incentivise us to maintain our network in a way that minimises gas losses, the AER sets an efficient benchmark for the UAG rate.
- **Purchase of Safeguard Mechanism credit units to meet Safeguard Mechanism requirements, $10M**: The Safeguard Mechanism is the Australian Government's policy that aims to reduce emissions for facilities by establishing a greenhouse gas emission threshold which includes JGN. The estimated costs for us to purchase Australian Carbon Credit Units (ACCUs) for Safeguard Mechanism compliance averages to approximately $2M per annum. The forecast ACCUs are based on forward trade price projections. Our tariffs will be adjusted over the 2025-30 period using the tariff variation mechanism to ensure that we only recover the costs that we incur and pass on any benefits we receive through the Safeguard Mechanism.
- **Licence fees and government levies, $21M:** The Gas Supply Act 1996 (NSW) allows the Energy Minister to set licence fees for companies that distribute gas. These fees depend on how much the NSW government spends on overseeing each company. The Independent Pricing and Regulatory Tribunal (IPART) calculates these costs and suggests the appropriate fees to the NSW Treasurer.
- **Debt raising costs, $10M:** The transaction costs required to raise debt to fund our capital investments.

Table 6.7 sets out our forecast category specific forecasts over the 2025-30 period. We provide more detail on them in section 10 of *JGN – Att 6.1 – Operating expenditure*.

Table 6.7: Category specific forecasts 2025-30 ($2025, millions)

	2025-26	2026-27	2027-28	2028-29	2029-30	Total
Unaccounted for gas	36.1	32.8	27.8	25.1	24.1	145.8
Safeguard mechanism requirements	2.2	2.3	2.1	2.0	1.9	10.4
Licence fees and government levies	4.3	4.3	4.3	4.3	4.3	21.3
Debt raising costs	2.0	2.0	2.0	1.9	1.9	9.7
Total	44.5	41.3	36.1	33.2	32.1	187.2

7. The revenue we require to deliver our 2025 Plan

Highlights

- Our proposed revenue to deliver the 2025 Plan for Transportation RS is $501M higher than the 2020-2025 period. This is largely driven by our proposal to accelerate investment recovery and an increase in rate of return due to market conditions.
- Our revenue requirement for the 2025 Plan includes $300M in accelerated depreciation to expedite investment recovery. The amount of accelerated depreciation was determined following customer consultation and modelling of future demand scenarios.
- While accelerating depreciation raises near-term prices, it lowers longer-term prices to keep the gas network competitive amid falling demand.
- As the energy transformation unfolds, we will revisit depreciation assumptions along with other initiatives to readjust strategies accordingly. This prudent way forward balances bill impacts for current and future customers.

7.1 Our forecast costs for Transportation RS

This chapter sets out our forecast building block costs for Transportation RS. Consistent with the AER's approval of our RSP we treat Ancillary RS separately in our 2025 Plan.[60]

To run our business effectively over the 2025-30 period, we need to earn enough revenue to recover the following costs associated to the provision of the Transportation RS:

- Forecast operating costs.
- Funding costs—interest and other costs related to financing our debt and equity for past and forecast capex.
- Depreciation on our assets—the amount we need to recover over this period so that we will recoup our capital costs over the expected lifetime of each asset.
- Tax costs—to pay our tax liabilities over the period.
- Forecast incentive scheme related revenue adjustments.

We recover these 'building block costs' from our customers using an approach specified in the gas regulatory framework (see Figure 7.1). These building block costs form the basis of our forecast revenue which is approved by the AER and earned from our customers through our Transportation RS network tariffs. More information on each of these building blocks is outlined in sections 7.2 to 7.5.

60 We discuss the Ancillary RS in section 10 pricing.

Figure 7.1: Building block costs

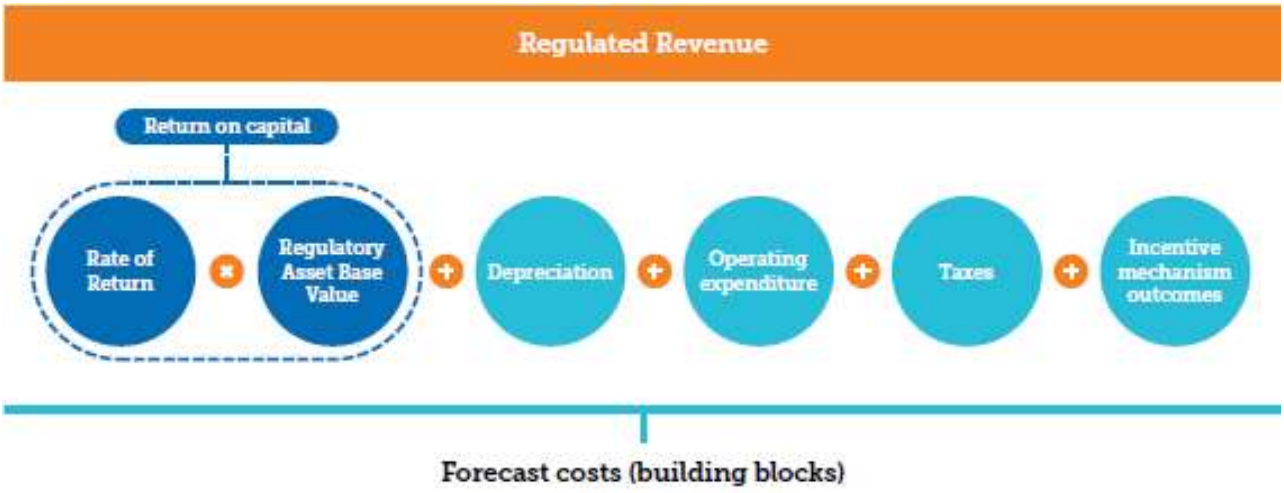


Table 7.1: Revenue and price build-up from building block elements for Transportation RS ($2025, millions)

	2025-26	2026-27	2027-28	2028-29	2029-30	Total
Return on capital	203	197	192	187	180	959
Depreciation (return of capital)	119	125	132	138	145	658
Operating expenditure	238	231	229	227	230	1,155
Incentive schemes	36	4	(16)	5	6	34
Net tax allowance	14	14	14	15	16	74
Annual revenue requirement	609	571	551	572	577	2,881
Price path (in real terms)	1.93%	1.89%	1.89%	1.89%	1.89%	
Price path excluding incentives (in real terms)	1.50%	1.50%	1.50%	1.50%	1.50%	

Figure 7.2: Our building block revenue for transportation services from 2025-30 ($2025, millions)

Note: (1) In 2020-25, we returned $204M of revenue we received from customers in the previous period. This hand back was made by adjusting our 2020-21 unsmoothed revenue.

(2) Prior to 2025-26, transportation and ancillary services are treated as one reference service covered under the building block revenue. From 1 July 2025 onwards, ancillary and transportation services are separated and the building block revenue covers only transportation services

The revenue that we require to deliver our 2025 Plan for Transportation RS is $501M higher than the revenue allowance for the current 2020-25 period. The key drivers for this difference include:

- For the current 2020-25 planning period we included a downward adjustment to our 2020-25 building block costs, to return approximately $204M of revenue over-recovered from the 2015-20 period.
- The forecast revenue for 2025-30 period includes recovery of $300M accelerated depreciation, discussed in section 7.3, which was not included in our 2020-25 revenue allowance.
- The return on capital for 2025-30 period increased by $106M due to changes in market conditions increasing financing costs
- Our opex forecast reduced by $24M due to efficiency savings we achieved in the current period
- Our incentives scheme revenue increased by $48M due to the introduction of CESS in the 2025-30 period and our underspends against both opex and capex allowances, delivering long-term savings to customers

The increase in revenue leads to an average $60 per annum increase per customer but remains stable per customer when compared over the three planning periods, as shown in Figure 7.2. The average increase would have been lower if our 2020-25 period revenue had not been reduced by the $204M return of revenue over-recovered from the 2015-20 period.

Throughout our Gas Networks 2050 engagement program, customers and stakeholders have empathised the need for fairness across generations when considering how we best respond to the challenges of the energy transition. One clear message that came through on the topic of planning for the future was that we must act now, rather than delaying action.

As discussed in Chapter 4, our 2025 Plan will implement a suite of initiatives that seek to minimise adverse customer outcomes and price shocks over the long term. Recognising affordability and cost of living pressures impacting customers today, we have also sought to carefully balance the need to take action now against the short-term price impacts of our plans. We believe that our 2025 Plan reflects a balanced approach and that while implementing these initiatives will increase the revenue per customer over the 2025 Plan period, if we do not take action now, customer outcomes will be worse over the long term.

7.2 Return on capital

Our funding costs are based on an estimate of the return on equity and the return on debt over the 2025 Plan period, which combined together informs our return on capital allowance.

The NGR outline the framework for calculating the return on capital, and the AER's 2022 Rate of Return Instrument (2022 RORI) version 1.2 (published in March 2024) details the approach we must follow when calculating each return on capital parameter. This also includes the AER's estimated value of imputation credits to equity holders, which is used to calculate the cost of tax component of the building block revenue.

The return on capital varies with changes in interest rates which are determined by market conditions and our forecast regulatory asset base (RAB), which is the value of all our assets we use for the provision of gas network services. Figure 7.3 shows how our RAB is determined each year. The RAB is multiplied by the rate of return to arrive at the return on capital allowance. We estimate that the real RAB at the start of the 2025-30 period will be $3.87B and will decrease by approximately 9% to $3.52B by the end of the period. This decrease as shown in Figure 7.4 is due to our proposal to accelerate depreciation over the 2025-30 period which is deducted from our RAB.

Over the 2025 Plan period, we expect that the real RAB per customer will decrease from $2,484 to $2,261, which is a reduction of over 9%. A lower RAB per customer is in the long-term interests of customers as it will place downward pressure on future network bills.

Figure 7.3: How our Regulatory Asset Base is Calculated

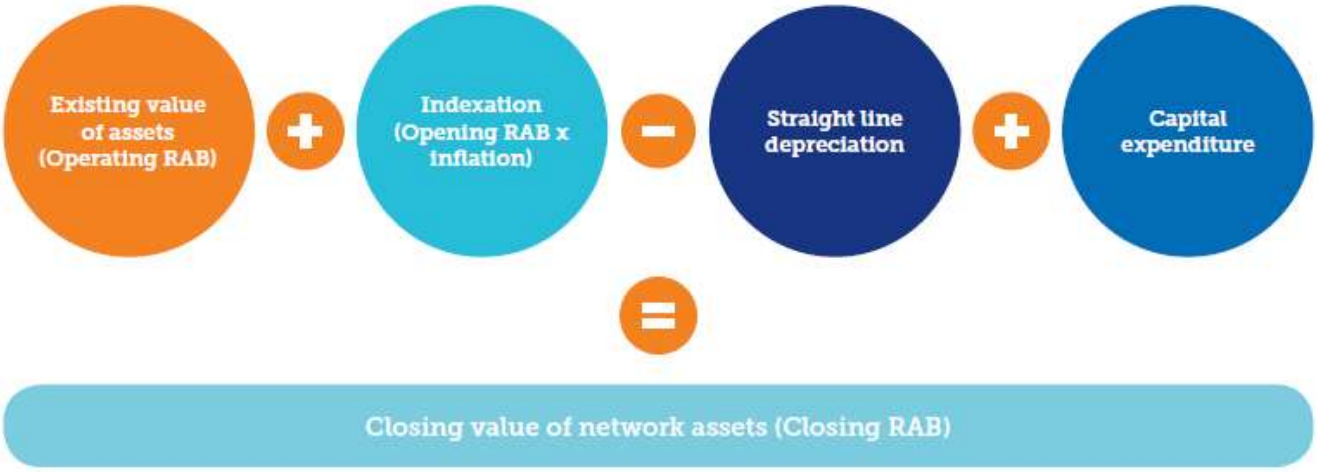
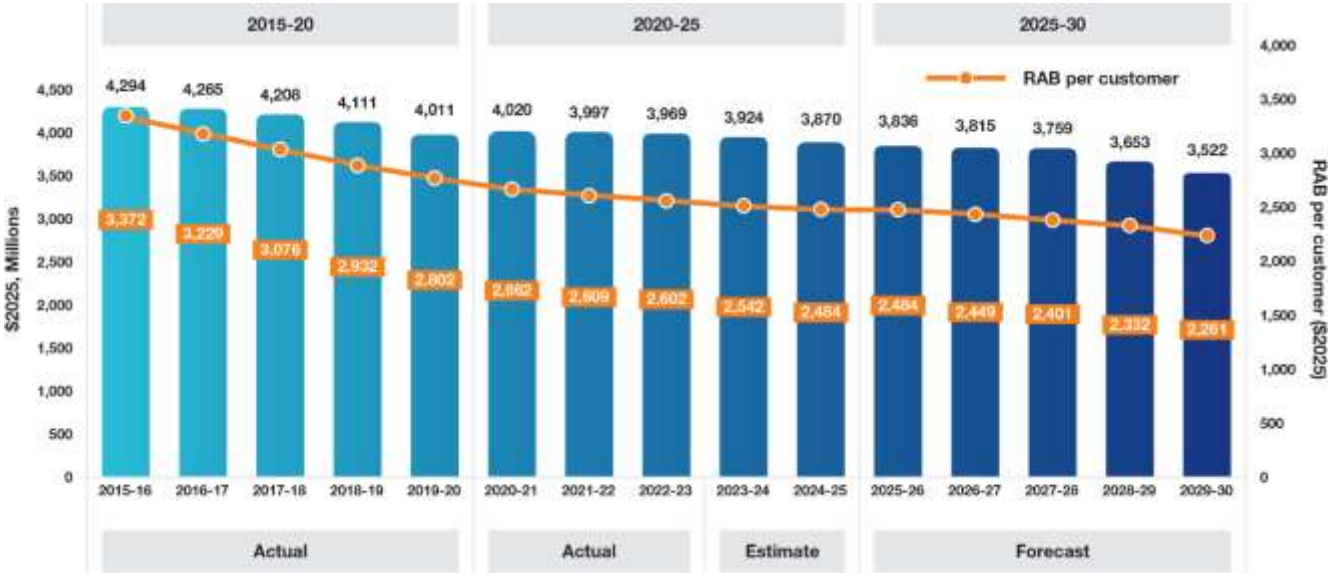


Figure 7.4: Changes in our real regulated asset base over time ($2025, millions)



In line with the 2022 RORI, our calculation of the rate of return proposes a 5.2% rate of return on the RAB for the 2025 Plan. Table 7.2 outlines the parameters that we used to calculate the rate of return. We have used placeholder values for - risk free rate used for estimating return on equity, annual observations for estimating return on debt and forecast inflation.[61]

The demand risks and uncertainties we face as a result of the energy transition are not accounted for in the rate of return parameters. To mitigate these risks, we are proposing to accelerate the depreciation of our assets which we discuss in the following section.

61 These estimates will be updated by the AER when it makes the decision for JGN - using actual averaging periods nominated by JGN for equity and debt and using latest monetary policy statement published by the Reserve Bank of Australia (RBA) at the time of AER's decision.

Table 7.2: Our proposed rate of return

Parameter	Value
Return on equity	6.90%
Return on debt	4.08%
Inflation	2.79%
Leverage	60.00%
Gamma	57.00%
Corporate tax rate	30.00%
Nominal vanilla WACC	5.21%

NOTE: Both Return on debt and Nominal vanilla WACC are 5-year averages (2025-30)

7.3 Depreciation

Depreciation, or the return of capital, returns the capital investments that we make over the expected useful life of the assets. It is returned to our investors to enable them to fund the purchase of new assets and replace existing assets when they reach the end of their useful life to ensure the ongoing provision of reliable gas services. We have calculated our proposed depreciation allowance using the approach required in the NGR and consistent with the AER's expectations.

In addition to the standard approach to calculating depreciation which we refer to as straight-line depreciation, we are proposing to accelerate the recovery of some of our existing investments. *JGN - Att 7.3 – Depreciation approach* – explains the context and drivers for accelerating capital recovery, which is one of the key mitigation initiatives we are proposing to support a smoother energy transition, as discussed in Chapter 4.

The current regulatory practice of assuming long economic asset lives and back-ended capital recovery was set at a time when the number of customers using the gas network was expected to grow in perpetuity. This treatment allowed both existing and future customers to pay for their share of gas infrastructure. However, as long-term future gas demand is expected to decline due to changing government policies, this treatment could mean that more costs are spread over fewer customers in the future. 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 renewable gas option in the future.

Our proposed approach to accelerate the recovery of our capital base is consistent with the policy objective for depreciation, and economic regulation more broadly. This is because it will help provide confidence to our investors that the investments, they make in our network will be recovered over their economic life. In addition, as the return on capital allowance does not allow gas distribution companies to earn a higher return despite the risk of asset stranding, we think that it is appropriate to look at other ways, such as accelerating depreciation, to recover our costs with more certainty.

Accelerated deprecation provides a number of benefits in terms of supporting the efficient future utilisation of our gas network, including:

- Avoiding the potential for the inequitable capital recovery of our assets, helping ensure that gas remains more affordable over the long term, which will help mitigate customers leaving the network earlier than they may otherwise need or want to.

- Minimising the impact associated with demand responses because the relative difference between gas and electricity prices remains stable, so that gas continues to be price competitive. This protects the longer-term interest of customers who remain on the gas network and helps prolong the life of our network, providing customers with choice of fuel and access to our network into the future.
- Encouraging continued investment to maintain network reliability by assuring our investors about capital recovery.

Accelerating regulatory depreciation changes the timing of cash flow to our business but does not change the value (in net present value terms) of the costs that we recover. This avoids any potential to create windfall gains or losses. Regulatory depreciation can also be reviewed at each planning period and it can be adjusted as circumstances change in the future.

Our Future of Gas analysis (*JGN – Att 7.4 – Future of gas analysis*) has enabled us to test different depreciation profiles across the four plausible future scenarios developed by the Expert Panel to formulate a measured accelerated depreciation allowance which can deliver stable bills over the long term and lower stranding risk by ensuring efficient future utilisation of our network. The core to this long-term model is based on economic theory by Crew and Kleindorfer (1992)[62], 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 scenario model has been used extensively for assisting our Expert Panel and Advisory Board discussions. This analysis was designed to help JGN, its customers and other stakeholders to understand the impact of different future scenarios and impact of different mitigation initiatives such as accelerated depreciation on customers and our gas network over time. It provides a transparent way to compare the end-customer gas price with the alternative scenarios of electrifying gas appliances, such as hot water systems, space heaters, and cooktops – under each future scenario. The end-customer electrification costs are converted into a $/GJ charge based on the energy consumption of electricity and gas appliances and gas-to-electric efficiency rates. Comparing these costs to those projected if customers continue using gas allowed us to assess how much customers may be willing to pay for gas under different future scenarios.

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

Figure 7.5: End-customer energy prices for residential customers after accelerating depreciation

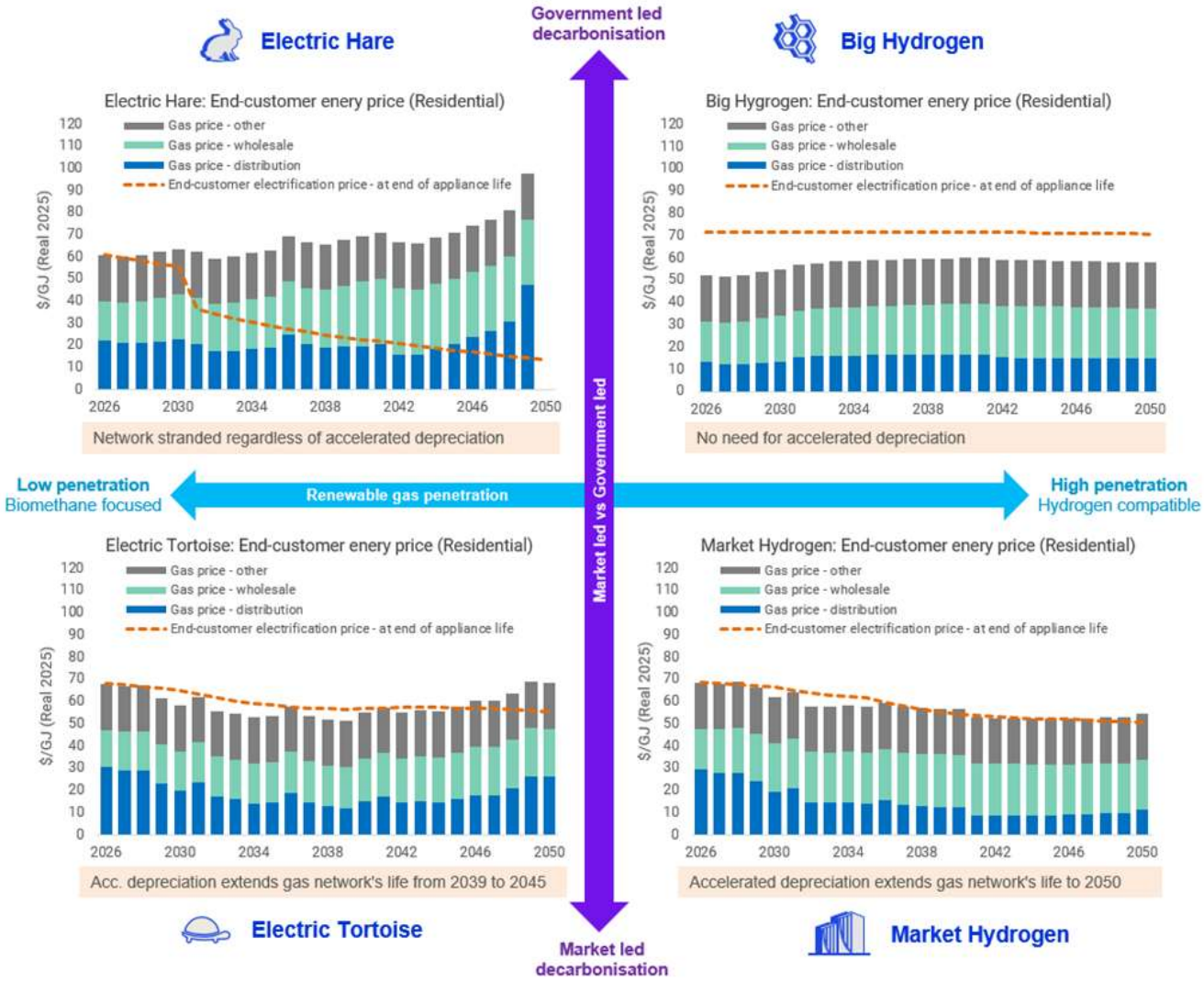


Figure 7.5 demonstrates that under our proposal to accelerate asset recovery, end-customer gas prices remain competitive against electricity (shown by the orange dashed line) for an extended period in both the Electric Tortoise and Market Hydrogen scenarios.

In the Electric Tortoise scenario, gas prices remain below electricity prices until 2046, and in the Market Hydrogen scenario, this competitiveness extends to 2050. In the Electric Hare scenario, the impact of presumed government subsidies to support the uptake of electric appliances leads to gas becoming uncompetitive from 2031, regardless of any market interventions.

Under the Big Hydrogen scenario, there is a lower demand response as gas remains competitive throughout the forecast period which means a lower reliance on accelerated depreciation that is complemented with a higher level of investment in our network to support renewable gas.

As illustrated in Figure 7.6, accelerated depreciation flattens prices over time across all scenarios and supports the long-term affordability of gas. This shows that it is prudent to act early to manage the future risk of asset stranding and allows flexibility to adjust deprecation over time as more information becomes available. Note no accelerated depreciation is needed in Big Hydrogen as there is only negligible stranding risk.

Of the four plausible scenarios it developed, the Expert Panel considered that the Electric Tortoise scenario had the greatest likelihood of eventuating. Acting early by taking smaller steps through a measured approach to accelerate investment recovery is particularly effective under this scenario, providing stable pricing for customers in the longer term and supporting the efficient future utilisation of the gas network.

Figure 7.6: Comparison of gas prices with and without accelerated depreciation

7.3.1 Our engagement with customers

Our Advisory Board saw accelerated depreciation as an important lever for us to use when responding to gas uncertainty and supported this lever proceeding into the Customer Forum engagement.[63]

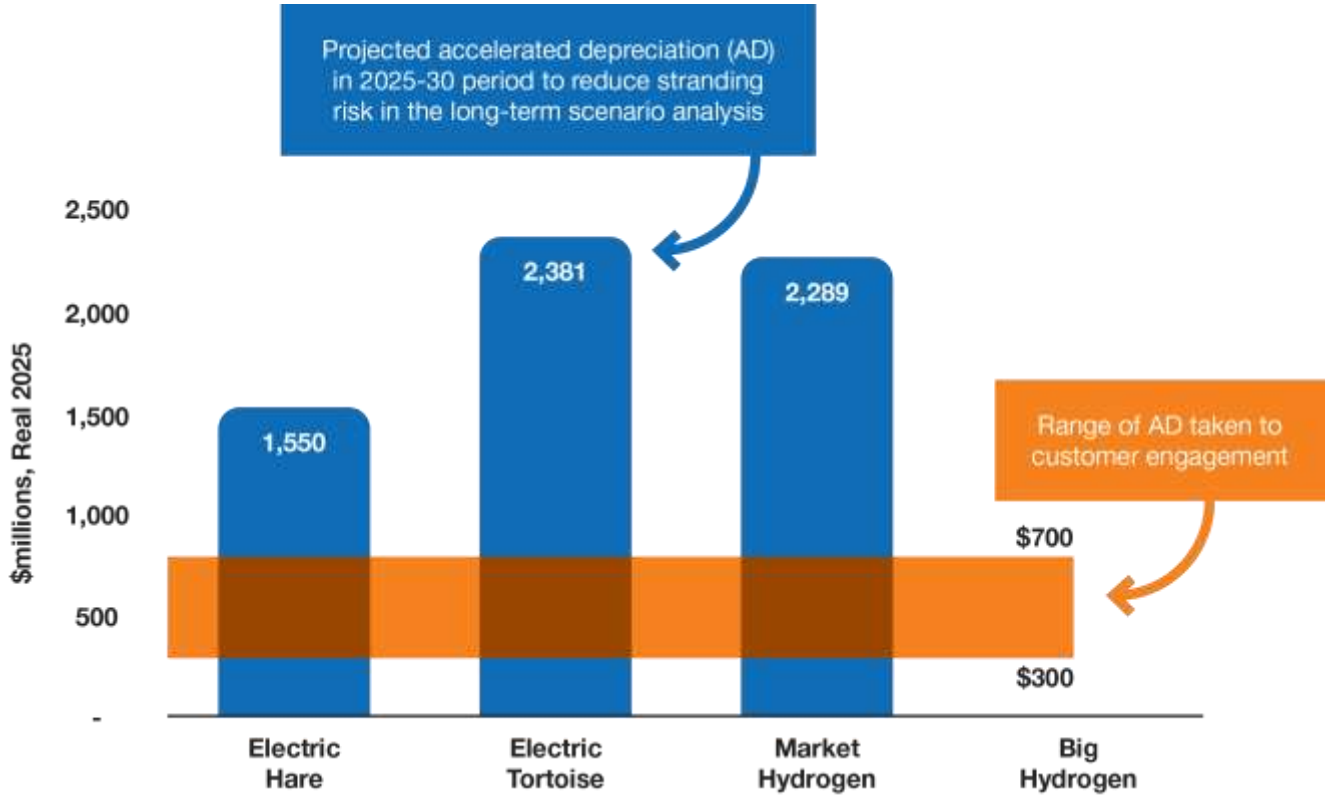
To help inform our proposed accelerated depreciation allowance we collaborated with the Customer Forum on the range of accelerated depreciation options put forward. To determine the range of options, we used our Future of Gas model (*JGN – Att 7.8M – Future of gas model*) which projected a broad range of accelerated deprecation options over the 2025-30 period to reduce the risks of asset stranding, as shown by the blue bars in Figure 7.7. Recognising that affordability is a key customer value, we limited the accelerated depreciation options that we explored with the Customer Forum to the lower of range of $300M-$700M. We believe that this strikes a balance between current concerns around affordability and mitigating stranding risk.

Initially, a $0M option was not put forward to the Customer Forum as we consider this would not support the immediate need to respond to the uncertainty presented by the energy transition to net zero. Additionally, presenting an option that we would not contemplate goes against our engagement objectives, discussed in Chapter 2, which includes building trust and collaboration with customers in formulating our 2025 Plan.

At the time of publishing our Draft 2025 Plan we held a 'closing the loop' session with the Advisory Board and some members of the Expert Panel that included an overview of our key proposals, highlighting how recommendations from the Customer Forum shaped our plans. Reflections on the Draft 2025 Plan were provided with some members suggesting a desire to better understand the customer recommendation on accelerated depreciation and that this be further socialised with customers, including a zero option.

We used the recall session (Forum 8) to explore zero accelerated capital recovery with Customer Forum participants. We then retested the level of comfort with the $300M option that customers had voted for in Customer Forum 7.

Figure 7.7: Projected accelerated depreciation over 2025-30 under the Expert Panel scenarios and taken to customer engagement



Note: The blue bars presented in this chart correspond to the 2025-30 values illustrated in Figure 7.7 above. In Electric Tortoise and Market Hydrogen, the $2.4B and 2.3B of accelerated depreciation, respectively, mitigates stranding risks and prolongs the life of our network. However, Electric Hare faces limitations due to government electrification incentives, reducing accelerated depreciation to $1.5B and leaving significant stranding risks unaddressed. No accelerated depreciation is needed in Big Hydrogen as it faces little stranding risks.

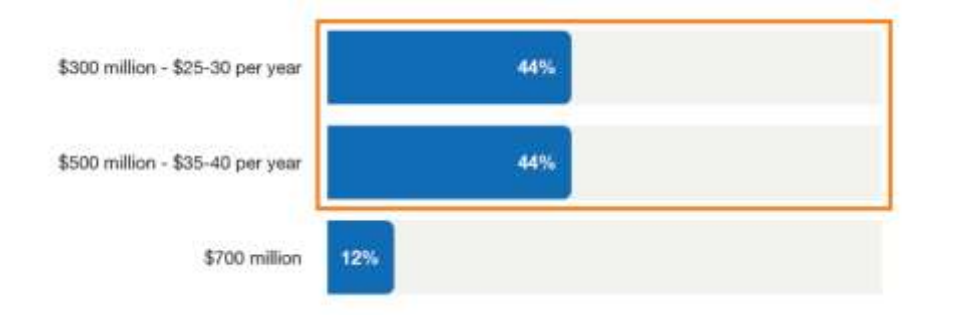
63 KPMG, Advisory board series outputs report, May 2023, p.10

Customer Forum 5

During Customer Forum deliberations participants were mindful of affordability and the impact of the energy transition on those customers who may be more sensitive to price rises. Customer Forum participants highlighted the importance of finding the right balance between current cost of living pressures and proactive initiatives focussed on long term customer outcomes, including accelerated depreciation.

A breakdown of voting from Customer Forum 5 held in July 2023, is shown in Figure 7.8 below, with 44% of customers (or 15 people) voting for $300M, and 44% of customers (or 15 people) voting for $500M, and 12% (or 4 people) preferring the $700M option[64].

Figure 7.8: July 2023 Customer Forum voting on accelerated depreciation



In Customer Forum 7 held in September 2023, we retested the accelerated depreciation options with our customers. Due to the lack of support for the $700M option in July, we only brought forward the $300M and $500M options for further consideration. The votes from the Forum participants are shown in Figure 7.9.

Figure 7.9: Customer Voting in September 2023 on Accelerating Capital Recovery

In deliberative processes, we aim for 80% majority in reaching a general consensus. Participants were supportive of this initiative but were torn between the $300M and $500M options, primarily due to affordability concerns and wanting to keep bills as low as possible for the 2025 Plan period.

Although the support for this initiative fell slightly short of 80%, the Customer Forum expressed support for this initiative when it considered it as part of the full package of initiatives, as evidenced by Customer Forum Recommendation 6, and by its voting on the final package of initiatives (accelerated depreciation plus the other initiatives we tested) in Customer Forum 7, with 89% in support.

64 In this forum, customers are asked to choose between the 3 options - $300M, $500M and $700M.

Customer Forum 8

We provided Customer Forum 8 participants with information about the implications of zero acceleration, and then retested the level of comfort with the $300M option. A “Human Library” comprising Douglas McCloskey (PIAC), Gavin Dufty (St Vincent de Paul) and Stephen Gray (Frontier Economics) was formed to offer a diverse range of perspectives on the topic.[65]

The voting in Customer Forum 8 used the L scale approach to test that customers were still comfortable with the $300M option.

The voting results showed an increase in support for accelerated depreciation compared to Forum 7, with 84% of the group saying they could at least live with $300M. The votes from the Forum participants are shown in Figure 7.10.

Figure 7.10: Customer Voting in September 2023 on Accelerating Capital Recovery

Scale	Votes	%
Still comfortable with $300 million?		
Love	1	3%
Like	17	45%
Live with	14	37%
Lament	5	13%
Loathe	1	3%
Total votes	38	**100%**
Total > live with	**32**	**84%**

Following forum 8, we appointed Sagacity Research and JD Insights to conduct surveys and in-depth interviews of Customer Forum participants to test whether they understood the topics they deliberated on to make informed recommendations that have influenced the 2025 Plan – see section 3.1.2. As part of exploring participants understanding of the key topics, the research explored customers understanding of the role of accelerated depreciation. Of the 22 participants surveyed, 17 felt they had good to excellent knowledge of the topic with 4 participants feeling they had average knowledge but enough to provide informed feedback.

7.3.2 What is our proposal on accelerated recovery

For the 2025 Plan we have included an accelerated depreciation allowance of $300M. In determining the proposed level of accelerated capital recovery we consulted with customers, projected demand outlooks for the four future scenarios to understand the competitiveness of gas relative to electricity and modelled the billing implications for each scenario to appreciate the longer-term impact to customers. For more details see *JGN – Att 7.3 – Depreciation approach* and *JGN – Att 7.4 – Future of gas analysis*.

Taking these factors into consideration we have adopted a measured approach to accelerated deprecation that is balanced when considered against the other initiatives. For example, the accelerated depreciation that we have proposed is far less than what would be required if we were planning for a future in which our network had no role to play in a decarbonised energy sector. Indeed, under all of the four plausible future scenarios developed by the Expert Panel, our network will continue to play a role beyond 2050, transporting renewable gases. Our proposed investment in renewable gas connections complements our proposal to accelerate depreciation, with both initiatives reducing future asset stranding risk, and extending the life of the gas network for our customers.

65 *JGN – BD Infrastructure - Att 2.2 – Customer forum engagement report* – Public, p.29.

In consolidating all the initiatives, we intend to undertake over the 2025-30 period, including accelerated depreciation and renewable gas investments, we are proposing a modest real price increase of 1.89% to 1.93% per annum over 2025 Plan period. This prudent approach allows us to balance the immediate financial impact on customers while positioning ourselves strategically to support the efficient future utilisation of the gas network.

While accelerated depreciation increases prices in the short term, it places a downward pressure on prices in the long term, as we demonstrate in Figure 7.6. This will help our gas network stay competitive, support the transition to renewable gas, and help keep prices lower for remaining customers as demand reduces across the network. This in turn avoids the potential for any inequitable capital recovery of our assets. It also lowers the risk to our investors that they will not be able to recover all the investments that they have committed to in our gas network.

As we learn more about how the transformation of the energy sector will progress, we will revisit our depreciation assumptions in conjunction with our other initiatives and readjust our strategies accordingly in future planning periods.

7.4 Incentive scheme arrangements

The regulatory framework incentivises us to find more efficient ways of delivering our services, which ultimately benefits customers in the form of lower bills. Incentive schemes give us temporary 'rewards' in the form of increases in revenue for performing well, and 'penalties or reductions in revenue if we don't. The schemes are designed to pass the benefits of improved efficiency to customers over time. See *JGN – Att 7.11 – Incentive schemes* – for more information.

Operating cost efficiency scheme

We are currently subject to an operating cost efficiency scheme known as an efficiency carryover mechanism (ECM). The system provides us with a continuous incentive to identify and improve operational efficiencies. Any savings we make are shared with our customers in a ratio of approximately 70% (customers) to 30% (JGN). As a result of our performance against this incentive scheme, we will either receive a reward or a penalty in our revenue in the following regulatory period. In other words, our performance in the current regulatory period impacts the amount of revenue we receive in the next period.

We are forecasting additional revenue of $4M over 2025-30 due to our performance against this incentive scheme in the current regulatory period 2020-25. This reward in our revenue demonstrates that we are responding to the incentives to reduce our opex where possible.

Our current view is that we should retain this incentive scheme for 2025-30, which will apply to our Transportation RS. We believe that this is in the long-term interests of our customers, as it will help drive us to deliver ongoing efficiencies.

Capital expenditure sharing scheme (CESS)

The CESS incentivises us to only undertake efficient capex during a regulatory period by rewarding efficiency gains and penalising efficiency losses. Consumers benefit from the improved efficiency via lower network prices in the future associated with a lower RAB value. When the CESS is applied in conjunction with other incentive schemes such as the ECM, we are incentivised to balance opex, capex and service performance objectives, which supports outcomes aligned to our customers' long-term interests.

Our CESS includes a contingent payment mechanism to ensure that CESS payments are contingent on us maintaining service quality. The contingent payment mechanism reduces rewards where JGN's service performance falls below its historical targets. This means that CESS incentive payments will reduce if cost efficiency is gained by compromising service quality.

Our contingent payment mechanism incorporates six service quality parameters: unplanned SAIDI[66]; unplanned SAIFI[67]; leaks in mains and services; leaks in meters; confirmed poor supply; and estimates of meter reads. The targets for these service quality parameters are determined using historical performance. Actual service performance is measured against the set targets. Over the current period, we have met our service quality targets.

66 This is a measure of the duration of unplanned outages across our network.

67 This is a measure of the frequency of unplanned outages across our network.

In the 2020 Plan period, the capex assessed under the CESS excludes costs associated with new connections, recognising that it is driven by customer-initiated connection volumes beyond JGN's control. In the 2025 Plan period, we expect to connect renewable gas suppliers to our network as the regulatory framework evolves. The number of renewable gas suppliers seeking connections to our network are beyond our control. Therefore, we propose to exclude capex for renewable gas connections from the CESS. This ensures that our performance is not unduly influenced by the number of renewable gas facilities seeking connection. By doing so, the capex categories covered under the CESS can accurately reflect controllable expenditure, and that rewards and penalties genuinely reflect efficiency improvements we achieve.

The building block costs used to calculate the annual revenue requirement for each year of the regulatory control period must include revenue increments or decrements for the relevant regulatory year arising from any CESS. We are forecasting additional revenue of $30M due to our CESS performance.

We propose to continue to apply the CESS in the 2025-30 period given its impact on long term affordability for our customers through a lower RAB value.

7.5 Corporate income tax

Compensation for the cost of tax is necessary to ensure that sufficient funds are available to meet our tax obligations. The NGR require that the cost of corporate tax is estimated as a separate building block. Apart from capex and opex, the principal inputs that go into the calculation of the tax building block item are taxable income, the statutory income tax rate, and the value of imputation credits as estimated by the AER in its 2022 RORI.

Combining these inputs and incorporating the outcome from recent AER reviews, we estimate a tax building block of $74M over the 2025-30 period.

8. Forecasting new connections and gas consumption

Highlights

- We engaged an independent expert to develop the forecast of new connections and gas demand for our 2025 Plan.
- We expect to see reductions in new connections and demand in our volume market over the 2025-30 period.
- The forecast reduction in consumption of the volume market is validated by aligning with similar downtrends in AEMO's main scenarios from its 2024 GSOO.
- Gas consumption by JGN's demand market customers is forecast to decline over 2025-30. Some large, surveyed customers forecast increasing consumption as they switch from higher emission fuels. Other customers with processes easier to electrify are expected to reduce their consumption. The trend of decline is consistent with AEMO's main scenarios from its 2023 GSOO.

8.1 New connections and gas demand over 2025-30

Our customer number and gas consumption forecasts are an important component of our 2025 Plan. These forecasts influence our costs and are used to calculate prices for our Transportation RS.

We commissioned Core Energy & Resources (Core) to prepare an independent forecast for the 2025-30 period. Core has significant experience in energy forecasting, having prepared forecasts for AEMO and several network businesses, including us in prior regulatory periods. We selected Core as its methodology and forecasts have previously been reviewed, tested and accepted by the AER.

In completing our forecast demand, Core has considered changes in circumstances (including the impact of COVID) and changing Government policy on greenhouse gas (GHG) emissions, including future gas use and the transition of the energy market as reflected in our four Expert Panel future scenarios (in particular, the impact on connections resulting from changing our connections policy so that more customers are required to make an up-front contribution if they wish to connect to our network).

Core has forecast that new connections and demand will decline over the 2025-30 period. This Chapter describes Core's forecasting methodology, current trends in our demand and Core's resulting forecasts of new connections and gas demand over the 2025-30 period.

8.2 Forecasting methodology

We split our customer base into two markets:

- The **volume market** which consists of residential and small business customers who use less than 10TJ of gas per year and are generally charged on how much gas they consume.
- Our **demand market** consisting of our largest customers who consume more than 10TJ a year. These customers are primarily charged on how much capacity they require.

Core applies a different forecasting approach for each market.

For our volume market, Core prepares a forecast of customer numbers and the likely average gas consumption for our customers, which it combines to forecast the total gas demand. Core has used an econometric model to forecast gas demand across the 1.5 million customers in the volume market, by determining the relationship between gas demand and variables like weather and energy efficiency of appliances.

Core's key steps in approach to forecasting volume demand for our residential and small business customers are as follows:

1. Analysis of our historical connection numbers, temporary disconnection and abolishment data over the last 15 years.
2. Forecast disconnections based on the historical average of disconnections as a percentage of the year-opening number of connections, and adjusting for any factors which vary between the forecast and historical periods.
3. For our residential customers, forecast the number of new connections based on independent forecasts of dwelling commencements in NSW (developed by the Housing Industry Association of Australia (HIA)) and consideration of the average historical relationship between dwelling commencements in NSW and new connections and number of disconnections based on the average historical rates. Core allocates new connections to dwelling types (single, medium density and high-rise dwellings) based on dwelling information provided by the HIA.
4. For our small business customers, forecast the number of net connections based on historical average new connections and disconnections.
5. Weather normalises the data to identify the trend in forecast consumption per connection. In the case of residential customers, the forecasts of consumption per connection are developed for each dwelling type, reflecting different average levels of consumption per connection.
6. Adjust the forecast trend in consumption per connection for any new drivers or changes in existing drivers that are not included in this historical trend which are expected to influence demand per connection including economic activity, government policy, appliance switching and building and appliance efficiency trends. Core considered key economic factors produced by the Australian Bureau of Statistics (ABS).
7. Multiply consumption per connection-by-connection numbers to forecast total demand.

Given the smaller number of our large demand market customers, it is feasible to consider known load changes for these customers. To assist with this process, we surveyed the top 20 customers to understand their plans around their future gas usage. Core used this information as an input to its forecasting model. Core also analysed the customers in sector groups to differentiate between hospitals, manufacturers and so forth, and tested relationships between each sector's consumption with weather trends and economic activity. When a trend was identified, it was used to forecast consumption in the future.

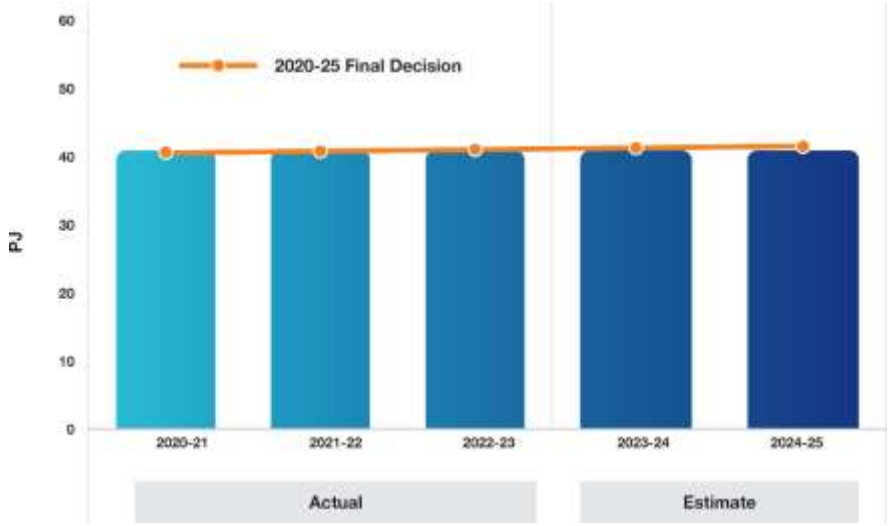
We note that Core has updated its demand forecast that was included within the Draft 2025 Plan to account for more up to date information. The resulting final forecast has not changed significantly. Core's report is available at *JGN – Core Energy – Att 8.2 – Demand Forecast Report*.

8.3 Volume market

8.3.1 Volume market demand 2020-25

Figure 8.1 shows that the total volume market demand over the current 2020 Plan period is expected to be very close to the AER's Final Decision for our 2020 Plan, which was based on our revised demand forecast prepared by Core and submitted to the AER for approval as part of our 2020 Plan.

Figure 8.1: JGN actual and estimate volume market demand over the 2020-25 period

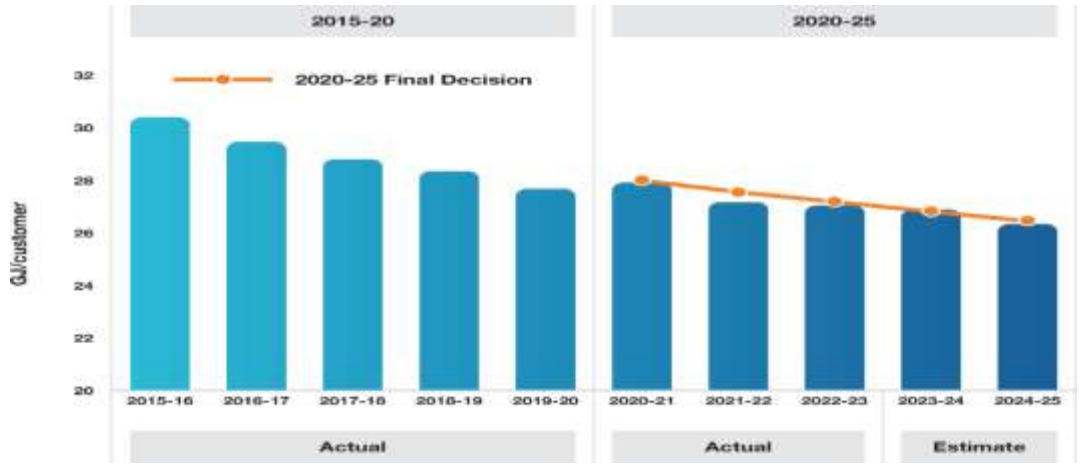


As our network has grown and we have connected more customers, total gas consumption has increased.

Despite growth in customer numbers, we have continued to see a steady decline in consumption on a per customer basis as shown in Figure 8.2. The reduction in consumption is driven by a combination of factors including energy efficiency improvements, appliance substitution, smaller dwellings and higher gas prices.

Figure 8.2 also shows that our actual and estimated consumption per customer for the volume market is close to the AER's Final Decision for our 2020 Plan.

Figure 8.2: Volume market actual and estimate consumption per customer 2015 to 2025



The trend of reducing consumption per connection has continued into the current period, noting that 2020, 2021 and 2022 were impacted to varying degrees by COVID and resulting shutdowns influencing changes in consumption patterns for residential and commercial customers.

8.3.2 Volume market demand 2025-30

Figure 8.3 shows our actual and estimated volume market demand over the 2015-2025 period, and Core's forecast volume market demand over the 2025-2030 period. It also shows for the current 2020-25 period how our actual and estimated market volume demand compare with the AER's 2020-25 Final Decision, and for the whole period how it compares to the AEMO forecast in its 2024 Gas Statement of Opportunities (GSOO).

Figure 8.3: JGN actual, estimated and forecast volume market demand over 2015-2030 (PJ)

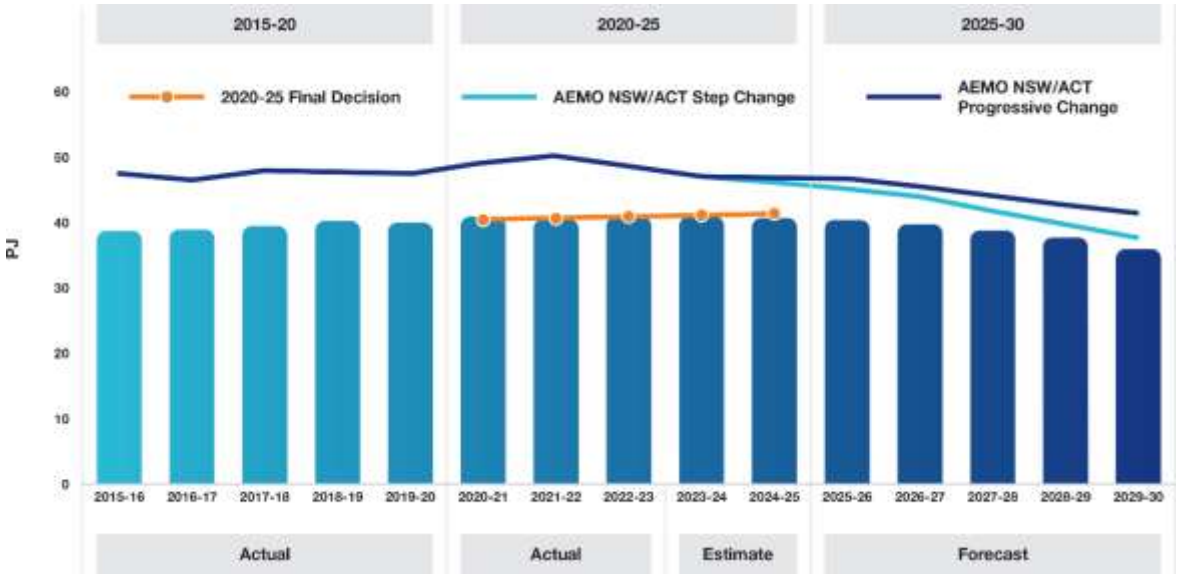
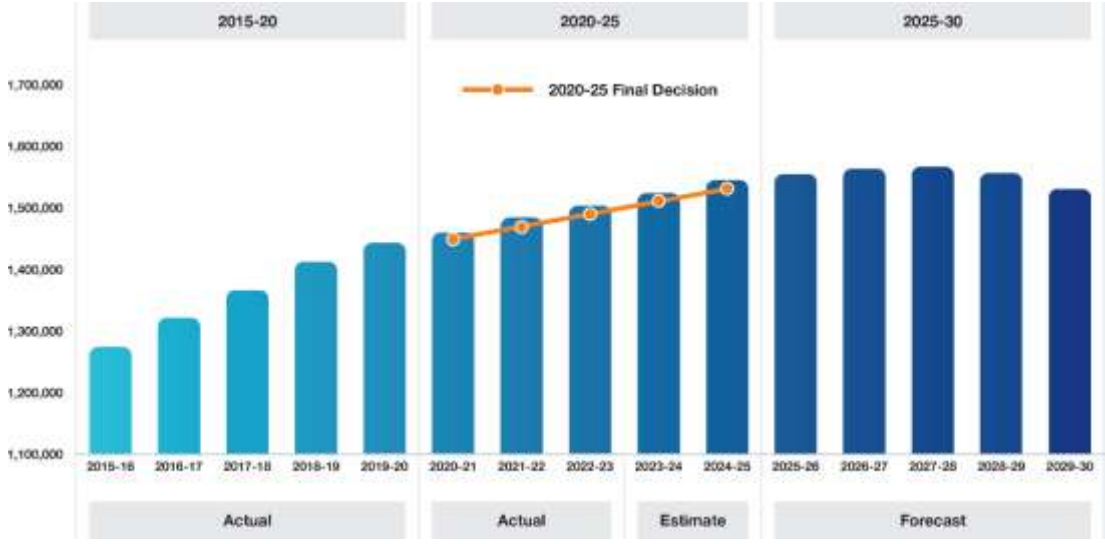


Figure 8.3 shows that Core forecasts the total volume market demand to decline over the 2025-30 period by an average of 2.29% per annum, with residential demand forecast to decline by 1.70% per annum and commercial demand by 3.63% per annum. This is driven by lower forecast net reductions in our customers and continued decline in the average consumption per customer, but at a faster rate as the energy market transitions.

Figure 8.4 shows that Core has forecast the total number of customers on our network will start reducing towards the end of the 2025-30 period.

Figure 8.4: Volume market customer numbers



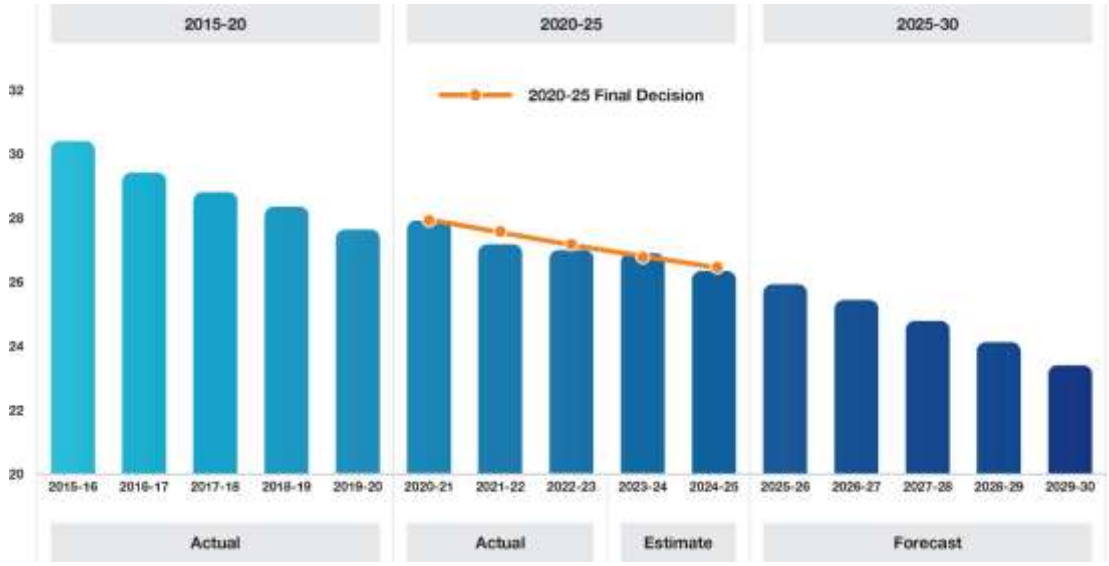
The reduction is due to the forecast number of customers connecting to the gas network being less than the number of connections being abolished or temporarily disconnected each year which is driven by:

- Lower residential (as forecast by Housing Industry Association of Australia) and commercial development and construction rates across NSW.
- Changes to our connections policy which will result in fewer connections being provided free of charge to residential customers.
- A significant decline in penetration rate of new gas connections relative to the building activity. This is driven by:
  - material growth in dwelling activity in areas outside the JGN network area
  - a higher proportion of multi dwelling development activity which has a materially lower penetration rate than detached homes
  - forecast increase in full electrification of new dwellings – as observed through disclosures by developers, builders, and certain Councils.
- A slower rate of growth in small business activity due to a lower rate of economic growth for several years which impact the forecast for the 2025-30 period (including 2023-24 and 2024-25 which influence the opening base of connections in the 2025-30 period).

The reduction in total customer numbers is further enhanced by Core forecasting an increase in the number of customers seeking to either abolish or temporarily disconnect from gas as a consequence of choosing to electrify their homes and no longer using gas.

Core is also forecasting a continued reduction in average consumption per volume market customer as shown in Figure 8.5.

Figure 8.5: Volume market average consumption per customer (GJ/customer)



The reasons for the reduction are slightly different for each customer group.

For residential customers, the reasons include:

- Electrification trends including increasing solar and battery storage penetration as a substitute for gas, and replacement of gas heating with reverse cycle air-conditioning when appliances are due to be replaced or during renovation.
- Growing trend in use of alternative water heating technologies.
- Advances in dwelling construction standards which favour alternative energy sources.
- Changes to the Building Sustainability Index (BASIX[68]) making it easier for all electric homes to meet BASIX standards and requiring solar panels to be installed to supplement a 5-star gas hot water system (which was commonly used to meet the required energy standards).

68 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.

- High proportion of new multi-story dwelling connections which have a lower demand/customer.

For commercial customers, the reasons include:

- Electrification of new buildings and NSW planning laws favouring electrification.
- Continuing advances in energy efficiency.
- Growing trends in using alternative water heating technologies and reverse-cycle air conditioning.

8.3.3 Validation of our volume market demand forecast

Figure 8.6 shows a comparison of the Core volume market forecast against the latest forecast presented by AEMO within its 2024 GSOO to check for alignment in forecast trend assumptions.

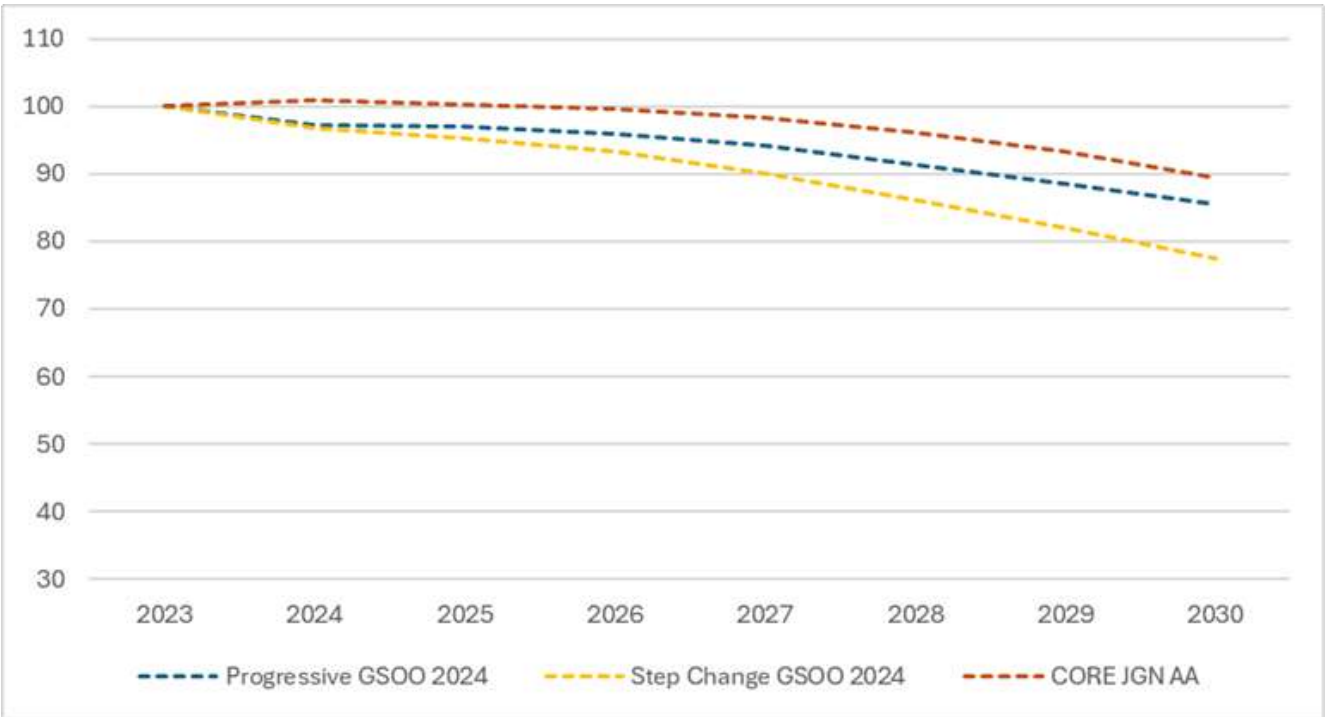
The gap between our total volume market forecast and AEMO's is due to our volume market gas consumption representing about 80% of total consumption across NSW and the ACT. The remainder of the AEMO volume market forecast consumption comes through other networks (such as the Canberra network), which has higher average consumption per customer due to the relatively colder climate.

In its 2024 GSOO, AEMO defines three scenarios:

- Step Change – achieves a scale of energy transformation that supports Australia's contribution to limiting global temperature rise to below 2°C compared to pre-industrial levels - electrification is a key enabler.
- Green Energy Exports – reflects very strong decarbonisation activities domestically and globally aimed at limiting temperature increase to 1.5 °C, resulting in rapid transformation of Australia's energy sectors, including a strong use of electrification, green hydrogen and biomethane.
- Progressive Change – meets Australia's current Paris Agreement commitment of 43% emissions reduction by 2030 and net zero emissions by 2050.

Figure 8.6 compares the AEMO 2024 GSOO forecast against the Core forecast which shows that the Core volume market forecast is highly consistent with the index slope of the AEMO Progressive scenario throughout the 2025 Plan period, and materially above the AEMO Step Change scenario.

Figure 8.6: Comparison of AEMO 2024 GSOO and Core forecast for volume market (2023=100)



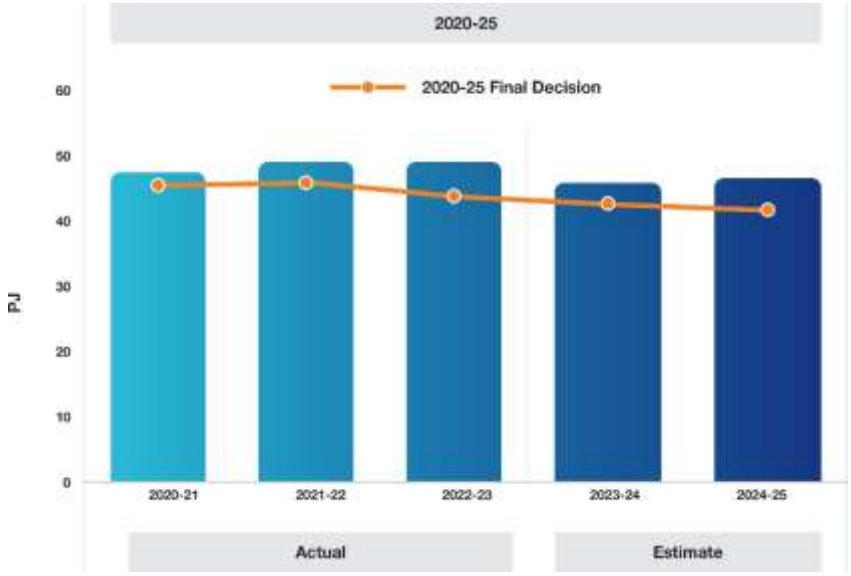
8.4 Demand market

8.4.1 Demand market demand 2020-25

Demand market consumption is driven by changing consumption patterns from a few very large customers.

Figure 8.7 shows that the total demand market consumption over the current 2020 Plan period is slightly above the AER's Final Decision for our 2020 Plan, which was based on our revised demand forecast prepared by Core and submitted to the AER for approval as part of our 2020 Plan. This is largely driven by increases in actual load for four large customers compared with the 2020 Plan forecast. The difference for these four customers varies between 3PJ p.a. and almost 6PJ p.a.

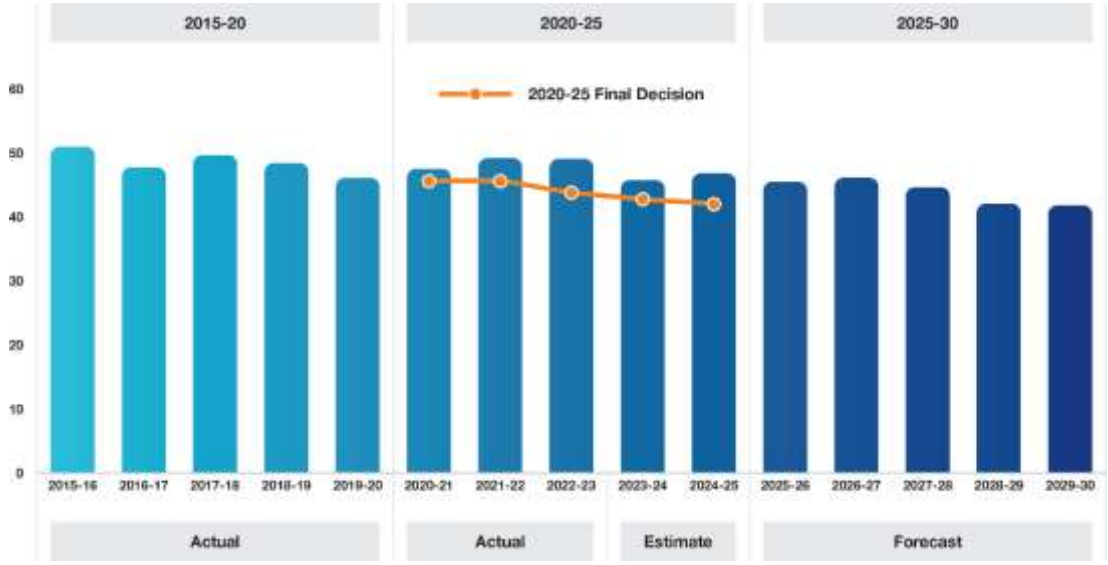
Figure 8.7: Actual and forecast demand market consumption 2020-25



8.4.2 Demand market demand 2025-30

Figure 8.8 shows that demand market consumption is forecast to decline over the 2025–30 period by 2.12% per annum.

Figure 8.8: Total demand market gas consumption (PJ)



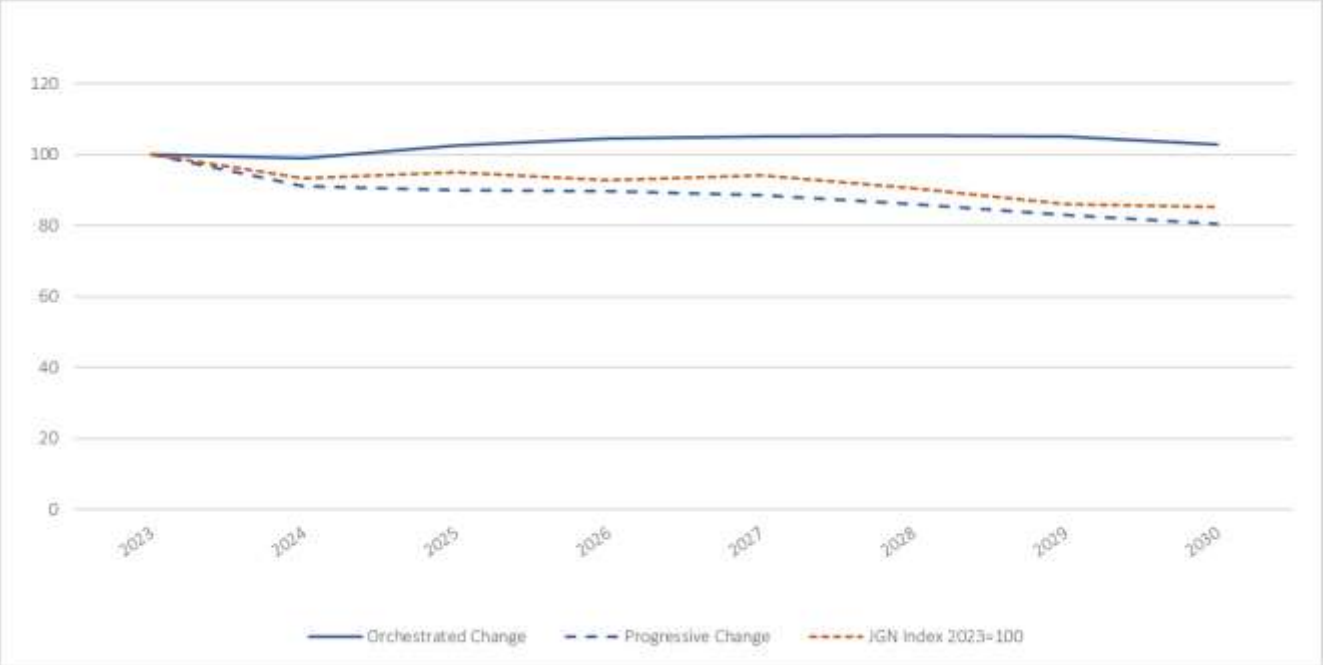
While a few of the larger customers who were surveyed are forecasting an increase in gas consumption as they move away from coal or other higher emission fuels to natural gas, other surveyed customers are forecasting a maintenance of, or reduction in, gas consumption. For the non-surveyed customers, their consumption is forecast to decline at an accelerated rate compared to the historical trend reflecting an electrification of those customers who find it easier to electrify their appliances and processes.

We note that one of our industrial customers went into voluntary administration in April 2024. Consequently, depending on whether the customer remains a going concern we may need to adjust our demand forecast to account for any change in circumstances in our response to the AER's decision on our 2025 Plan.

8.4.3 Validation of our demand market demand forecast

Figure 8.9 shows the comparison for the demand market segment (industrial demand) against the 2023 GSOO, again noting that the AEMO demand market forecast consumption includes gas consumption in NSW and the ACT, and gas consumed through distribution and transmission networks. It's important to note this distinction as we only distribute gas on our NSW distribution network.

Figure 8.9: Comparison of AEMO GSOO and Core forecast for JGN's demand market (2023=100)



The JGN forecast falls between the AEMO Progressive and Orchestrated Change scenarios, with closer relationship to the Progressive Change scenario, in terms of the rate of change in declining consumption. Core considers that the comparison 'provides strong validation of its demand market segment forecasts'[69].

Core has not completed a comparison against the 2024 GSOO given that AEMO has assumed a large increase in demand for power plants compared with what was assumed in the 2023 GSOO. The majority of gas-powered generators are not within JGN's network. This results in a larger gap between our and AEMO's GSOO forecasts, making the comparison less relevant.

69 *JGN - Core Energy – Att 8.2 – Demand Forecast Report*, section 8.2.

9. Accessing our network

Highlights

- Our approach to reviewing our Reference Service was to largely maintain our services where possible.
- Consistent with the AER's approved Jemena Reference Service Proposal (RSP) we:
  - are splitting our current single reference service into two separate reference services; that is, the Transportation RS and Ancillary RS
  - have made minor changes to our current Interconnection Service to reflect the new Chapter 6 of the NGR requirements
  - have made no changes to our Negotiated Services.
- Customers and retailers largely supported our proposed amendments to our services and thought that our services would likely meet future business needs.
- We have amended our Reference Service Agreement and Access Arrangement to reflect the separation of our current Reference Service into a Transportation RS and Ancillary RS. We have also reflected the current regulatory framework and made it simpler and more user friendly.

9.1 Overview

JGN currently offers a single reference service which covers transportation of gas to a delivery point as well as metering, meter reading and ancillary activities (such as special meter reads, disconnection, reconnection and abolishment). In addition, we offer two non-reference services, an Interconnection Service and Negotiated Services.

Our approach to reviewing our Reference Service was to largely maintain our services where possible. As with previous reviews of our services, our focus has been to minimise changes to them unless our experience or our customers' experience during the current period suggests it is necessary, or there have been revisions in the regulatory framework requiring changes. After considering the services that we offer and recent changes to the NGR, including the renewable gas reforms to provide regulatory certainty to support investment in projects that will reduce emissions in our gas network, we proposed in our RSP:

- To split our current single reference service into two separate reference services; that is, the Transportation RS and Ancillary RS. We proposed that the eligible delivery point definition in our Transportation RS be updated to agree non-standard pressure and remove the requirement to consume gas at the delivery point.
- Continuing to offer two non-reference services, namely an Interconnection Service and Negotiated Services, with minor changes to the Inter-connection Service to ensure consistency with the revised requirements under Chapter 6 of the NGR.

In consulting on our draft RSP, customers and retailers largely supported our proposed amendments to our services and thought that our services would likely meet future business needs.

We submitted our RSP to the AER in June 2023. After some minor amendments following stakeholder feedback, the AER approved the RSP[70] in November 2023. Since the AER's decision, we have consulted with retailers and self-contracting users between October 2023 and April 2024 on our Reference Service Agreement (RSA) including providing a copy of our draft proposed RSA. We have considered the further feedback from them and where appropriate reflected the feedback into our AER approved RSA. None of the feedback on our RSA impacts the terms and conditions of our services defined in our AER approved RSP.

Therefore, in accordance with the AER approved Jemena RSP[71] we:

- are splitting our current single Reference Service into two separate reference services; that is, the Transportation RS and Ancillary RS
- have made minor changes to our current Interconnection Service to reflect the new Chapter 6 of the NGR requirements
- have made no changes to our Negotiated Services.

70 AER Final Decision JGN RSP 2025-30, dated November 2023.

71 Jemena RSP.

9.2 How customer feedback has informed our services

In developing our RSP we consulted on the services we offer retailers, self-contracting users and large customers. We set out in section 3 of our RSP the engagement that we undertook, the outcomes of that consultation and what it means for our reference services.

In our RSP we flagged that due to timing constraints at the time we submitted our RSP, the following matters were to be considered by us as part of consulting on our 2025 Plan:

- Reducing the appointment scheduling for special meter reads to 2-hour time slots.
- The potential transport and use of renewable gas and how it will impact our services, noting that JGN did not see the need for any short-term change to services but is an emerging topic of interest.
- The roll out of digital metering.

Since the AER approved our RSP, our further thinking and any relevant consultation on the above matters is included within Table 9.1:

Table 9.1: Further thinking on consultation on our RSP

Consultation topic	Further thinking	Consultation outcomes, if applicable
Reducing the appointment scheduling for special meter reads to 2-hour time slots	The AM/PM windows are available at no additional cost. Currently only a small percentage of customers request an appointment for meter reading. Preliminary investigations on the cost to shorten the window from AM/PM to a two-hour window indicated that the costs would be significantly higher than the current costs. Given the low number of customers who request appointment times and the significant cost increase associated with shortening the appointment windows we are not proposing changes to the current appointment window.	No changes to the current AM/PM appointment windows.
The potential transport and use of renewable gas	We are proposing to invest in connecting eight renewable gas suppliers to our network. See chapter 5 of our 2025 Plan, *JGN – Att 5.1 – Capital expenditure* and *JGN – Att 4.1 – Emissions reduction program*. The NGL and NGR have been amended to allow for the transportation of covered gases (including hydrogen) though our network. Also, amendments have been made to the National Gas Objective and capital expenditure criteria in NGR r.73(3) to support expenditure that achieve targets set by a participating jurisdiction for emissions reductions. These adjustments further support our preliminary view that our Reference Service specified in our RSP do not need to change for transport and use of renewable gas.	The retailer engagement program entailed a series of Retailer Forums with representation from up to 13 gas retailers across the forum series to consider a range of topics, including renewable gas which was a key topic of interest raised by retailers. 90% of the Customer Forum supported our proposed investments to connect renewable gas suppliers to our network.
Digital metering	We are proposing to replace 8,000 ageing, defective and hard-to-reach meters with a digital meter. See chapter 5 and *JGN – Att 5.1 – Capital expenditure* for more information. We do not consider that the digital metering program impacts on our Transportation RS, which is inclusive of metering services.	Stage two of the retailer engagement program entailed a series of Retailer Forums with representation from up to 13 gas retailers across the forum series to consider a range of topics, including digital metering which was a key topic of interest raised by retailers. 84% of the Customer Forum voted on us replacing ageing, defective and hard-to-reach meters with a digital meter.

9.3 Our services

9.3.1 Our current services

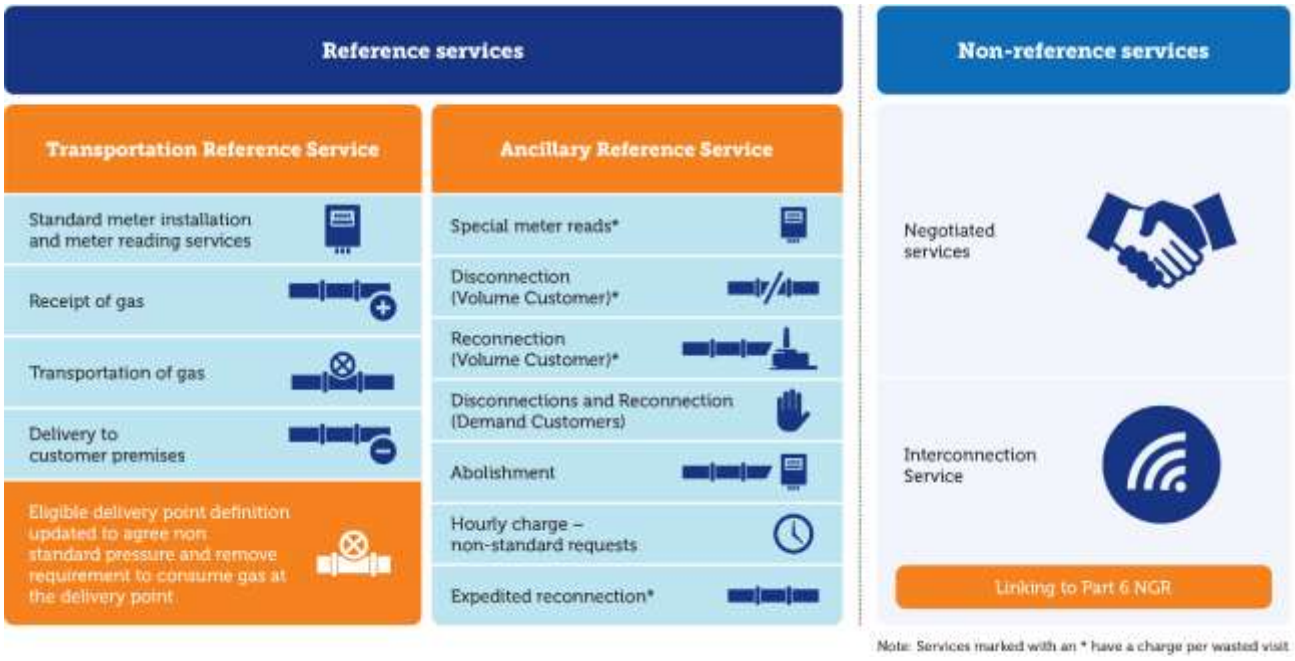
JGN currently offers a single Reference Service which covers transportation of gas to a delivery point as well as metering, meter reading and ancillary activities (such as special meter reads, disconnection, reconnection and abolishment) that may be requested. In addition, JGN offers two non-reference services, an Interconnection Service and Negotiated Services. Figure 9.1 depicts JGN's existing reference and non-reference services.

Figure 9.1: JGN's existing reference and non-reference services

9.3.2 Our services for the 2025 Plan

Our Services for the 2025 Plan are shown in Figure 9.2.

Figure 9.2: Proposed pipeline services for the 2025-30 period



More details on the services and the changes can be found in the Jemena RSP and are discussed in the following section.

9.3.3 Reference Services

Our Reference Services for the 2025-30 period comprise the Transportation RS and Ancillary RS.

a) The **Transportation Reference Service** is a service for:
   i) the transportation and delivery of covered gas by the Service Provider through the Network to an eligible Delivery Point; and
   ii) meter related services including:
      I) the provision, installation and maintenance of a standard metering installation; and
      II) meter reading and associated data activities as appropriate for the required capacity and meter reading frequency but does not include Ancillary Reference Services.

b) The **Ancillary Reference Services** are the following services:
   i) Hourly Charge – non-standard User-initiated requests and queries;
   ii) Disconnection – Volume Customer Delivery Points;
   iii) Reconnection – Volume Customer Delivery Points;
   iv) Disconnection (and Reconnection) – Demand Customer Delivery Points;
   v) Abolishment;
   vi) Special Meter Reads; and
   vii) Expedited reconnection, set out in the Reference Tariff Schedule of our Access Arrangement as requested by a User for an eligible Delivery Point.

c) For the purposes of paragraphs (a) and (b), an eligible Delivery Point is:
   i) a Delivery Point existing on the Network to which the Service Provider provided a reference service under the 2020-25 Access Arrangement immediately before the Effective Date; or
   ii) a new Delivery Point, established on or after the Effective Date, that is directly supplied from the Network, where:
      I) the maximum allowable operating pressure is less than or equal to 500 kPa and the Service Provider reasonably expects that the Delivery Point will consume less than 10 TJ per annum; or
      II) the maximum allowable operating pressure is less than or equal to 1,050 kPa and the Service Provider reasonably expects that the Delivery Point will consume 10 TJ per annum or greater; or
      III) as otherwise agreed between the Service Provider and the User or Prospective User (as the case may be).

Effective Date is defined in our Access Arrangement as the later of 1 July 2025 and the date that the AER's approval of our Access Arrangement takes effect under the NGR.

The terms and conditions upon which we will provide the Transportation RS and the Ancillary RS are set out in our RSA.

9.3.4 Non-reference Services

Our Non-Reference Services comprise:

1. an Interconnection Service; and
2. a Negotiated Service.

Our **Interconnection Service** is:

a) An Interconnection Service is a service provided by the Service Provider to connect a pipeline or facility to the Network and:
   i) to establish a Delivery Point to enable the delivery of covered gas from the Network; or
   ii) to establish a Receipt Point to enable the receipt of covered gas into the Network, in accordance with Part 6 of the National Gas Rules including our Interconnection Policy and subject to the Curtailment Methodology.

b) For the purpose of paragraph (a):
   i) **pipeline** has the meaning given to that term in the National Gas Law;
   ii) **Interconnection Policy** means our interconnection policy developed and maintained in accordance with the National Gas Rules[72].

Our **Negotiated Service** is where a Prospective User has specific needs which differ from those which would be satisfied by the Transportation Reference Service, the Ancillary Reference Services or the Interconnection Service, and the Prospective User negotiates different terms and conditions as a Negotiated Service and enter into a Negotiated Service Agreement with us.

72 Chapter 6 of the NGR.

9.4 Changes to our Reference Service Agreement

We provide reference services to users on the terms in our RSA which forms part of our approved Access Arrangement. The RSA applies between us and any third party (retailers and self-contracting users) who contract with us for the delivery of gas to their sites (users). As most of our customers are supplied with gas by a retailer, the RSA does not apply to them.

We have reviewed our RSA. Our approach to the review was to largely maintain the position set out in the current RSA where possible. As with previous RSA reviews, our focus has been to minimise changes to the existing position unless our experience during the current period suggests it is necessary, or our customers have requested that we reconsider an aspect of our current RSA.

Whilst our proposed changes to our RSA look detailed, we consider that most of the changes are not substantive but reflect our desire to make the RSA simpler and more user friendly. The main changes to our RSA reflect the separation of our current Reference Service into a Transportation RS and Ancillary RS. We have also reflected the current regulatory framework, including recent changes relating to the renewable gas reforms. Other changes made to the current RSA terms are:

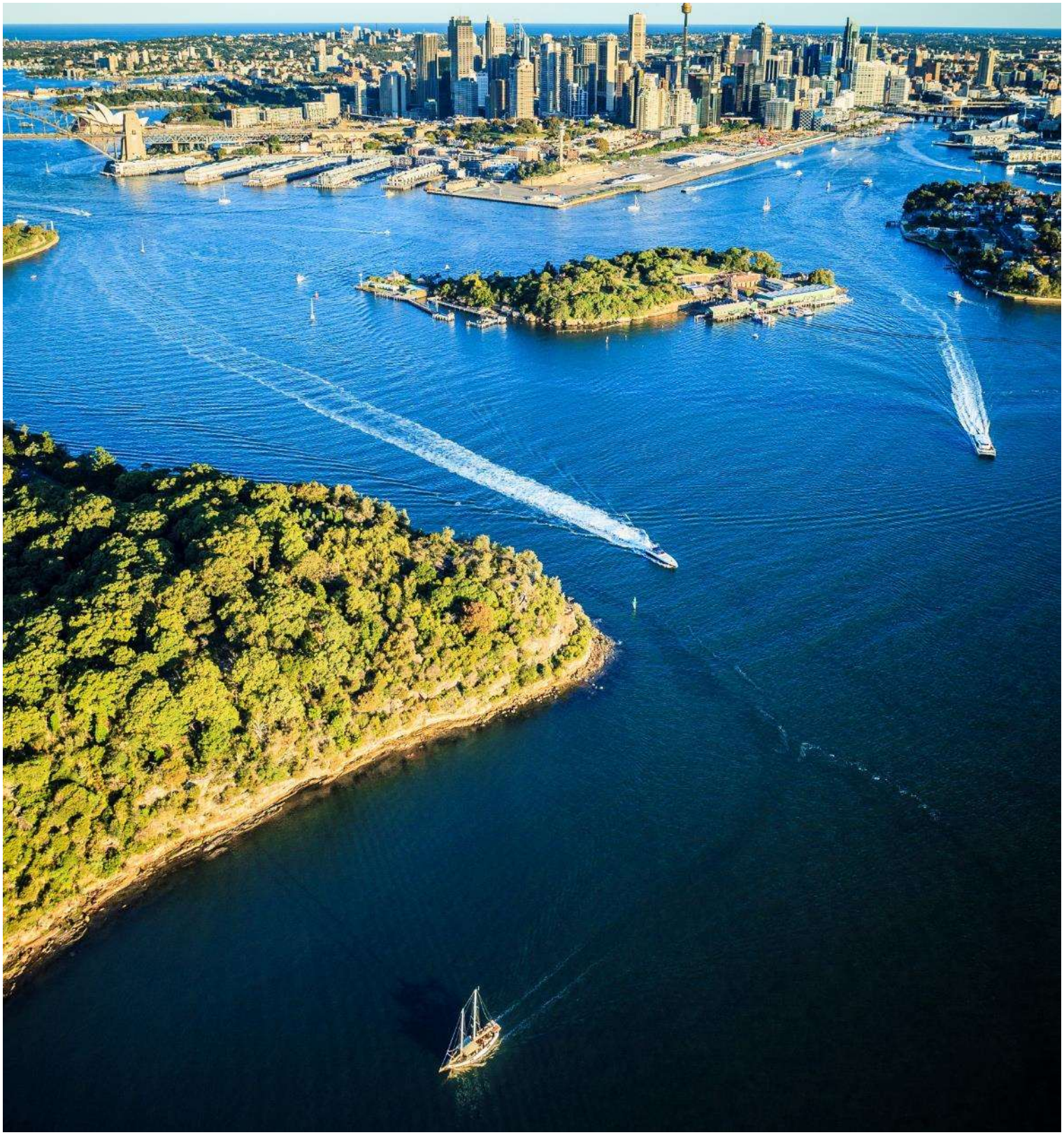
- simplify and clarify the current RSA provisions to improve the readability and remove clauses that are duplicated elsewhere
- relocate provisions and definitions between the AA and the RSA as appropriate
- ensure that drafting accurately reflects JGN's current and proposed practice
- set out requirements in circumstances where further clarity was considered beneficial, having regard to operational and commercial experience over the 2020-25 AA period
- deleted provisions no longer relevant, and
- reflect user feedback.

In making the changes to the RSA, we considered whether amendments may be necessary to enhance the RSA's ability to facilitate the continued efficient provision of services to users and customers during the 2025–30 period.

We consulted with retailers and self-contracting users in seminars, one on one meetings and via email, seeking feedback on areas of the RSA they find unclear or where they have found practical issues with the current drafting. We also sought feedback on any areas they consider could be improved.

We incorporated the feedback and our changes into a draft RSA which we circulated to retailers and self-contracting users for review in early March for feedback by mid-April 2024. The further feedback from retailers and self-contracting users and how we have reflected the feedback into JGN's RSA, and an explanation of the proposed revisions to the RSA, is set out in *JGN – Att 9.2 – Explanation of proposed revisions to 2020 RSA*.

10. Pricing for current and future generations



Key points for this chapter:

- The future of gas is uncertain. Gas policy is evolving and there is heightened competition from alternative energy sources. Many of our customers are concerned about energy affordability.
- Consistent with feedback from our customers, we need to focus on what we can do to ensure that our tariffs are structured in a way that is adaptable for the future. Our customers supported five key pricing principles—cost reflectivity, price stability, simplicity, revenue adequacy, and fairness—which we have used to guide our tariff proposal.
- Our 2025 Plan is addressing this uncertainty by actively exploring renewable gas opportunities, refining our asset management approach and how we charge for capital contributions, and accelerating depreciation. Pricing reform is an important complement to these initiatives.
- With this in mind, we are proposing to:
  - simplify our tariff structures by removing the distinction between coastal and country customers and reducing consumption blocks from six to four for volume market customers
  - improve cost reflectivity by introducing a new tariff for our large volume customers and rebalancing revenue from the volume market to the demand market
  - ensure that prices for our Ancillary RS reflect the costs of delivering them.
- We are also proposing changes to our tariff variation mechanism to:
  - move to two mechanisms to align with our proposal to split our single Reference Service into a Transportation RS and Ancillary RS
  - convert the mechanism for the Transportation RS into a hybrid tariff variation mechanism that involves some sharing of volume risk between us and our customers
  - maintain a weighted average price cap for our Ancillary RS.

10.1 Our tariffs and charges

Like most businesses, we need to recover the costs of providing our distribution network services from the customers who use them. We do this by charging network tariffs, which are set so they recover the costs of transporting natural gas through our network to customers' premises in a safe, reliable and responsive way. Customers may not see their network tariff itemised on their gas bill, as retailers incorporate our tariffs in their end prices and charges, along with the other costs of producing and supplying gas. As shown in the Background Chapter, Figure 1.2, our network tariffs make up around 36% of a typical residential customer's total gas bill.

The network component of a typical residential total gas bill may be made up of several separate charges:

- *a fixed charge* - an annual supply charge that applies to each premises gas is delivered to ($ per annum)
- *a variable charge* - a usage charge that applies to the *volume* of gas used ($ per gigajoule (GJ))
- *ancillary charges* - fees for certain services or activities (such as special meter reads or disconnections) that apply only when customers or retailers have requested (or required to undertake) those services ($ per service and/or per hour).

Most of our customers pay fixed and variable charges, but the amount they pay varies to reflect their different characteristics and the different ways they use gas.

All current charges are set out in our tariff schedule which is assessed by the AER as part of the price review process and then updated annually. We publish a new tariff schedule each year, which applies from 1 July to 30 June.

Our current tariff structures

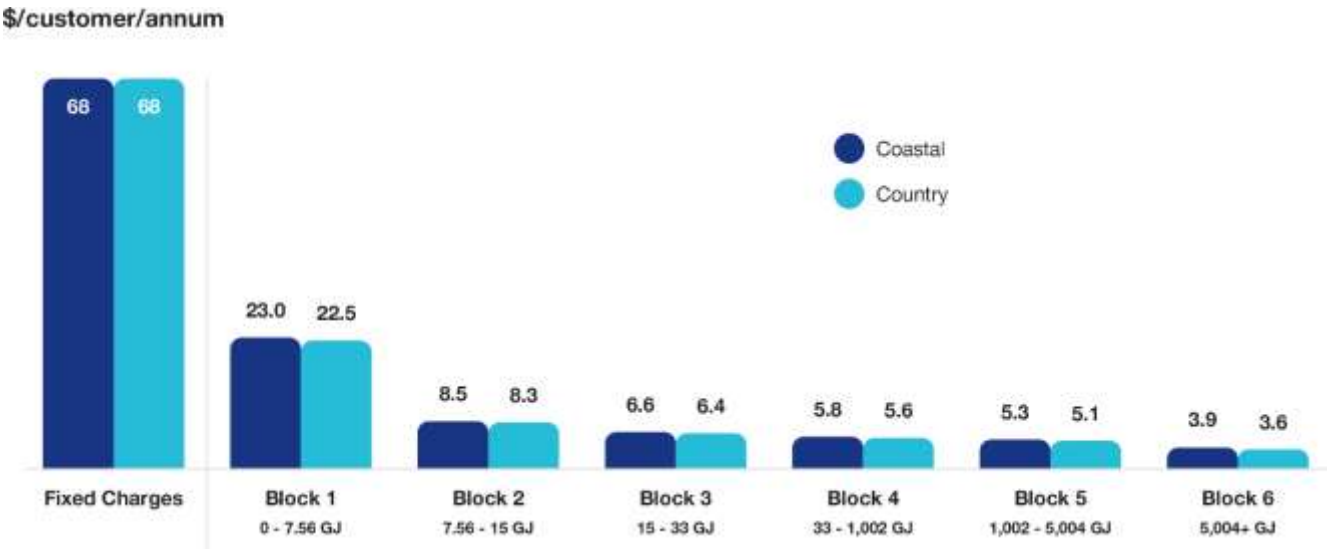
We group customers that have similar characteristics together so that similar customers pay similar prices. These groupings are known as our 'tariff classes'. At the broadest level, we differentiate between:

- residential and small commercial customers ('volume market') that use less than 10TJ per annum.
- large industrial customers ('demand market') that use more than 10TJ per annum.

The two customer groups are subdivided into tariff categories, with some further segmentation by geographic location. Our network serves customers in coastal areas, such as Sydney, Newcastle, Wollongong and the Central Coast, and over 20 country centres including those within the Central Tablelands, Central West, Southern Tablelands and Riverina regions of NSW. We group our volume market customers by country and coastal locations to reflect the relative costs of supplying these customers. The different costs involved in serving our coastal and country customers are primarily due to the costs of the Wollongong-Sydney-Newcastle trunk pipeline that serves only the coastal customers.

Our volume market customers are generally charged on how much gas they consume based on banded usage charges, in six consumption blocks representing different thresholds of annual consumption. Prices are lower for gas consumed in higher blocks—that is, the average network price we charge decreases with the more gas that is used. This is shown in Figure 10.1.

Figure 10.1: Current tariffs and block structure for volume market individual customers [73]



We call our large industrial and commercial customers 'demand customers'. Most of our large industrial and commercial customers are charged based on the amount of network capacity they require, which is referred to as their chargeable demand.

73 JGN – Reference tariff schedule – 1 July 2024 to 30 June 2025, April 2024.

Our Ancillary Reference Services

As part of our 2025 Plan, we are proposing to separate our current Reference Service into Transportation RS and Ancillary RS. We have also made minor changes to our Ancillary RS to make the services we provide simpler for our customers to understand. This is consistent with the pricing principles we discussed with our customers and other stakeholders during our extensive engagement programs (see section 10.2). Table 10.1 below shows our current Ancillary RS charges for 2024-25 and compares this with our proposed services (with minor changes) and charges for 2025-26.

Table 10.1: Ancillary Reference Service comparison ($2025)

Current Ancillary RS	Approved 2024-25 prices	Proposed Ancillary RS	Proposed 2025-26 prices
Requests for service	221.35	Hourly charge – non-standard retailer-initiated requests and queries	199.42
Disconnection - Volume customer delivery points	145.87	Disconnection – Volume Customers – Completed	81.32
Disconnection Wasted Truck Visit	145.87	Disconnection – Volume Customers – Wasted Visit	44.53
Reconnection - Volume customer delivery points	117.31	Reconnection – Volume Customers – Completed	114.23
Reconnection - Wasted visit	117.31	Reconnection – Volume Customers – Wasted Visit	114.23
Out-of-hours reconnection	348.86	Expedited reconnection	189.74
Decommissioning and meter removal small meter	1,500.31	Abolishment – Up to 25m3/hr – Completed	1,424.98
Special Meter Reads	16.32	Special meter read – Completed	16.46
Special Meter Read Wasted Truck Visit	16.32	Special meter read – Wasted Visit	16.46

Table 10.1 shows that we are proposing lower or similar prices for all ancillary services in the 2025-30 period. It reflects the cost savings and efficiencies we have achieved and our ability to provide the same or similar services with lower costs. For example, in real terms, we are proposing to reduce our hourly charge for requests for service for non-standard retailer-initiated requests and queries by 10% and reduce expedited reconnection charges by 46%.

What is a tariff variation mechanism?

The tariff variation mechanism refers to how our tariffs and charges are updated each year. The mechanism enables us to respond to changing market conditions and recover our building block costs. Currently, our Reference Service comprises haulage services and ancillary services which are regulated under a weighted average price cap tariff variation mechanism ('price cap'). Ancillary services, such as disconnection, meter removal and special meter reads, are provided to individual customers. This is in contrast to haulage services which involve shared network assets providing haulage services to large numbers of customers at the same time.

Price caps limit the average increase in our prices from one year to the next. An important feature of the price cap is that it places the volume risk with JGN. As part of each price reset process, the AER decides our revenue allowance, which is then used to set our prices based on forecast volumes of gas transported through our network. If actual volumes are lower (higher) than the forecast volumes used to set tariffs, we will recover less (more) revenue than expected. The price cap allows us to retain all revenue that we earn if our revenue exceeds the allowed revenue and does not compensate us if actual revenues are lower than the allowed revenue.

Price cap regulation incentivises us to grow the volume of natural gas transported through our network and the declining tariff blocks incentivise our customers to consume larger quantities of natural gas allowing them to derive more value from their appliances. More customers consuming higher

volumes of gas also keeps the prices lower for all customers as the relatively fixed haulage service costs are spread across larger volumes.

In contrast to a price cap, a revenue cap tariff variation mechanism (revenue cap) places volume risk with customers. It does this by ensuring that the distributor earns the revenue allowance set by the AER, irrespective of the volume of gas transported through the network. This is achieved by making adjustments to the tariffs in future years to ensure that the revenue earned is in line with the revenue allowance. The revenue cap provides no incentive to grow gas volumes but does remove volume risk variance from the service provider.

Recently the AER has stated its concerns with a price cap approach and that it expects parties that can best manage risk should be allocated it. We discuss this further in section 10.3 below.

10.2 What our customers have said

As discussed in Chapter 2, we established a Customer Tariff Forum to inform our review of our tariff structures and tariff variation mechanism, and we engaged with the Advisory Board to help inform the design of our tariff engagement program. Because of the complex nature of tariffs and tariff variation mechanism, members of the Advisory Board and Expert Panel, complemented with external guest speakers, were asked to play a role as the 'Brains Trust'. The Brains Trust functioned as an independent expert to support Customer Tariff Forum participants, providing information and assisting in group deliberations by offering their views on our tariff options and tariff variation mechanism.

As part of our engagement with the Customer Tariff Forum, small businesses and retailers, we tested their preferences regarding risk sharing, the declining tariff block structure, tariff principles and how we might streamline our tariff structures.

Tariff principles

During the preparation of the Draft 2025 Plan, we engaged with residential and small business customers, and retailers to explore how we should charge for the provision of our services over the 2025-30 period. The key things we heard before publishing our Draft 2025 Plan in February 2024 were:

- Affordability is a top priority, and there was concern about potential bill shocks
- Simplicity is valued; retail bills are complex for households—and especially socially and economically disadvantaged customers—to understand.
- Small business customers supported reducing the number of tariff blocks and separating small and large customers, which Retailers also supported
- Differing customer groups were comfortable with a hybrid tariff variation mechanism for our Transportation RS
- Large business customers supported our approach to reset demand capacity values as of 1 July 2025.

We also engaged on a set of pricing principles. These principles aim to ensure that our tariff structure addresses affordability issues, improves fairness, promotes stable prices so our customers can manage their household and business budgets, and ensures that our services remain competitive into the future. Table 10.2 sets out the pricing principles we consulted on with our customers during our Customer Tariff Forum, and how we will meet these principles as part of our 2025 Plan.

Table 10.2: Pricing principles

Pricing principle	How do we plan to meet this
Cost reflectivity: the prices charged for services reflect the underlying costs of providing those services.	– To improve cost reflectivity, we are splitting out large volume market customers as a separate tariff category. This will allow us to develop more cost-reflective tariffs for this category of customers and reduce the number of tariff blocks. Over time, the cost drivers for each customer segment will change and evolve. – To more accurately capture the utilisation of our network by demand customers, we plan to incrementally increase the proportion of revenue we recover from this customer segment.
Price stability: minimising large tariff variations to help customers manage bills in future.	– To avoid bill shock for smaller volume market residential and commercial customers we are continuing with declining tariff blocks.
Simplicity: understandable and avoiding unnecessarily complex tariff structures.	– For simplicity, we propose to remove the geographic location distinction (that is coastal and country) for volume market customers and reduce the number of tariff blocks.
Revenue adequacy: efficient cost recovery to generate sufficient revenue to cover the costs of operating JGN's network.	– The prices we propose will reflect the forecast gas volumes we expect in the 2025-30 period and enable us to recover revenue to meet our efficient costs.
Fairness: usage cost is set according to the costs of the network and covers equity considerations like cost-of-living pressures.	– The separation of large volume market customers will allow us to charge large volume customers a higher fixed charge relative to smaller customers. In addition, our overarching 2025 Plan seeks to balance the need to act now to support intergenerational equity, while keeping in mind current cost-of-living pressures.

Feedback on our Draft 2025 Plan

As part of our Draft 2025 Plan, we asked:

- Do you think the proposed changes to our tariff structures align with the customer pricing principles outlined such as affordability, stability, and competitiveness?
- Do you think that it is reasonable that we gradually increase the revenue proportion we recover from our demand customers?
- Does the risk-sharing approach proposed under the hybrid form of control seem fair and balanced?
- Do you have a view on the cap and collar threshold (%)?
- Do you have a view on the 50:50 sharing of volume risk between us and customers beyond the cap and collar threshold?

The feedback we received was:

- Affordability and vulnerability—many small business customers cited price increases as a major factor to tackle now. We are acutely aware of affordability concerns faced by our customers, including those most vulnerable. Our 2025 Plan retains a declining block tariff structure, which allows customers to keep their gas bills lower. We also propose separating our individually metered volume tariffs into small and large to allow for better tailoring of charges. Finally, we intend to rebalance our tariffs over the 2025–30 period to shift some revenue that we recover from our volume market customers to our demand market customers.
- Tariff split—small business customers and Tariff Forum participants support removing the coastal / country split and replacing it with a small/large (over 200GJ) split from 1 July 2025.
- Chargeable demand reset— large customers supported our proposal to allow chargeable demand to be reset but wanted more information about how this would work.
- Tariff variation mechanism—there was general support for a hybrid tariff variation mechanism with a 5% threshold and a 50:50 sharing ratio other than from the CCP which raised some concerns with our proposed mechanism, which we discuss in section 10.3 below.[74]

74 See *JGN – Att 10.1 – Pricing* for CCP observations regarding our proposed mechanism and our response.

Table 10.3: Feedback on proposed tariff structures

Topics we engaged on	Customer response
Separating large volume customers from other volume customers	– All participants (residential[75] and commercial[76]) voted for separation of larger customers – Customers consider this as fair and equitable, allowing for tailored responses to different customer types.
Reduce the number of tariff blocks in the volume market	– All customers voted in favour of this change. – Customers considered this would simplify our tariff structures, making them flatter and to some extent reducing the incentive to increase gas consumption.

Engagement with retailers

We engaged with retailers to understand the impact our proposed tariff changes will have on them and to get their perspectives. Retailers voted in support of splitting large volume customers and reducing the number of tariff blocks. We also undertook a retailer survey on how our proposed changes might impact them but we received only limited feedback. We conducted further workshops and testing in February and March 2024 with retailers post the publication of our 2025 Draft Plan. Overall, retailers retained their support of splitting large volume customers and reducing the number of splitting blocks.[77]

75 See *JGN - BD Infrastructure - Att 3.1 Tariffs Consultation Report – 2024061*, page 22.

76 Refer to *JGN – Att 3.2 – Small business Retailer Large User engagement report for an overview of the tariff engagement process with small business customers*.

77 Ibid.

10.3 Proposed changes to our tariff variation mechanism and tariff structures

In its Final decision on the *Review of gas distribution network reference tariff variation mechanism and declining block tariffs* (October 2023), the AER concluded that most stakeholders did not support moving from a price cap to a revenue cap tariff variation mechanism because the existing assignment of volume risk to distributors was seen as appropriate and preferable to assigning volume risk to customers.

The AER however shared concerns about gas distributors consistently outperforming target haulage service revenues under price caps due to higher-than-expected volumes. It also noted that under a price-cap distributors can use clause 65 of the NGR to seek a new revenue determination if they expect lower volume forecasts for the remaining years of the access arrangement period. However, customers do not have the same opportunity to re-open an approved access arrangement if actual volumes are higher than forecast.

> In this respect, the AER noted that
>
> 'Cap and collar' tariff variation mechanisms are one potential way of mitigating this price risk faced by customers under price cap regulation. However, subject to the design of the hybrid tariff variation mechanism, it would also absolve distributors of their volume risk.[78]

The AER noted that volume risk should be assigned to the party best able to manage the risk. While historically gas distributors have been better placed to manage the risk, the AER is concerned that gas distributors have consistently over the last 10 years earned more revenue than forecasted due to volume outperformance.[79]

In the case of JGN, the volume outperformance is largely attributable to an unprecedented amount of growth in our network, driven by the building boom in Sydney over the 2015-20 period. Our customers have benefited from this growth — the increase in customers and gas demand has placed downward pressure on bills — as there are now more customers sharing the largely fixed network costs.

As the AER's final decision on this issue was published after we submitted our RSP, we undertook consultation with our customers and stakeholders on these matters as part of our 2025 Plan engagement.

In our customer engagement, we explored options on the tariff variation mechanism for our Transportation RS, including price cap, revenue cap and hybrid which involves sharing of volume risk between JGN and our customers. Customers were not supportive of moving to a revenue cap but thought it was appropriate that they bear some volume risks, acknowledging the impact of future uncertainty on prices.

In light of customer feedback, and AER concerns about price caps, we have explored a hybrid tariff variation mechanism. A hybrid mechanism shares the volume risk between JGN and its customers and also seeks to address the AER's concerns around sustained volume outperformance, by limiting the outperformance JGN can earn. We discuss this further below.

78 AER, Final decision: Review of gas distribution network reference tariff variation mechanism and declining block tariffs, October 2023, page 7.

79 Ibid, page 5.

Hybrid tariff variation mechanism for our Transportation Reference Service

There are many ways that a hybrid tariff variation mechanism might be applied. To explore the application of a hybrid mechanism with our customers, we considered the following features:

Cap and collar

Limiting the volume under/over performance to a certain tolerance level (this will involve introducing a cap-and-collar of an agreed threshold above and below the forecasted volume) When actual volumes are within the agreed threshold (above or below) forecast volumes in a given year (measured as a percentage of the total volume), no adjustment is required to transportation tariffs in future years. This is similar to how we update tariffs currently.

Sharing of risk

Sharing of risk beyond the tolerance level (sharing risk related to the under/over performance between JGN and the customer) – if actual volumes are higher/lower than the tolerance level or agreed threshold, then the revenue earned above/below the threshold level will be shared with the customers. This is a new feature that allows sharing of volume risk with customers beyond a certain threshold.

Following the first stage of the Tariff Forum engagement process, we determined three different hybrid tariff variation mechanism options to test with customers[80]:

- **Hybrid option 1 (Cap & collar)** – JGN would bear all volume risk up to a tolerance or threshold level (cap-and-collar) and customers would bear all volume risk beyond the tolerance level. For example, if a volume outperformance or underperformance is above the agreed threshold level the revenue over or under-recovery will be borne by the customers. That is, if there is volume outperformance above the threshold level customers will receive a price reduction in future years and if there is underperformance recovery then customers will need to pay higher prices.
- **Hybrid option 2 (Sharing mechanism)** – There is no tolerance or threshold level specified and all volume risk is shared equally between JGN and customers. For example, if there is volume outperformance relative to forecast, then half the benefit of that outperformance will go to customers through lower prices in future. If there is volume underperformance then customers will need to fund half of the under-recovered revenue through higher prices in the future.
- **Hybrid option 3 (Cap & collar + sharing mechanism) –** JGN would bear volume risk up to a tolerance level, and JGN and customers would share the volume risk beyond the tolerance level. This is a middle scenario to the above two options and requires a sharing ratio beyond the threshold level. If there is volume over or underperformance up to the agreed threshold level, the risk of revenue over/under recovery will be borne by JGN. This is similar to the current price cap and protects the customers up to a threshold level. Beyond the threshold level, any volume over or under-performance will be equally shared between JGN and customers. This lowers the incentive for JGN to increase volumes compared to the incentive under the price cap.

80 See *JGN – BD Infrastructure – Att 3.1 Tariffs Consultation Report* for an overview of the Tariff Forum engagement process.

Proposed tariff variation mechanism Transportation Reference Service

Since publishing our Draft 2025 Plan we delved deeper into a hybrid tariff that combined elements of a price and revenue cap with small business customers and the Tariff Forum.

Customers considered various combinations of sharing ratios (how to share over or under-performance compared to forecast gas use); and thresholds (the level of over or under-performance at which a sharing ratio would kick in). Indicative bills – demonstrating impacts based on volume over and under-performance – were presented to customers to enable them to deepen their understanding of what taking more risk would mean.

Customers showed support for both a 3% and 5% threshold, though support for the 5% threshold was higher.[81]

In terms of the sharing ratio, there was clear support for a 50:50 ratio over 60:40 or 40:60. Participants felt this was balanced and fair.

Aligned with customer feedback, we are proposing to adopt hybrid option 3 which entails a 50:50 sharing ratio based on a +/- 5% tolerance threshold. We have reflected this option in our proposed tariff variation mechanism for our Transportation RS.

This option provides a measured move away from a price cap and balances concerns around affordability. It can also address the AER's issue around gas networks earning higher than forecast revenues by limiting volume outperformance, providing benefits of stable prices relative to a revenue cap tariff variation mechanism and allowing for the sharing of benefits and costs with customers.

Figure 10.2: Proposed change to tariff variation mechanism for haulage service

We note that our Transportation RS tariff mechanism will continue to include automatic adjustment factors as detailed in Schedule 3 of our Access Arrangement. The automatic adjustments are traditionally used to ensure that only the actual costs incurred during the period for the following items are passed on to consumers. These automatic adjustments are the same as the 2020-25 Access Arrangement, namely:

1. Licence fees—due to realised licence fees varying from the allowed annual licence fee
2. Unaccounted for gas—to procure gas to meet our UAG obligations as compared to our annual allowance. JGN's approach to assessing UAG costs is the same as the 2020–25 Access Arrangement but with updated target rates (see *JGN – Att 6.7 – Unaccounted for gas*)
3. Changes in taxes—to meet any new or changed tax obligations over and above the annual allowance, and
4. Carbon costs—to meet any costs incurred (directly or indirectly) arising from an obligation imposed under a new carbon scheme should one be implemented. The factor is drafted broadly to reflect the significant degree of carbon policy uncertainty over the 2025–30 period which includes the government's Safeguard Mechanism.

We set out more detail on the tariff variation mechanism for our Transportation RS in sections 8.2 and 8.3 of *JGN – Att 10.1 – Pricing.*

81 *JGN – BD Infrastructure – Att 3.1 Tariffs Consultation Report*, section 5.

Proposed tariff variation mechanism for Ancillary Reference Services

For our Ancillary RS, we are proposing to continue with a price cap tariff variation mechanism. A price cap ensures that prices for our Ancillary RS reflect the costs of providing those services and are consistent with those approved by the AER for similar services provided by other gas distribution networks (e.g. those in Victoria). The AER, in its May 2023 issues paper on the review of gas distribution network reference tariff variation mechanism and declining block tariffs, stated:

Price caps for individual services are currently applied to ancillary network reference services such as disconnection, meter removal and special meter reads. These services are provided to individual customers, in contrast to haulage services which involve shared network assets providing haulage services to large numbers of customers at the same time. In the case of discreet services provided to individual customers, and ancillary network services, we consider individual service price caps are reasonable and will remain appropriate going forward.

The tariff control formula adjusts tariffs for Ancillary RS from one year to the next for inflation and an assumed real price change. We propose that the real price change is set as the forecast real labour input cost changes used to forecast our capital and opex over the 2025–30 Plan period, which are discussed further in *JGN – Att 6.1 – Operating expenditure*. This will ensure that the tariffs reflect expected movements in labour costs, which make up most of the costs that we incur when providing Ancillary RS.

We set out more detail on the tariff variation mechanism for our Ancillary RS in section 8.4 of *JGN – Att 10.1 – Pricing*.

Proposed changes to our volume market tariff structures

To simplify our tariff structure and to improve cost reflectivity we are proposing the following changes to the volume market tariff structures:

- **Remove differentiation between country and coastal customers** – we currently apply separate tariff categories for country and coastal customers. However, this differentiation is not adopted by retailers and is not passed on to customers. To help simplify our tariff structures, we are proposing to remove this distinction between our country and coastal customers. As retailer tariffs do not currently distinguish between country and coastal customers, this change is not expected to impact any volume market customers.
- **Reduce the number of tariff blocks from six to four** – some of our tariffs across consumption blocks are currently only marginally different providing us with an opportunity to reduce the number of blocks. While this will lower our ability to rebalance tariffs it will remove redundancy where the tariffs are similar across blocks. This change also supports simplifying our tariff structures.
- **Differentiate between large and small/medium customers** – our large volume market customers—those consuming 200GJ or more—currently pay a very small, fixed charge. For example, the fixed charge of a typical bill for a commercial customer consuming 500GJ represents only 2% of the total network bill. This compares to a 22% fixed charge component for a typical 15GJ residential customer. We are proposing to raise the fixed charge for our large volume market customers to better reflect the nature of the fixed costs we incur in delivering our Transportation RS. We propose to increase the fixed charge proportion of the typical large customer bill to 20% to bring it in line with that of a typical residential customer.

Our proposed changes to the block structure are outlined in Figure 10.3.

Figure 10.3: Proposed change in our tariff block structure for volume market customers

Old

Tariff class	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
VI - Coastal VI - Country	0 - 7.56	7.56 - 15	15 - 33	33-1002	1002-5004	5004+
VB - Coastal VB - Country	0 - 250	250 - 500	500 - 1000	1000+		

New

Tariff class	Block 1	Block 2	Block 3	Block 4
VI - Less than 200GJ	0 - 7.56	7.56 - 15	15 - 33	33 +
VI - High consumption (>= 200GJ)	0 - 300	300-1000	1000-5000	5000 +
VB	0 - 250	250 - 500	500 - 1000	1000+

Note: The numbers represent the range of GJ consumption in the block

Our demand market tariff structures

While we are not proposing to make any changes to our demand market tariff structures, we plan to gradually increase the revenue proportion we recover from our demand customers. This enhances the cost reflectivity of our tariffs. Concurrently, we will provide these customers with an opportunity to reset their chargeable demand to reflect their use of our network which will lower their bills if their gas demand is lower.

Managing permanent disconnections (abolishment)

In its recent decisions for Victorian gas distribution networks, the AER decided to cap the small customer connection abolishment ancillary reference service tariff at $220 in real terms over the 2023−28 period and socialise the balance of small customer abolishment costs up to $950 across haulage tariffs.[82]

In JGN's current tariff schedule, we have an ancillary reference service charge for the abolishment of customer connections (where the meter capacity is less than or equal to 25m^3/hr). This charge of $1,500 is payable by the party requesting the abolishment. This cost includes excavating, clamping and cutting the pipe, welding a cap on the pipe, recording a final meter read and serial number, and purging the connection pipe to remove all traces of gas.

We currently process approximately 4,000 permanent disconnections per year. A permanent disconnection might be required for safety reasons, for example, a knockdown or rebuild of a property, a renovation or redevelopment of a site. Alternatively, if customers remove all their gas appliances, they might choose to disconnect from the gas network altogether.

In light of the AER's decision for Victorian businesses, we engaged with our customers on whether this ancillary service should be charged on a user pay basis (as currently applies for JGN) or partially socialised across the customer base (as per the AER's Victorian decisions).

As part of the package of initiatives considered by the Customer Forum for the Draft 2025 Plan, we asked participants to consider our current approach to permanent disconnections.

In Customer Forum 7, 84% of the Customer Forum voted for maintaining our current approach, with a clear preference for a user-pay model.[83] They did not consider it fair for the costs of abolishments to be shared across the customer base. This preference did not change when we tested whether our Draft 2025 Plan aligned with the Customer Forum recommendations at Customer Forum 8.

82 AER, Attachment 9 – Reference tariff setting | Final decision – AGN (Victoria & Albury) Access Arrangement 2023–28, June 2023.

83 *JGN – BD Infrastructure – Att 2.2 – Customer forum engagement report*, page 37.

Small businesses that we engaged with were split on this topic. 84% voted for some sharing across the customer base for permanent disconnections. Their reason for voting this way was that they wanted the cost to be spread more across the customer base and subsidised by JGN or the government. However, some small businesses (16%) felt it should be funded by the individual leaving the network.

Although we recognise different views across the customer base on this initiative, we are proposing to maintain our current approach for abolishments in our 2025 Plan.

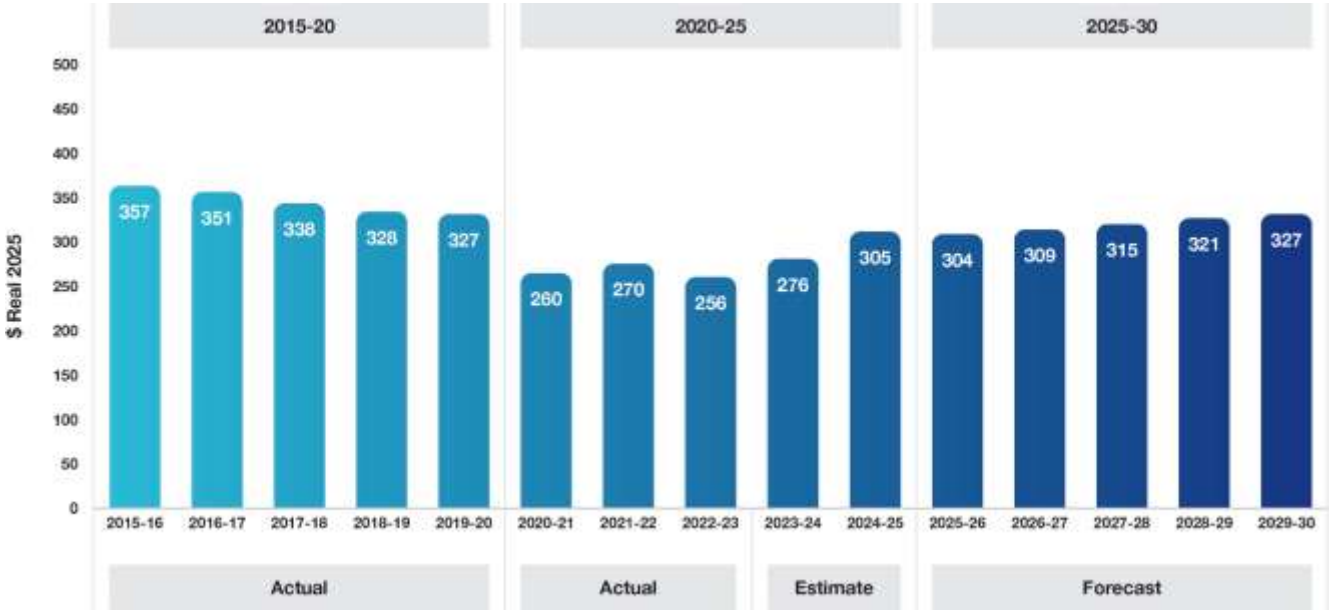
Further details on our tariff structures for our volume and demand customers, and on our Ancillary RS, are set out in *JGN – Att 10.1 – Pricing*.

10.4 What our 2025 Plan means for prices

Our 2025 Plan will implement several initiatives to position JGN for the future but also takes into account current cost of living pressures. In formulating these initiatives, we considered the plausible future scenarios (Chapter 4) and impacts on current and future generations of our customers. Our proposal is measured and aimed to ensure our gas network remains competitive as we transition to a renewable gas network, which is an important attribute contributing to keeping prices lower for remaining customers as demand reduces across the network.

We expect the price impact for a typical residential customer on our network would increase marginally from the current 2020-25 period into the 2025-30 period, as illustrated in Figure 10.4.

Figure 10.4: Annual network bill for a typical residential customer consuming 15GJ per annum[84]

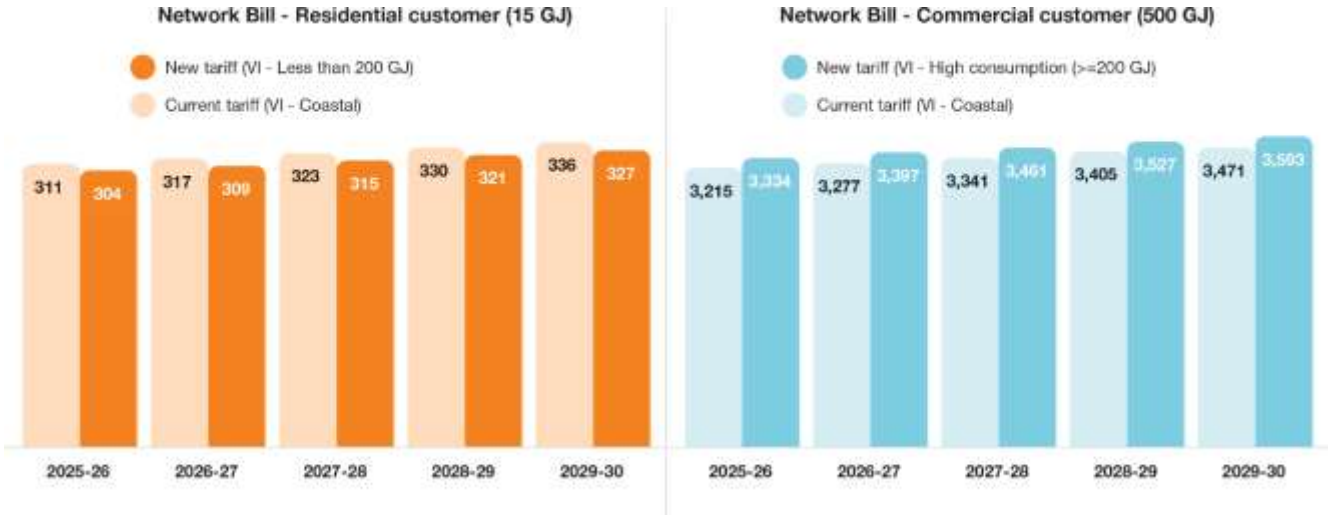


With the introduction of new tariffs designed to categorise customers based on their consumption levels, the price impacts on residential and commercial customers with varying consumption patterns will diverge. For a typical residential customer with an annual consumption of 15GJ, the network bill is projected to be lower compared to the scenario where the existing tariff structure continues to apply. Conversely, a typical commercial customer consuming 500GJ annually would experience a higher network bill when compared to the scenario where the existing tariff structure continues to apply. This is illustrated in Figure 10.5.[85]

84 In the 2020-25 period, a $204M downward adjustment was made to our 2020-25 building block costs to return revenue over-recovered during the 2015-20 period. Without this downward adjustment, the annual network bill would be higher over the 2020-25 period.

85 Our industrial customer tariffs are discussed in more detail in *JGN – Att 10.1 – Pricing.*

Figure 10.5: Comparison of current and new tariff structures for typical customers



Glossary

2022 RORI	2022 Rate of Return Instrument
AASB	Australian Accounting Standards Board
ABS	Australian Bureau of Statistics
ACCUs	Australian Carbon Credit Units
AEC	Australian Electoral Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
Ancillary RS	Ancillary Reference Services
ARENA	Australian Renewable Energy Agency
BASIX	Building Sustainability Index
CALD	Culturally and Linguistically Diverse
capex	Capital expenditure
CBA	Cost Benefit Analysis
CCP	Consumer Challenge Panel
CESS	Capital Expenditure Sharing Scheme
Core	Core Energy & Resources
ECM	Efficiency Carryover Mechanism
GDBs	Gas Distribution Businesses
GHG	Greenhouse Gas
GJ	Gigajoule
GPFS	General Purpose Financial Statements
GSOO	Gas Statement of Opportunities
HIA	Housing Industry Association of Australia
ICT	Information, Communication and Technology
IPA2	International Association for Public Participation
IPART	Independent Pricing and Regulatory Tribunal
Jemena	Jemena Gas Networks (NSW) Ltd
JGN	Jemena Gas Networks (NSW) Ltd
JMP	Jemena Malabar Pipeline Pty Ltd
MPFP	Multilateral Partial Factor Productivity
MSO	Model Standing Offer
MTFP	Measured Using Multilateral Total Factor Productivity
newDemocracy	newDemocracy Foundation
NGER	National Greenhouse and Energy Reporting
NGL	National Gas Law
NGR	National Gas Rules
NPV	Net Present Value
opex	Operating expenditure
PFP	Partial Factor Productivity
PIAC	Public Interest Advocacy Centre
Picarro	Investing in technology
pig and digs	Pipeline Integrity Management– Preventative measures
PPIs	Partial Performance Indicators
RAB	Regulatory Asset Base
RSA	Reference Service Agreement
RSP	Reference Service Proposal
SaaS	Software As a Service
SOCI	Security of Critical Infrastructure
TFP	Total Factor Productivity
TJ	Terajoules
Transportation RS	Transportation Reference Service
UAG	Unaccounted for Gas
VER	Value of Emissions Reductions