

# Pre Reading Pack Tariff Structures

## **Retailers Forum**

5 December 2023

# **Acknowledgement of Country**

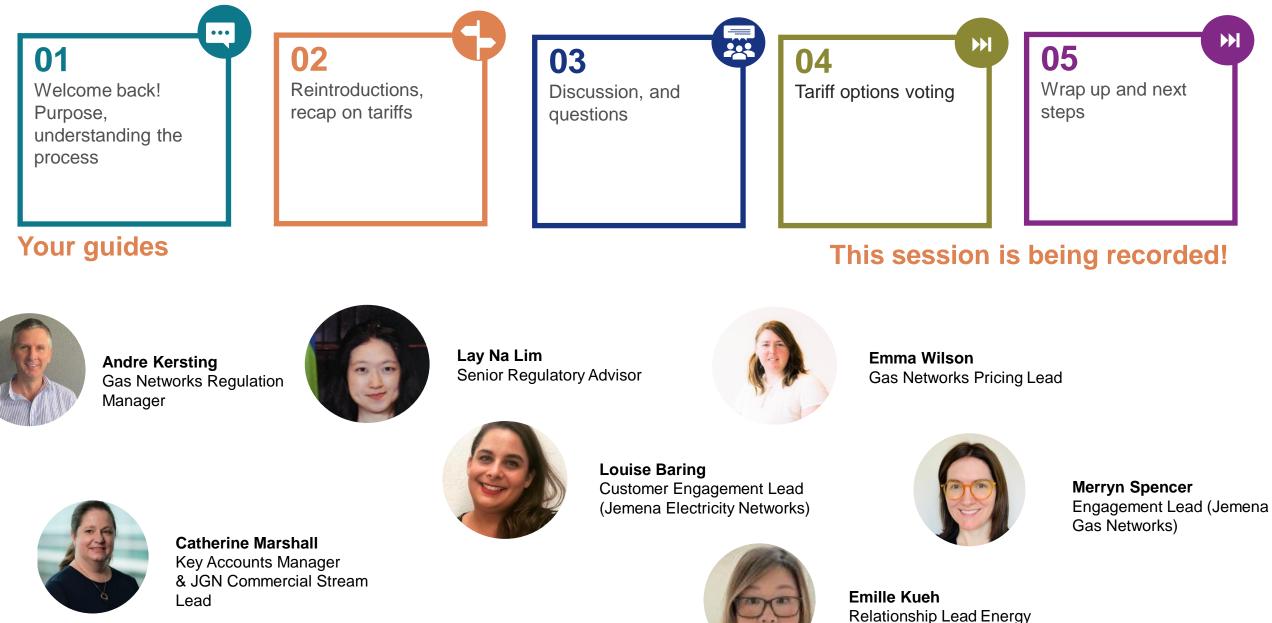
We acknowledge the Traditional Owners of the lands upon which we operate and recognise their continuing connection to land, waters, and culture.

We pay our respects to their Elders past, present, and emerging.

Pictured: artwork by Aboriginal artist Chern'ee Sutton from Mount Isa for our Group's Reflect Reconciliation Action Plan



# What to expect in the workshop



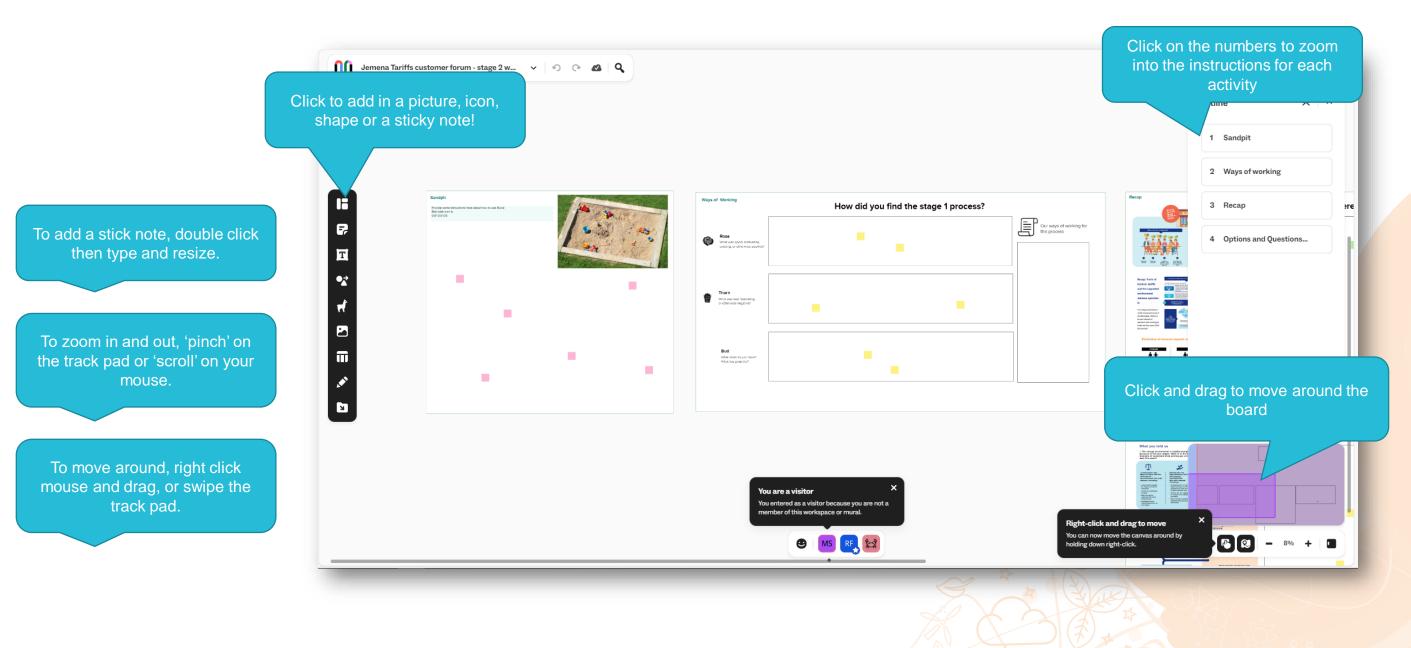
Retail

# **Navigating the Zoom Room**



#### All of you have used zoom before, here's a quick refresher

# **Guide to using Mural**





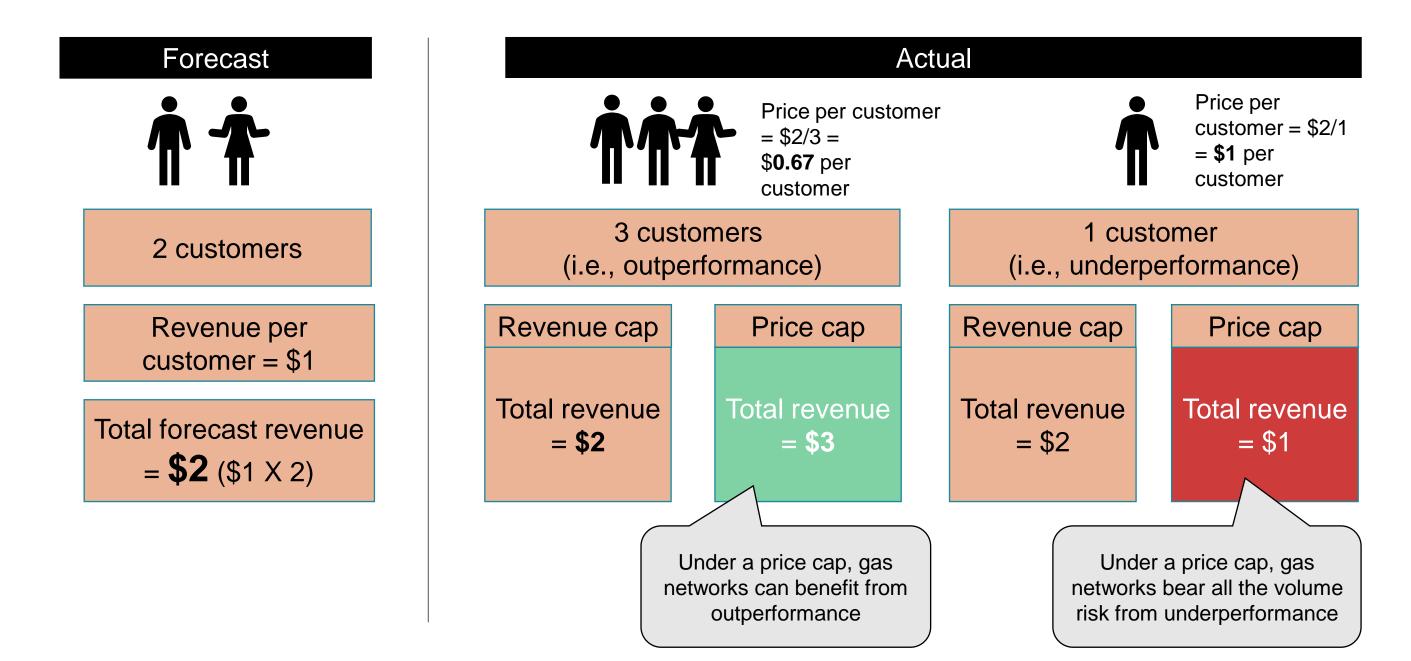
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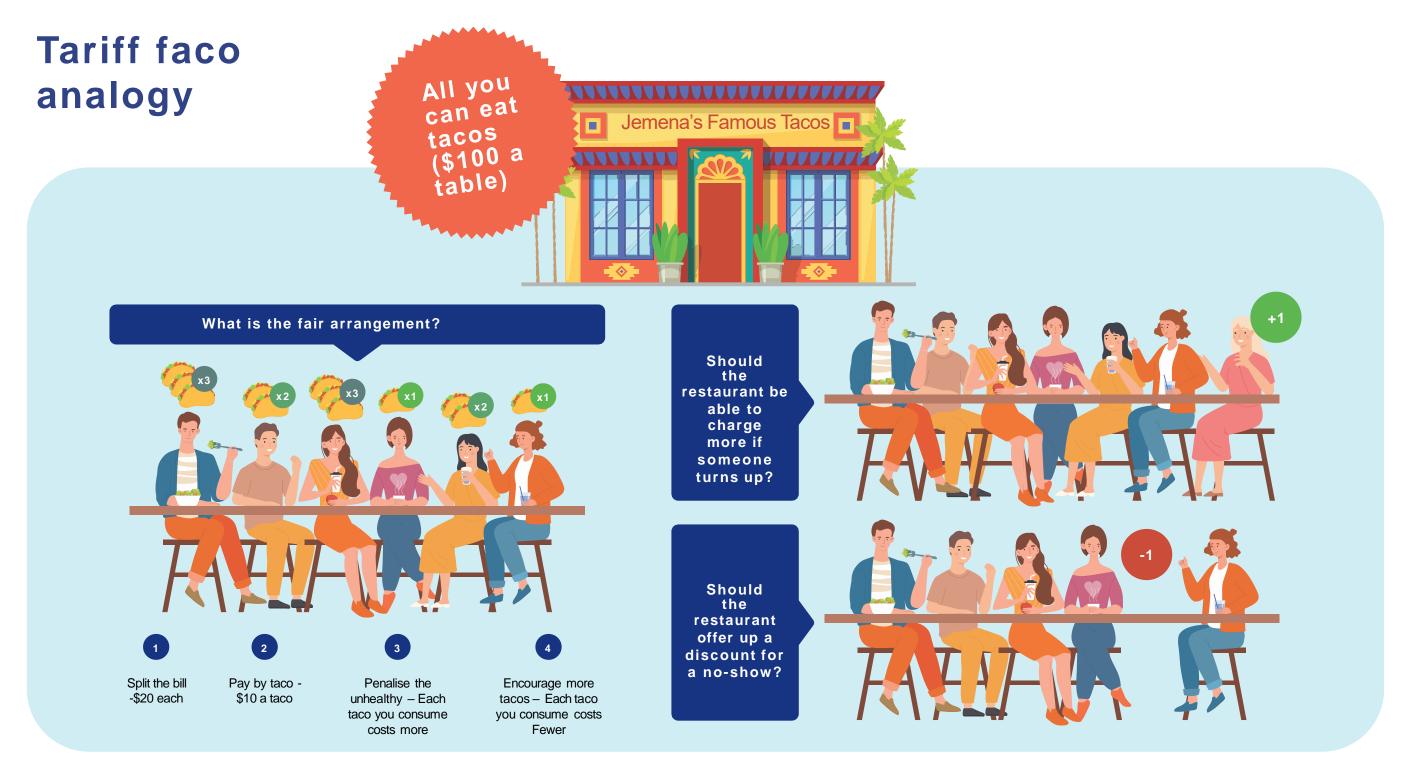
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Form of Control, The Regulator (the AER) sets the rules on how Jemena can earn its revenue. tariffs and the They can earn revenue in two ways, through either: Revenue cap - Total revenue is set within a 5-year period. Because revenue is guaranteed, prices can go up or down to ensure that the revenue regulated Revenue is achieved. If there are fewer customers using gas, then prices can go up to cap achieve the revenue requirement. If more customers are using gas, prices can go down. environment A price cap – Prices are set within a 5-year period. Once prices are set, it Price doesn't matter whether there are fewer or more customers on the network. Prices stay the same within the 5-year period. If there is less gas demand, cap Jemena operates in JGN's revenues go down. If there is more gas demand, revenues go up. **Combination of both** Hybrid approach - customer and Jemena share the risk The energy environment is rapidly changing because of net zero targets. What is in Hydrogen Wind Gas Electricity the best interests of customers Solar **Biomethane Batteries** The when pricing gas for the next energy environmentis rapidly changing five years (2025-2030 period)? The gas network is paid for because of net

**Fewer customers** More customers lemena Jemena Which of these is in the best interests of customers? No one knows what the best form of control would be, for the next five years and beyond. It is hard, because no-one knows what will happen - will gas be phased out quickly, will customers move away from gas to electricity, or will new forms of 'green gas' mean that customers will stay and maybe even grow? Who should bear the risk of fewer customers?  $QQQQQQ \rightarrow QQ$ Tariffs (how gas is priced) need to pay for the existing by all customers that use it network, and pay for the network in the future What if lots of Is it appropriate that the zero targets ~ customers move away more gas people use, from gas over the next five the cheaper (per unit) it The challenge - what is in the best interests of customers in how network tariffs years? is priced becomes? for the next five years?

### Illustration of revenue impacts under different forms of control





# Key concept – price vs. revenue cap

Imagine you and 9 other friends (i.e. 10 of you altogether) are seeking a share house to rent.

You find a landlord that has a big house, which she can rent to all 10 of you for a good price!

The landlord needs to recoup the costs of maintaining the house, and pay off the mortgage. She needs \$50,000 for the next 5 years to cover this.

She is happy with collecting the rent from each of you at the end of each year. She just wants to make sure that she has \$50,000 in total, by the end of 5 years.

If all 10 friends stay in the house for the next 5 years, each friend has to pay \$1,000 per year.

50,000/10 friends/5 years = 1,000 per friend per year.





# Price vs. Revenue cap

Price cap

Let's say you know that 5 of your friends want to move overseas after two years...

With this information, how would you negotiate the terms of the contract? As a **tenant**, would you write in the contract that the landlord is only allowed to charge each tenant \$1,000 for the next 5 years, regardless of how many people end up staying in the house? As a **landlord**, how would you protect yourself against tenants leaving? You could state that if tenants start leaving the house, the rent of the remaining tenants would increase. E.g. if 5 friends leave halfway through, then the remaining 5 friends would have to pay double the rent.



Revenue

cap

## Recap of declining, flat and inclining block tariffs

#### **Declining block tariff**

#### • Most gas networks use this structure right now.

- The more you use the network, the less it costs (unit cost).
- There are two broad categories demand tariffs (Large Industrial consuming >10TJ per annum) and volume tariffs (Residential and small commercial customers).
- Examples given in the paper are from Jemena in NSW and AGN in Murray Valley (Victoria).

#### Flat tariff

- Less complex, customers pay a steady or flat unit rate.
- Small volume customers pay less.
- Large customers are generally worse off compared to declining block tariffs.

#### **Inclining block tariff**



- The more you use gas, the higher the unit cost.
- Best option for smaller volume customers.
- Large customers are still worse off.
- Incentive to use less gas.

## **Pricing principles**



Cost reflectivity: using the relevant laws here to observe cost reflective prices



**Price stability:** minimising large tariff increases to help customers manage bills in future



**Simplicity:** understandable, minimising transaction costs and applicability of overseas pricing structures



Revenue adequacy: efficient cost recovery



Fairness / equity: usage cost is according to costs of the network and

covering equity considerations like cost of living pressures.

**Summary of stakeholder** submissions on the **Australian Energy Regulator's** tariffs review





#### Context

- As you know in May 2023, the Australian Energy Regulator (AER) invited stakeholder feedback on their issues paper
- The AER noted that existing price cap mechanisms and declining block tariff structures, incentivise gas distributors to expand their network and encourage gas consumption. These approaches have been beneficial as they allow gas networks to recover large fixed costs across a more extensive customer base, resulting in lower unit costs for customers.
- We must give consideration to the National Gas Rules that includes pricing for efficiency.
- The review was in response to stakeholder feedback on updates to the National Gas Objective to incorporate an emissions reduction component, as well as broader interest in the transition to net zero.
- The review concluded in October 2023, and the regulator concluded in the report that networks are best placed to do this engagement.

Review of gas distribution network reference tariff variation mechanism and declining block tariffs

Issues paper for stakeholder feedback

May 2023

# Guide on reading the stakeholder submissions

#### Purpose

The purpose of this section is to provide a *brief overview* of stakeholder submissions to the AER's Issues Paper. It is **not** a substitute for the stakeholder submissions themselves. If you come across a submission that piques your interest, you can access the full submission on the <u>AER website</u>.

#### How to use this document

The AER received a total of *18 submissions* from stakeholders. These were from a mix of retailers, academics, gas networks, non-profit organisations, private consultants and industry groups.

This document gives a *very brief summary of some key points* raised in each submission. We recommend reading all these summaries first, then reading the full submission if it interests you.

Collectively, the summaries in this document give a sense of the diversity of views and opinions relating to tariff reform. Tariff reform is a complex topic, and the outcome of any tariff reform depends on a variety of factors.

#### What next?

We hope you enjoy reading the summaries.

If you have any questions about this document or tariff reform in general, please contact:

- Lay Na at Layna.lim@jemena.com.au
- Emma at Emma.Wilson@jemena.com.au

Note: On 31 October 2023, the AER published its final decision on its review. The final decision <u>can be found here</u>, and contains a summary of stakeholder submissions.

# Summary of retailers' submissions

Stakeholder	Tariff structure	Price cap or revenue cap?	Link to full submission
Red Energy & Lumo Energy	<ul> <li>Support declining tariff structure</li> <li>Retain price caps and declining block tariffs until the policy environment becomes clearer.</li> <li>Replacing declining block tariffs with inclining block tariffs is unlikely to reduce gas consumption substantially.</li> </ul>	<b>Support price cap</b> A shift to a revenue cap will transfer risk to customers.	Link to full submission here
EnergyAustralia	<ul> <li>n/a</li> <li>Valuing emissions reduction should be considered, incl. use of shadow carbon prices.</li> <li>Network tariffs could be restructured to align with capacity</li> <li>Consideration should be given to more fixed pricing, should there be a move to a revenue cap.</li> </ul>	<b>Support hybrid mechanism</b> Revenue caps have risks too and should be implemented in conjunction with higher fixed tariffs	Link to full submission here
AGL Energy Limited	Support flat tariffs, but only if gradually implemented Recommends reduction in variances within declining block tariffs and progressing towards flat tariffs in a staggered manner.	In the near term, no compelling reason to move to a revenue cap Does not recommend revenue caps, given that extreme changes in demand are unlikely in the near term.	Link to full submission here
ActewAGL Retail	<b>Support declining tariff structure</b> Declining block tariffs benefit residential customers that rely on gas, including disadvantaged and vulnerable households, by providing bill certainty.	n/a	Link to full submission here

# Summary of customer advocates & climate groups' submissions

Stakeholder	About this stakeholder	Tariff structure	Price cap or revenue cap?	Link to full submission
Public Interest Advocacy Centre	Independent non-profit organization that works with people and communities who are marginalised and facing disadvantage. <u>Read more here</u> .	<ul> <li>Support binding principles</li> <li>Instead of supporting a specific structure, suggested providing binding principles for tariff structures that support demand reduction and cost recovery for high levels of demand.</li> <li>Recommend differentiation between residential and large commercial/industrial users and low fixed charges for residential consumers.</li> </ul>	<b>Support price cap</b> Noted that price caps may lead businesses to "under-estimate" demand forecasts.	Link to full submission.
Brotherhood of St Lawrence Brotherhood of St Laurence Working for an Australia free of poverty	A social justice organisation working to prevent and alleviate poverty across Australia. <u>Read</u> <u>more here</u> .	<ul> <li>Support flat tariffs</li> <li>Advocates single-rate tariffs.</li> <li>Acknowledge that low gas users would benefit from abolishing declining block tariffs, and high users would be worse off. However, high gas users who are vulnerable must be supported through the transition.</li> </ul>	<b>Support price cap</b> Moving from price to revenue cap will transfer risk to customers	Link to full submission.
Darebin Climate Action Now	DCAN was born when a group of Melbourne residents met in 2006 to talk about how they might contribute to raising community awareness of the risks posed by climate change. <u>Read more here.</u>	<ul> <li>Support inclining block tariffs</li> <li>Suggested that the AER's ruling on tariffs should be short-term, pending a comprehensive review.</li> <li>Support inclining block tariffs but emphasize the need for measures to protect low-income individuals.</li> </ul>	<b>n/a</b> Expressed concerns about a shift from price caps to "volume controls" (i.e. revenue caps).	Link to full submission.
Lighter footprints	A local climate group committed to leading effective climate action. Read more here.	<ul> <li>n/a</li> <li>Revised their position on declining block tariffs, stating that changing the profile of block tariffs will have a negligible impact on consumption as retailers set tariffs.</li> <li>Should focus on making the transition to electricity easier for vulnerable customers.</li> </ul>	<b>Support revenue cap</b> Believes that under a revenue cap, customer bills will be lower and there will be less pressure for increasing demand	Link to full submission.

# Summary of consultants' submissions

Stakeholder	About this stakeholder	Tariff structure	Price cap or revenue cap?	Link to full submission
Cambridge Economics Policy Associates	CEPA Australia provides clients across Asia-Pacific with regional market expertise and services supporting effective decision- making and policy formulation. <u>Read more here.</u>	<ul> <li>Support declining tariff structure (but a better designed one)</li> <li>A well-designed declining block tariff can reflect efficient consumption levels and marginal costs for larger users.</li> <li>Considerations should be given to the allocation of fixed costs to variable charges to replicate the effect of a carbon tax.</li> </ul>	<ul> <li>n/a</li> <li>Changing from a price cap to a revenue cap affects the allocation of volume risk in the short term but not in the long term.</li> <li>Under the current framework, under either a price or a revenue cap, customers remain exposed to the risk that, if demand declines substantially, gas distribution network prices will rise in the next access arrangement period.</li> </ul>	Link to full submission.
Institute for Energy Economics and Financial Analysis	Examines issues related to energy markets, trends, and policies. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy.	Support flat/inclining tariff structure Inclining block tariff structure disincentivizes greater gas consumption	<b>Support price cap</b> Revenue cap mechanism is inappropriate: may accelerate the 'death spiral' of the gas network, transferring more risk to customers.	Link to full submission here.
Institute for Energy Economics and Financial Analysis IEEFA.org	Based in Asia, Australia, Europe and North America. <u>Read more here.</u>			

# Summary of industry and consumer groups' submissions

Stakeholder	About this stakeholder	Tariff structure	Price cap or revenue cap?	Link to full submission
Energy Consumers Australia	Represent residential and small business energy consumers to have their voices heard by the sector. Work with other consumer groups to gather evidence-based research with a national perspective, distil it to key viewpoints, and feed it back to the market to influence outcomes. <u>Read more here.</u>	n/a	n/a	Link to full submission.
Energy Networks Australia Energy Networks Australia	National industry body representing Australia's electricity transmission and distribution and gas distribution networks. Members provide more than 16 million electricity and gas connections across Australia. Read more <u>here.</u>	No preference Noted that " there are many balancing issues and trade-offs at play, and customers should be thoroughly consulted on, and informed of the consequences of, their risk sharing and tariff preferences through individual access arrangement processes rather than reaching any mandated national approach through this review".	No preference Noted that "Any potential changes to tariff block structure should not be considered in isolation and, to avoid unintended consequences, potential changes to tariffs should be considered alongside a range of other factors".	Link to full submission.
Australian Energy Council AUSTRALIAN ENERGY COUNCIL	Represent 20 major electricity and downstream natural gas businesses operating in the competitive wholesale and retail energy markets. Members sell gas and electricity to over 10 million homes and businesses and are significant investors in renewable energy generation. <u>Read more</u> <u>here.</u>	Support flatter tariff structure but only gradually Gradually increasing the fixed charges component and flattening the declining block structure can encourage a reduction in gas connections and promote electrification.	<b>No preference</b> Both price cap and revenue cap regulatory approaches have limitations in addressing net zero 2050 and environmental concerns.	Link to full submission.

# **Summary of academics' submissions**

Stakeholder	About this stakeholder	Tariff structure	Price cap or revenue cap?	Link to full submission
Alan Pears Senior Industry Fellow, College of Design and Social Context, RMIT	<ul> <li>Through his consulting practice and links to community and professional organisations, Alan has worked on many projects in the clean energy, planning, climate policy, green building and public education fields.</li> <li>Bachelor of Engineering (Hons) (Monash University)</li> <li>Diploma of Education (Monash University LinkedIn profile</li> </ul>	<ul> <li>n/a</li> <li>Different versions of declining block tariffs can affect consumers differently.</li> <li>Instead of a definite approach, the criteria for tariff design should ensure social equity is achieved while managing gas network- related costs arising from decreasing gas consumption.</li> <li>Network tariffs are only one element of consumer bills.</li> </ul>	<b>n/a</b> Noted that the "reasonable return on investment" approach should not prioritize network profits over consumers.	Link to full submission here.
Ron Ben-David via Monash Business School	<ul> <li>Senior leadership roles in policy development and economic regulation particularly in Victorian energy and water sectors.</li> <li>Doctor of Philosophy, PhD, Economics (University of Melbourne)</li> <li>Bachelor of commerce, economics (University of Melbourne)</li> <li>Bachelor of Science (University of Melbourne)</li> <li>LinkedIn profile</li> </ul>	<ul> <li>n/a</li> <li>Any proposed network tariffs will have equity implications. Regulators must robustly assess redistributive effects.</li> <li>Although there are theoretical arguments against declining block tariffs, there may be practical reasons to maintain them.</li> </ul>	<ul> <li>n/a</li> <li>Concerned about the recovery of profits by gas networks.</li> <li>Does not conclude whether a price cap or revenue cap is better for consumers.</li> </ul>	Link to full submission here.

# Summary of gas networks' submissions

Stakeholder	About this stakeholder	Tariff structure	Price cap or revenue cap?	Link to full submission
Australian Gas Infrastructure Group	Own and operate infrastructure that delivers gas to more than two million homes and businesses across Australia. Including SA, NT, Victoria, QLD, WA and the southern part of NSW. Read more here.	<ul> <li>Support declining tariffs</li> <li>Volume of gas per customer has been declining for several years, challenging the AER's belief that declining block tariffs encourage increased volumes.</li> <li>Flat or inclining block tariffs may reduce demand compared to declining block tariffs, but this does not necessarily reduce emissions overall.</li> </ul>	<ul> <li>Support price cap</li> <li>The relationship between price caps and connection numbers is unclear. Customer preferences and economic viability also influence connection growth.</li> <li>Revenue caps: Fluctuating prices due to difficulties in demand forecasting may result in more significant price variations for consumers compared to electricity.</li> </ul>	Link to full submission
Evoenergy evoenergy	Operates and maintains the ACT electricity and gas network. Read more <u>here.</u>	<ul> <li>n/a</li> <li>Declining block tariffs are more efficient as they align with the underlying costs of delivering gas.</li> <li>But declining block tariffs do not discourage gas usage during cold periods</li> </ul>	<ul> <li>n/a</li> <li>Price Cap has benefited customers by incentivizing network expansion, driving efficiency, and lowering prices.</li> <li>However, price caps do not align with emissions reduction or community expectations.</li> </ul>	Link to full submission here
Jemena Gas Network	Our network distributes natural gas to 1.5 million residential business and industrial sites in Sydney, Newcastle, the Central Coast and Wollongong, as well to customers in more than 20 regional centres.	<b>n/a</b> Preference is to avoid significant changes in risk sharing between networks and customers.	<ul> <li>Hybrid approach</li> <li>The energy landscape is still evolving. A prudent and cautious approach is required at this stage.</li> <li>Recommend a hybrid cap and collar approach.</li> </ul>	Link to full submission here.

## What residential

# customers said in stage one workshops

This section gives a summary of what residential customers said in our workshops in July and August 2023.





#### What residential customers told us

1. The energy environment is rapidly changing because of net zero targets. What is in the best interests of customers when pricing gas over the next five years? 2. Is it appropriate that the more gas people use, the cheaper (unit cost) it becomes?



Jemena bears risk: Approximately half the participants recommended this with reasons including:

- Jemena has the capacity for analysis and business forecasting
- Jemena is a profit-based company
- Risk is too high for customers with cost-ofliving pressures
- Uncertainty of future customer base due to net zero targets.



- Sharing the risk: Approximately half the participants recommended this with reasons including:
  - Uncertainty due to net zero targets including around the potential future customer base, so it's right to share the costs
  - Jemena has the capacity for analysis and business forecasting
  - Risk is normally accepted by customers in the costs of goods and services.

Some customers believe it is appropriate because:

- Business costs will impact the economy and customers if we change
- We must consider larger household customers
- We are still waiting on government policy
- We need to consider efficiency and affordability for all.

Some customers believe it is inappropriate because:

- We need to consider making it more equal or fair for smaller gas users
- We need to consider the net zero goals and environmental values
- It should be more affordable to encourage connections.

#### What customers grappled with

## As they explored the questions, they grappled with the following:

- Encouraging gas usage customer bills
- Combined risk sharing between Jemena and customers
- Larger customers and their gas usage
- Encouraging gas usage efficiency and environmental considerations
- Cost of living pressures and fairness
- The retailer passing on changes in tariffs.

# A group definition from customers

#### 'What's in the best interest of customers?'

Household customers shouldn't be disadvantaged, and gas supply should be reliable and safe – and we should meet and exceed environmental obligations.

#### Revisiting these decisions with the best interests of customers in mind

Residential customers agreed either Jemena should bear all OR most of the risk (under a hybrid option).



- Jemena was able to better forecast gas usage and customer base
- Customers should take a role in risk sharing as this was seen to help Jemena stay in business and therefore provide a safe, reliable and affordable gas service.

Some customers in our workshops agreed that it was inappropriate to price gas to encourage people to use gas more.

- 2
- The need to balance efficiency and and affordability for household customers
- Small Household customers can be disadvantaged by this pricing method
- Large Household customers and high users can be advantaged with this pricing method.

# How residential customer feedback is

shaping our early thinking

This section summarises our early thinking and why we're proposing these options.





## Early thinking: keeping customers in mind as they transition

What are we proposing	What can we do later?	How does this align with the residential	What residential customers told us
now?		customers feedback?	Fairness is important
Separate out Household customers and Large Commercial customers.	Develop a different set of tariffs for Household customers and Large	Affordability and Equity Larger commercial entities and households have different ability to pay for gas and should	for smaller gas consumers
	<ul> <li>Commercial customers.</li> <li>Adjust fixed vs. variable pricing</li> </ul>	face different prices.	Affordability needs to be prioritised
Combine price cap and revenue cap ("Combination cap").	Depending on market developments (such as the pace of electrification and renewable gas), we could further adjust the Combination cap.	<ul> <li>Sharing of demand risk</li> <li>With the Combination cap, JGN will absorb loss of revenues (up to a point) if customers depart the network.</li> <li>On the flip side, any unexpected gains due to a surge in customers won't result in windfalls for JGN.</li> </ul>	JGN and customers should share the risk of customers leaving the network
Streamline declining block tariffs.	Depending on consumption patterns, we could further flatten tariffs and/or incline tariffs.	<ul> <li>Pricing for efficiency (as required by the rules)</li> <li>Cost reflective pricing</li> <li>Pricing should avoid bill shock where possible.</li> </ul>	Tariffs should reflect the costs to provide gas services for each customer class

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## How our early thinking aligns with the pricing principles

	Cost reflectivity	Price stability	Simplicity	Revenue adequacy	Fairness / equity
	Using the relevant laws to observe cost effective prices	Minimising large tariff increases to help customers manage bills in future	Understandable, minimising transaction costs and applicability of overseas pricing structures	Efficient cost recovery	Usage cost is according to costs of the network and covering equity considerations like cost of living pressures
Tariff blocks	Fully aligns	Fully aligns	Fully aligns	Fully aligns	Partially aligns
Fixed vs variable	Partially aligns	Partially aligns	Partially aligns	Fully aligns	Partially aligns
Residential vs commercial	Fully aligns	Fully aligns	Fully aligns	Fully aligns	Fully aligns

## JGN's customers and how they use gas



#### Households

- 98% of our customer base
- Use 31% of total gas we deliver
- Include home owners, tenants, vulnerable customers
- · Mixture of standalone and high-density housing



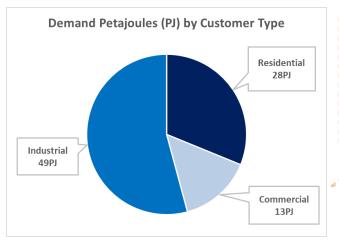
#### **Business**

- 2% of our customer base
- Use 69% of total gas we deliver
- Range from small businesses (e.g. restaurants, hairdressers) to large industrial businesses (mining companies, food manufacturers)



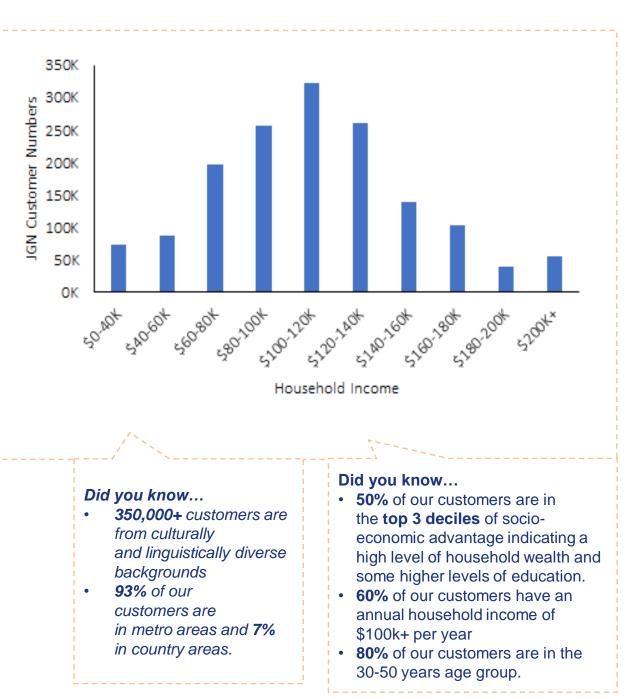
#### Intermediaries

- · Include property developers, landlords and body corporates
- Landlords make some appliance decisions on behalf of customers (e.g. gas vs electric hot water system)
- Body corporates can fix gas metering arrangements at their site (for example, within a high-rise apartment building, or for an individual business in a shopping centre)

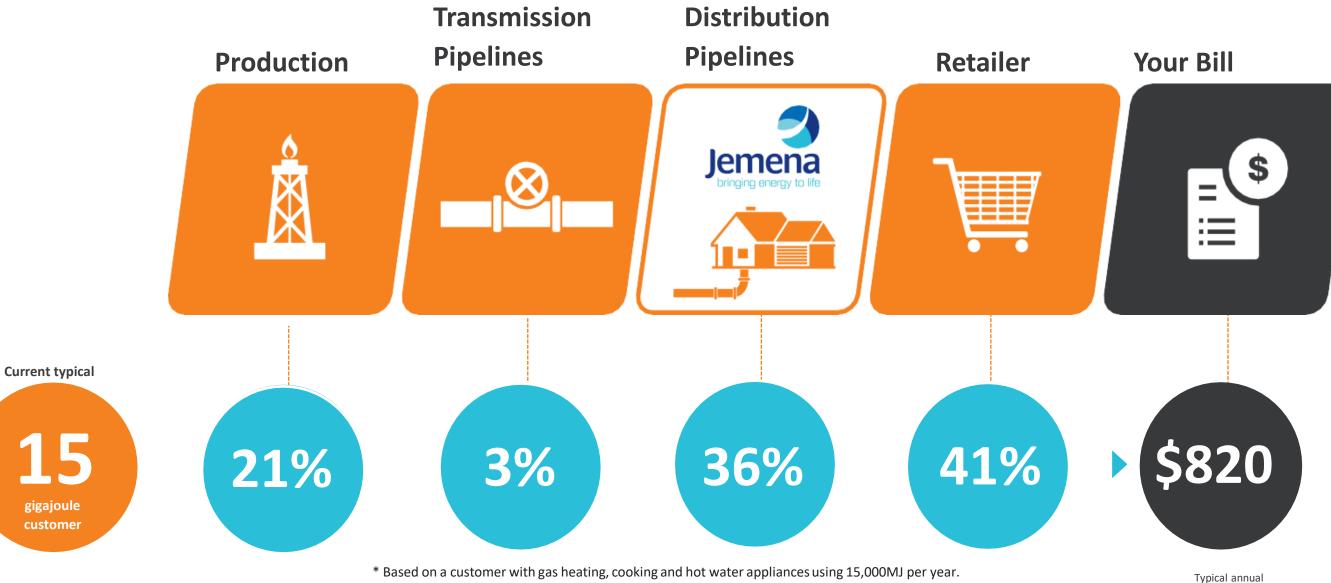


#### 2022-23 demand in NSW was 91 PJ,

- made up of:31% households
- 54% industrial customers
- 15% commercial customers.



## **Quick reminder: Jemena's proportion of the overall bill**



Calculated using assumed wholesale price of \$10GJ. Annual bill is for 2023-24 year.

gigajoule customer

household bill

## Why are we doing this?

What's the reason for the proposed changes?

## Why 200 Gigajoules?

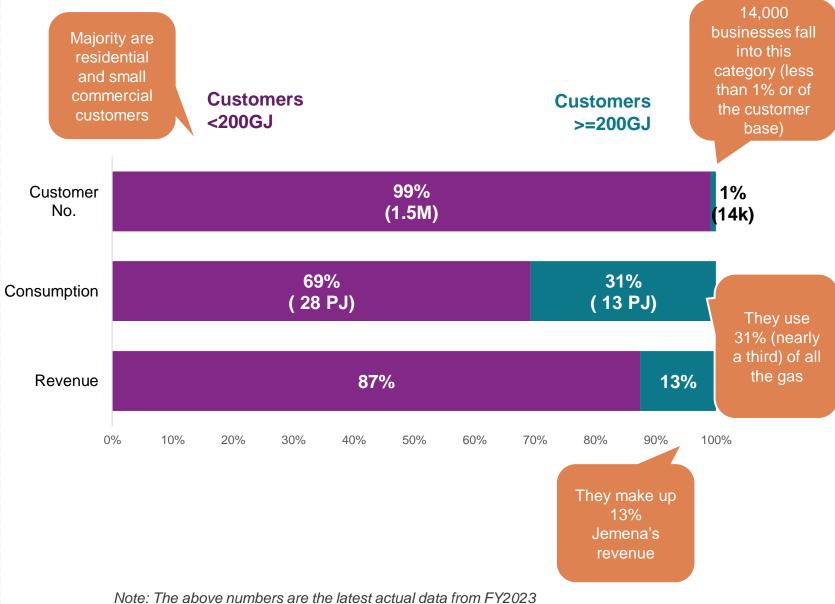
The 200 Gigajoule cut-off is about how much you use.

### Tariffs can't do two things

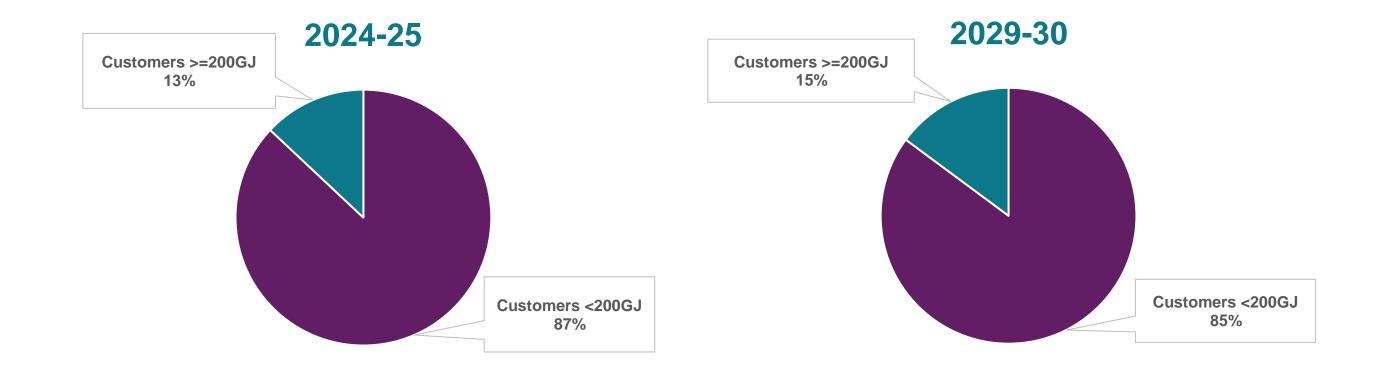
at once

- Focusing on affordability,
- equity and fairness
- Minimising the impact on

#### the winners and losers



#### How will this impact revenue collected over time?



Over time Jemena will **increase** the proportion of revenue collected from higher-use customers by increasing their tariffs

And **decrease** the proportion of revenue collected from lower-use customers by decreasing their tariffs

#### **Proposed new tariff block structure** and customer impacts

#### Who may be impacted by the new structure?

ld	Coastal	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
	Country	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6

OI



Large businesses



Residential smaller user (e.g. city apartment dweller, cooktop only)



Residential large family home (regional, many appliances, multiple heaters)

(e.g. city

dweller,



**Residential smaller** user (e.g. small house or townhouse in the city, 1-2 appliances)

Proposed New	Less than 200GJ	Block 1	Block 2	Block 3	Block 4
	High consumption (over 200GJ)	Block 1	Block 2	Block 3	Block 4



Covers Block 1-4 in old structure



Residential smaller user (e.g. city, small house or townhouse, 1-2 appliances)

Residential smaller user apartment cooktop only)



Large luxury family home (e.g. with a heated pool in the Eastern Suburbs of Sydney, or body corporate)



Large businesses

### Revision – price vs. revenue cap

Imagine you and 9 other friends (i.e. 10 of you altogether) are seeking a share house to rent.

You find a landlord that has a big house, which she can rent to all 10 of you for a good price!

The landlord needs to recoup the costs of maintaining the house, and paying the mortgage. She needs **\$50,000 for the next 5 years** to cover this.

She is happy with collecting the rent from each of you at the end of each year. She just wants to make sure that she has \$50,000 in total, by the end of 5 years.

If all 10 friends stay in the house for the next 5 years, each friend has to pay \$1,000 per year.

50,000/10 friends/5 years = 1,000 per friend per year.



cap

As a **landlord**, how would you protect yourself against tenants leaving? You could state that if tenants start leaving the house, the rent of the remaining tenants would increase. E.g. if 5 friends leave halfway through, then the remaining 5 friends would have to pay double the rent.



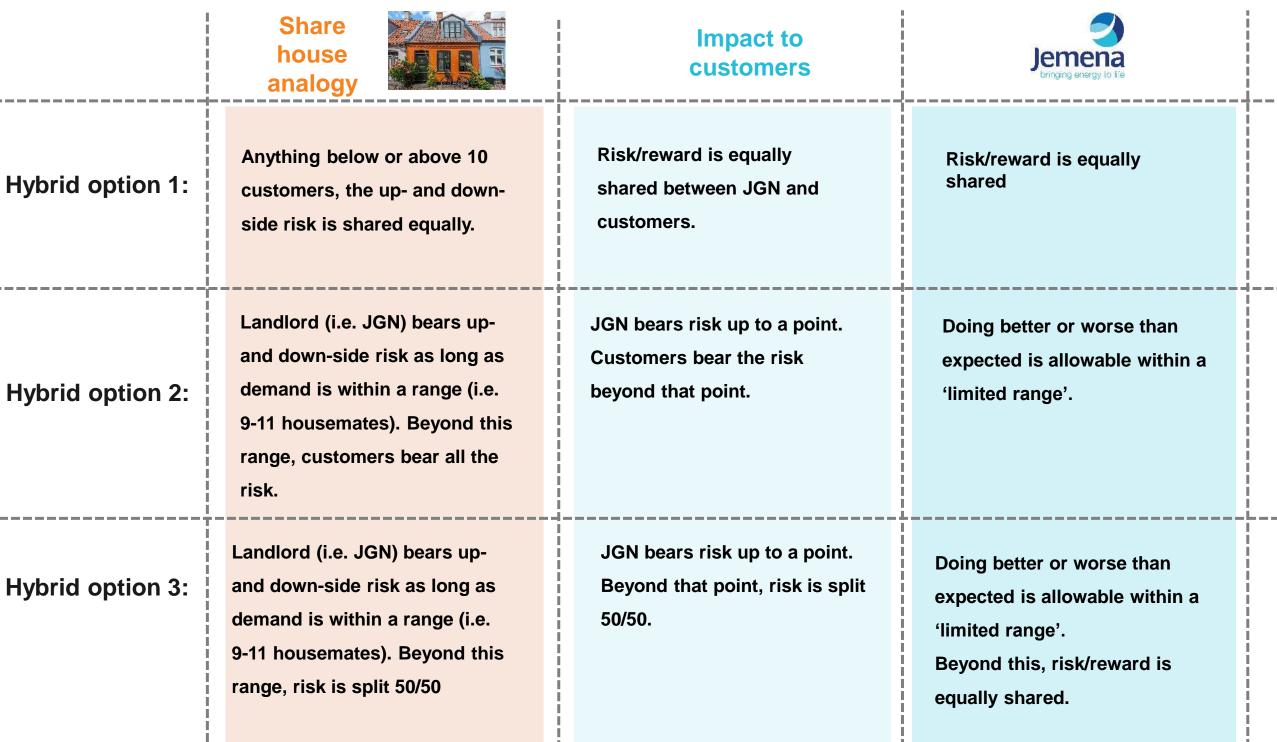
Let's say you know that 5 of your friends want to move overseas after two years...

With this information, how would you negotiate the terms of the contract?

As a **tenant**, would you write in the contract that the landlord is only allowed to charge each tenant \$1,000 for the next 5 years, regardless of how many people end up staying in the house?

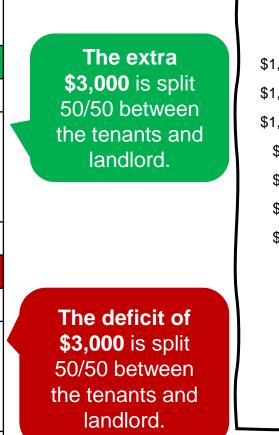
Price cap

#### Sharing of risk: Price cap and revenue cap: hybrid options

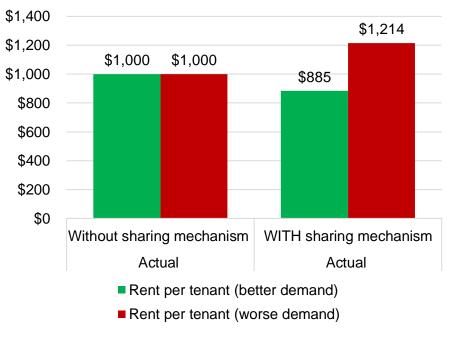


## Hybrid Option 1: 50/50 sharing mechanism

		Actual	Actual	
	Forecast	Without sharing mechanism	WITH sharing mechanism	
Better than expected	1			
No. of tenants	10	13	13	
Total rent (how much the Landlord gets)	\$10,000	\$13,000 Landlord Better off by \$3,000		
Rent per tenant	\$1,000	\$1,000	\$885	
Worse than expected				
No. of tenants	10	7	7	
Total rent (how much the Landlord gets)	\$10,000	\$7,000 Landlord Worse off by \$3,000		
Rent per tenant	\$1,000	\$1,000	\$1,214	



## How much each tenant pays, without and with a sharing mechanism



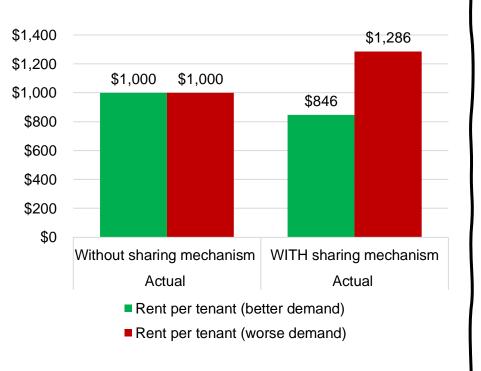
## Hybrid Option 2: "Limited range" sharing (1 customer)

	Actual		Actual	
	Forecast	Without sharing mechanism	WITH sharing mechanism	
Better than expected				
No. of tenants	10	13	13	
Total rent (how much the Landlord gets)	\$10,000	\$13,000	\$11,000	
Rent per tenant	\$1,000	\$1,000	\$846	
Worse than expected				
No. of tenants	10	7	7	
Total rent (how much the Landlord gets)	\$10,000	\$7,000	\$9,000	
Rent per tenant	\$1,000	\$1,000	\$1,286	

The landlord gets upside from 1 tenant only. Tenants get all the benefit from the 2 extra tenants (eg in the range of 9-11 tenants)

gets downside from 1 customer only. Tenants bear downside from 2 less tenants (eg in the range of 9-11 tenants)

## How much each tenant pays, with and with and without a sharing mechanism



## Hybrid Option 3: "Limited range" sharing + 50/50 split

		Actual	Actual			ow much oach ton	ant nave with and
	Forecast	Without sharing mechanism	WITH sharing mechanism	The landlord		low much each ten vith and without a s	
Better than expected				gets upside from	\$1,200		\$1,143
No. of tenants	10	13	13	1 tenant. The	\$1,000	\$1,000 \$1,000	\$923
Total rent (how much the Landlord gets)	\$10,000	\$13,000	\$12,000	benefit from the 2 extra tenants (eg outside 9-11	\$800 \$600		
Rent per tenant	\$1,000	\$1,000	\$923	tenants) is split	\$400		
Worse than expected			l	50/50	\$200		
No. of tenants	10	7	7		\$0	Without sharing mechanism	WITH sharing mechanism
Total rent (how much the Landlord gets)	\$10,000	\$7,000	\$8,000	downside from 1		Actual Actual <ul> <li>Rent per tenant (better demand)</li> <li>Rent per tenant (worse demand)</li> </ul>	
Rent per tenant	\$1,000	\$1,000	\$1,143	tenant. The deficit is of 2 less (eg outside 9-11			

tenants) customers is split 50/50

## Comparison of different rents across the options for risk sharing

