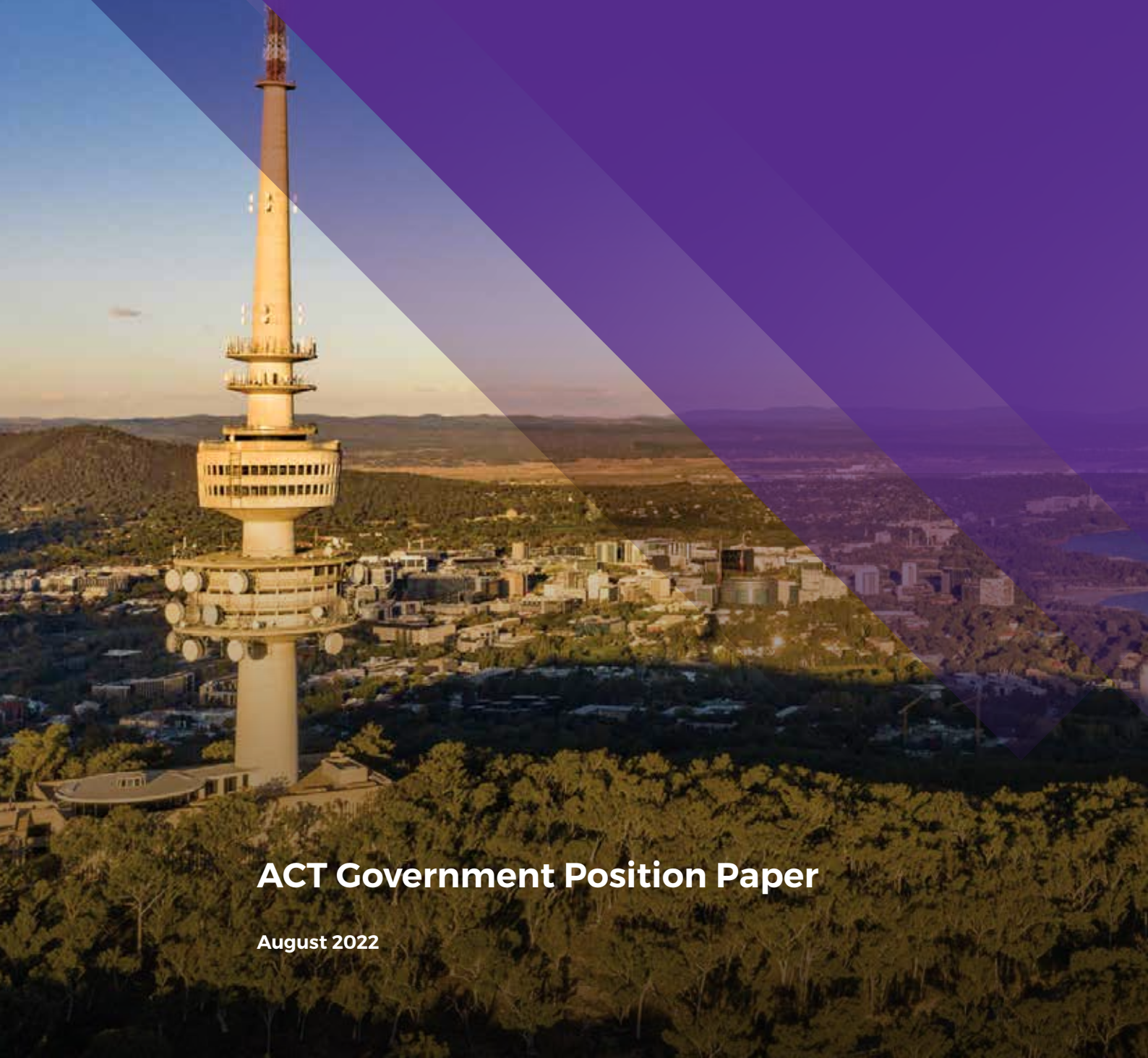




**ACT**  
Government

POWERING CANBERRA

# Our Pathway To Electrification



**ACT Government Position Paper**

August 2022



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# Foreword

Yuma,

The ACT is proud to be a world leader in climate action and we are now taking the next step forward to get us closer to net zero emissions by committing to an electrification pathway and transition away from fossil fuel gas by 2045.

Our Government values the things Canberrans care about and this includes taking real action on climate change and supporting our most vulnerable. We are committed to managing the transition to a net zero emissions energy future in a responsible and considered manner, and recognise that this is a long-term transition.

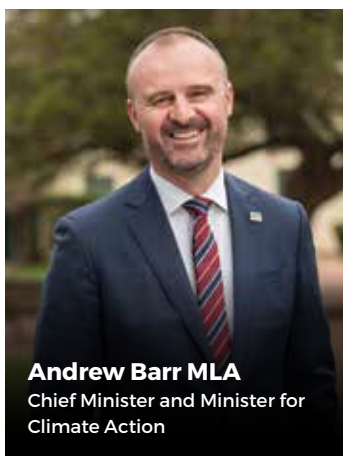
We should be proud that we are leading the nation on climate action. As we have seen across Australia in recent times, our community wants and expects Government at all levels to take real action. But, we know that there is still a great deal of work to be done here in the Territory and our decision to pursue an electrification pathway supports the decisive and leading climate action role our community has asked of us.

We're doing this because an all-electric Canberra will allow us to power our Territory, our homes, our businesses and our transport in a cleaner and cheaper way. Transitioning to an electric energy supply is going to help many in the ACT to save money in the coming years.

We want to enable the majority of ACT energy consumers to save money by transitioning at a time that is right for them by providing early, long-term certainty around our zero emissions energy pathway. Ensuring energy is affordable and people can make the best energy choices remains a key goal of this Government.

We're responding to climate change as an economic opportunity to attract innovative new enterprises and high-value jobs and we will work collaboratively with Canberra's businesses on this long-term transition away from fossil-fuel gas.

The ACT Government's pathway to electrification is another step forward in Canberra's journey to be Australia's first net zero jurisdiction in 2045.



**Andrew Barr MLA**  
Chief Minister and Minister for  
Climate Action

# Foreword

**One of the greatest challenges faced by governments across the world is managing the risks created by the effects of climate change and learning to build smart, climate resilient cities.**

The ACT Government continues to lead the world in cutting emissions. In 2020, we achieved our target of 100% renewable electricity supply, making a significant cut in our greenhouse gas emissions. Now we are working on our two remaining highest sources of emissions; transport and fossil fuel gas use.

This position paper focuses on our work to transition the Territory away from gas use, to help reach our target of net zero emissions by 2045. It outlines the reasons for the transition, the analysis we have done so far and the considerations for community and business as we make this transition. Importantly, it sets out the next steps we will take in close consultation with industry, business, and the community.

This is a long-term transition and we are not turning off the gas network overnight. We have time to consider the challenges and opportunities carefully and develop solutions where required to ensure it is a just transition. Over the coming years, we want to better understand the specific barriers that consumers may face in transitioning to full electrification by 2045 in the places that you live and you work.

It is also a transition that will rely on the combined efforts of the entire ACT community over the coming decades. We are fortunate in the Territory to have such an engaged, informed and sustainability-conscious community.

I encourage all Canberrans to take time to consider what the shift away from fossil gas will mean for their homes and businesses and develop a transition plan that will work for them. I look forward to working together to make Canberra a world-leading net zero emissions city.



**Shane Rattenbury MLA**  
Minister for Energy, Water and  
Emissions Reduction



# Executive Summary

The ACT Government is committed to reaching net zero emissions by 2045. In 2020, we secured a nation-leading 100% renewable electricity supply for the ACT, which was a huge achievement for the Territory and a significant step towards net zero emissions. Our effort is now focused on reducing emissions from the two most significant remaining sources – transport and fossil fuel gas received through the gas network at our homes and businesses.

The ACT will transition away from fossil fuel gas use to renewable electricity, with the potential use of renewable gases for specific purposes where needed, by 2045. This Position Paper explores how the ACT Government have come to this decision and some of the key challenges moving forward.

This transition requires a coordinated and planned approach to be completed over the next 22 years to maintain a secure, affordable and reliable energy supply across the ACT. To guide this transition, the government will deliver a new Integrated Energy Plan for the Territory by 2024.

The way we live as we move toward net zero emissions will change rapidly, with many benefits for Canberrans. Renewable electricity will be our primary energy source – replacing gas for heating and cooking and replacing petrol and diesel in our cars. Canberrans will save time and money by being able to charge their electric vehicles at home, and efficient electric appliances have lower running costs than gas alternatives. If we start working towards the transition now, Canberrans can make a plan to swap gas appliances for electric options when they are due for replacement rather than have to rapidly replace appliances earlier than necessary.

The key reasons for transitioning away from fossil fuel gas use are:



## The environment

Fossil fuel gas is the second largest remaining source of emissions after transport (now that we have 100% electricity) in the ACT. It accounts for 20% of our overall emissions.



## Costs

People are already transitioning away from fossil fuel gas. We need a plan to manage this change sustainably and responsibly in the best interests of consumers and the ACT.



## Savings

The Government is offering incentives to switch from fossil fuel gas to electricity. Transitioning away from fossil fuel gas and using rooftop solar and battery storage will enable ACT energy consumers to save money.

The first step in the transition pathway has been detailed modelling work, which helped identify the best pathway for the transition. Several factors were considered such as:

- > Costs to consumers
- > The amount of emissions reduction that could be achieved
- > What is currently technically possible
- > The overall economic effects for the ACT.

The transition pathway means that over the next 20 years, the price of fossil fuel gas will increase over time, such that it will be in the interests of ACT energy consumers to gradually transition their homes and businesses off a fossil fuel gas supply at a time that is right for them.

For most Canberrans, this transition will be very similar to the introduction of digital TV or the phase out of leaded petrol – gas cooking, heating and hot water will be replaced with electric options when that household or business is in the market for a new appliance. However, the ACT Government recognises that this transition may be complex for households with lower incomes and for businesses where electric technology doesn't currently exist or it is too expensive to transition. The ACT Government will be investigating how best to support these groups to transition away from gas use at a time that is right for them.

Some key challenges we will need to address include:



## The Integrated Energy Plan

**The Integrated Energy Plan will set out the big picture for how the ACT will transition away from fossil fuel gas use, optimise our energy system, engage and support energy consumers, and establish collaborative partnerships with organisations across the ACT to support all this work.**

It will include the gas transition pathway alongside community battery storage, electric vehicles, funding options to support electricity network upgrades, and renewable gas opportunities, among other projects, and demonstrate how all these aspects of our energy transition will interconnect.

The Integrated Energy Plan will be developed in a series of stages as the ACT energy sector transitions, technology improves, and we learn more about how we produce and use energy in the new environment.

# Our journey to 2045



## We are here

A variety of ACT Government programs and supports are already available to help consumers begin to transition to efficient electric appliances, and access rooftop solar PV and battery storage.



## First Step

Find out what to expect during the transition and understand what key challenges and opportunities your home, business or industry might experience during the transition.



Remember, we have more than 20 years to transition!



## 2023

Regulation to prevent new gas connections commences.



## 2022

Commence consultation on a regulation to prevent new gas connections for certain types of developments.



## 2023-2024

It's a good time to start to develop your own transition plan for your home using our personalised transition tool.



## 2024

The ACT Government will release the first stage of the Integrated Energy Plan.



## Over the next 5-10 years

More households and business consumers may start to replace their gas appliances with electric appliances when gas appliances stop working. It may take up to 15 years for some appliances.



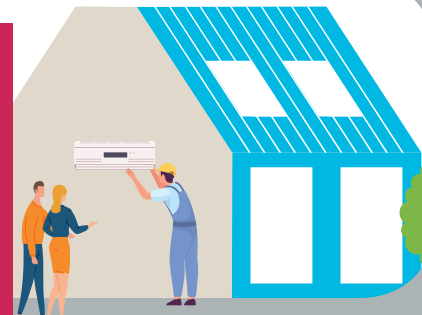
## 2035-2040

Gas prices will start to increase more rapidly and more consumers will transition from gas to electricity, meaning prices will be higher for those who are still on the network.



## Within 15 years

You may start to abolish your gas connections once your final gas appliances are replaced. This means the connection is closed off and cannot be reconnected.



## 2040-2045

Remaining consumers who are still connected to the gas network will need to transition to electricity unless zero emissions alternatives are available.



## 2045

The ACT reaches net zero emissions.



## PART ONE

# Why is the ACT transitioning away from fossil fuel gas?

## Government Policy

In 2019 the ACT Government released the [ACT Climate Change Strategy 2019-2025](#), a strategy that outlines the next steps to reducing emissions in the ACT and increasing resilience to the impacts of climate change. This strategy includes actions to reduce emissions from fossil fuel gas, including developing a plan, by 2024, for achieving zero emissions from gas use by 2045.

In 2020, the Government reinforced its focus and attention on reducing emissions from fossil fuel gas by including a range of commitments in the [Parliamentary and Governing Agreement for the 10th Legislative Assembly for the Australian Capital Territory \(Parliamentary and Governing Agreement\)](#), which sets out the government's commitments for the current term.

These commitments include legislating to prevent new gas connections in greenfield residential developments in the ACT and commencing a project to advance all-electric infill developments, with a goal of no new gas connections to future infill developments from 2023.

Fossil fuel gas use accounts for about 20% of our current emissions and finding a way to reduce those emissions is a complex challenge. While our renewable electricity supply has been able to be secured largely through direct government action by contracting with renewable energy generators, reducing emissions from gas use will be something the entire ACT community needs to work towards together over the coming decades.

## ACT's total greenhouse gas emissions



## Consumer trends

While reaching our emissions reduction target is an important priority, the other key reason for the transition is that this change is already underway.

Technical and economic modelling showed that gas usage will decline by 2.5% a year through to 2045, a decline of around 57% mainly due to falling gas consumption per connection, as well as a projected steady decline in connections from 2023. Many new builds are already opting for an all-electric energy supply as the retail bills are on average less expensive per year, particularly when the gas connection fee is factored in.

We also know that gas prices have increased significantly and are a substantial component of the cost of living. Retail gas prices increased by 100% in real terms over the period from 2000 to 2020 and real gas prices for ACT residential customers increased by around 25% in the period 2016-2021. Gas prices will continue to increase, primarily due to external

factors because our gas prices are linked to the international market.

Because of this, we also know that transitioning to an all-electric energy supply is going to help many households in the ACT to save money in the coming years, particularly when combined with rooftop solar PV and battery storage. There will be a smaller group of consumers who will not be able to achieve a cost saving due to the nature of their home, for example some apartments where there are difficulties installing rooftop solar. There are a range of government programs available to assist with the up front costs. A carefully considered plan for the gas transition is critical for managing the transition and making the change as efficient and low cost as possible.

The ACT's gas transition will be a key part of a new Integrated Energy Plan for the ACT, which will set out the pathway for us to maintain a secure, reliable, and increasingly sustainable entire energy system into the future.

# The ACT Government's journey to net zero emissions

<b>2010</b>	> Legislated emissions target	<b>2020</b>	> Reaffirm climate ambition in Parliamentary and Governing Agreement
<b>2011</b>	> Release sustainable energy policy		> ACT Achieves 100% renewable electricity
<b>2012</b>	> First reverse auction	<b>2021</b>	> Gas Transition Taskforce established
	> Release ACT Climate Change Strategy and Action Plan 2		> Undertake technical and economic modelling of electricity network
<b>2018</b>	> Updated legislated emissions targets	<b>2022</b>	> Government commits to an electrification pathway
<b>2019</b>	> Release ACT Climate Change Strategy		

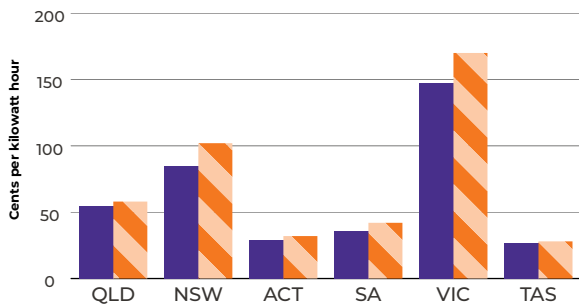
## Understanding how we produce and use energy in the ACT

According to the Australian Energy Regulator (AER), in Quarter 2 of 2021-22, electricity and gas customer numbers in the ACT were as listed below.

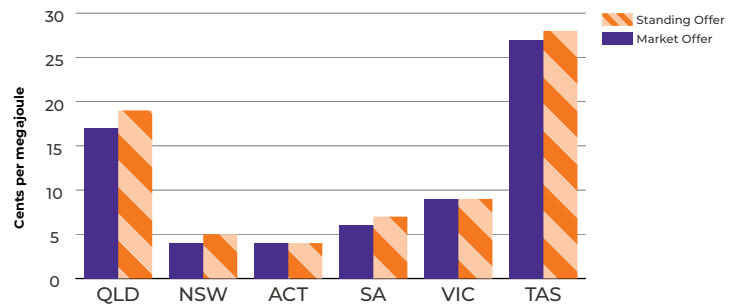
Total gas users in the ACT Q2, 21/22	
<b>Total ACT residential gas customers Q2, 21/22 (per the AER)</b>	<b>127,827</b>
<b>Total ACT small business gas customers Q2, 21/22</b>	<b>3,559</b>
<b>Total ACT large gas customers Q2, 21/22</b>	<b>164</b>

Electricity users in the ACT Q2, 21/22:	
<b>TOTAL</b>	<b>201,870</b>
<b>Residential</b>	<b>186,676</b>
<b>Small business</b>	<b>13,259</b>
<b>Large</b>	<b>1,935</b>

Despite our high energy use, in terms of the cost per unit of energy, the ACT's Evoenergy networks are really good compared to networks in other jurisdictions.

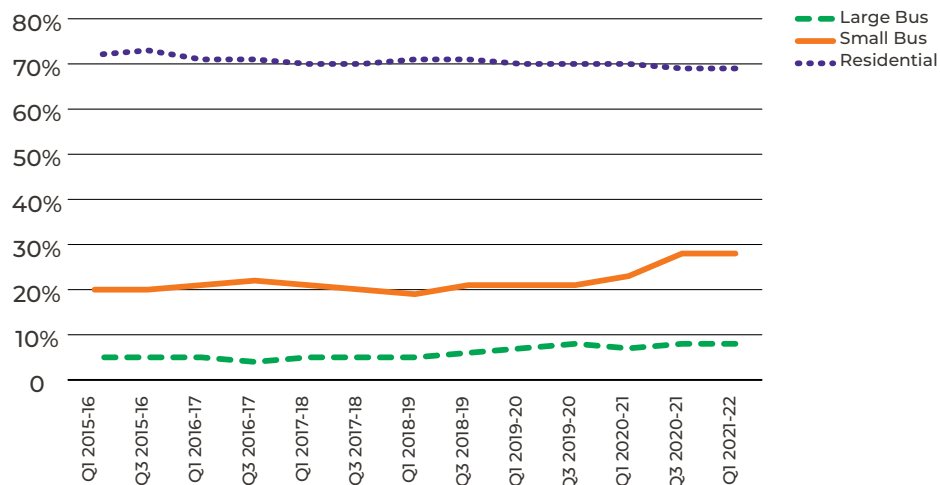


**Figure 3: Residential electricity median market and standing offer prices compared to other jurisdictions**



**Figure 4: Residential gas median market and standing offer prices compared to other jurisdictions**

Since 2015-16, we have seen a decreasing trend of households having a gas connection as well as an electricity connection, but interestingly, for small business and large customers, there has been a slight increase in recent years.



**Figure 5: Percentages of ACT electricity customers who are also gas customers**

Although our large customers use quite a bit of fossil fuel gas, they do not use anywhere near as much on average as large customers in NSW.

Our 100% electricity supply is largely provided through around 840 MW of contracts with eleven different wind and solar farms in the ACT, NSW, Victoria and South Australia, plus around 181.45 MW of rooftop solar, and the ACT's share of the Commonwealth's Large-scale Renewable Energy Target (LRET). We also have small-scale biogas extraction that is used to generate electricity. Our fossil fuel gas supply is provided from interstate.



## PART TWO

# The preferred pathway and how we got here

The ACT Government is moving to an electrification pathway to transition away from fossil fuel gas. Research to date shows that electrification provides a low-cost transition option, with mature and emerging technology already available for many consumers. The electrification pathway will be supported by continued growth and uptake of household and business solar PV systems and battery energy storage, as well as increased energy efficiency of buildings and appliances.

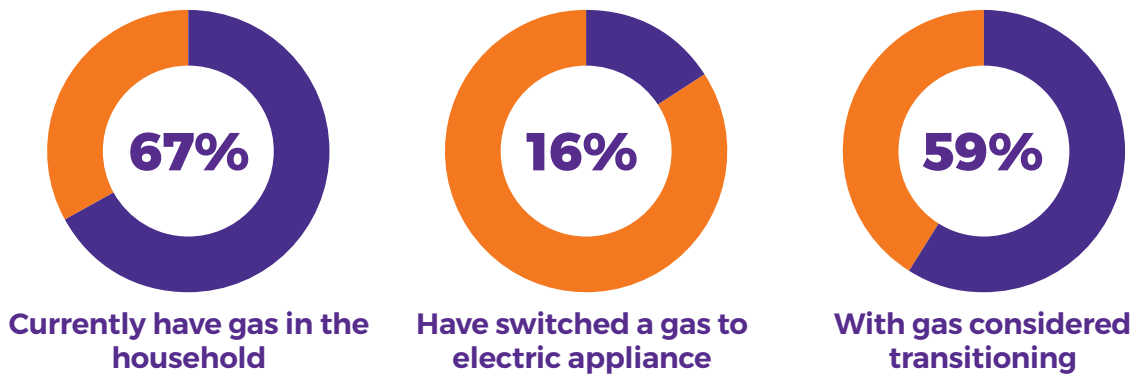
Electrification is and will be the most cost-effective option for many energy consumers, however the pathway will include investigating the use of renewable gases, like hydrogen and biomethane, for specific uses where electrification is not an appropriate option. This pathway has been informed by detailed modelling work, consumer insights and research to date.

## Consumer insights

We have been listening to our community on how they feel about using electricity and fossil fuel gas. In February 2022, we surveyed 1900 Canberrans through our YourSay Community panel about their perceptions of gas. There was broad awareness that electricity was a more environmentally friendly energy source than gas, where the electricity is generated through renewable sources.

- > 67% of respondents use mains gas in their house, predominantly for water heating, cooking and home heating.
- > In just the last 2 to 3 years, 16% of respondents had replaced a gas-powered appliance with an electric equivalent, reflecting a gradual transition and preference for electric appliances.
- > The main reasons were that it was the right thing to do for the environment, better energy efficiency, and that it will save them money in the long term.

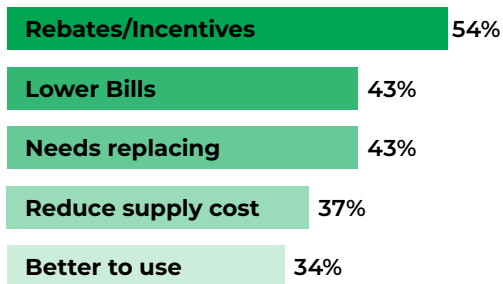
## Household Situation



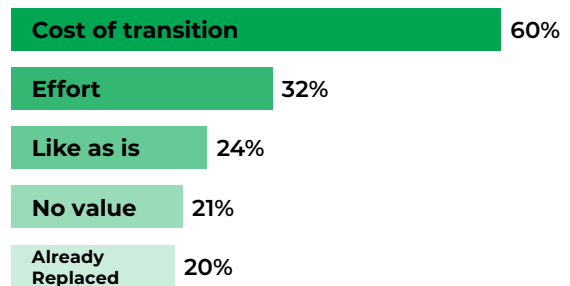
The survey also provided insights as to why 35% of households with gas have not considered switching from gas. Reasons ranged from:

- > Having little choice because they were renting or living in an apartment
- > Personal preferences for cooking with gas
- > Having no need to replace appliances in good working condition
- > Not seeing any benefit or incentive to transition

### Top Motivators to Transition



### Main Barriers to Transition



The findings of this survey help us to understand people’s preferences for using gas and electricity and understand the reasons behind people’s choices. As we develop the Integrated Energy Plan, these findings as well as additional engagement, will assist in the development of measures to support people in shifting to electric appliances.

Analysis of consumer segmentation research commissioned in recent years by Energy Consumers Australia has indicated that around 30% of ACT consumers face barriers to making changes to their energy supply and usage due to lack of opportunity or ability. We also know that for around 60% of our energy consumers, the biggest barrier is motivation. This means that while there is a significant group of more vulnerable consumers who will need support to make the transition away from fossil fuel gas, the majority of consumers across the Territory are able to make the transition, but need to understand why it would benefit them, and may also need advice on choosing the best time for their household or business to transition.

## Government gas transition

**Government operations account for around 7% of total fossil fuel gas emissions in the ACT. The [ACT Climate Change Strategy 2019-25](#) aims to demonstrate leadership in the gas transition in the Government's own operations. Government is pursuing a 33% reduction in its own emissions with a target of net zero by 2040.**

As part of the [Parliamentary and Governing Agreement](#), ACT Government is ensuring that all new ACT Government buildings and facilities are fossil-fuel-gas free, including new leases. In addition, all retrofits of Government facilities have the goal of net-zero emissions post retrofit. Under the Strategy, Government is also establishing pathways to net zero ACT Government schools and hospitals. The ACT now has three all electric schools: Margaret Hendry (Taylor), Evelyn Scott (Denman Prospect) and Throsby.

Government currently manages a Social Cost of Carbon (SCC) Fund at an interim price of \$20 per tonne of emissions from government operations. The SCC funds are invested in measures to meet Government emissions reductions targets. In 2021-22 SCC funding of \$1.34m was used to support the electrification of three Government facilities.

## Our technical and economic modelling

In 2021, the ACT Government engaged GHD Pty Ltd and ACIL Allen to model the impacts to the electricity network and broader ACT economy of different approaches to the gas transition. This was done in two stages. The first stage was to model what the ACT's energy future would look like based on the ACT Government's existing and committed policies and also expected market trends. This is what we could expect our energy needs to look like if we made no further changes to our policies and no

further specific efforts to transition away from fossil fuel gas.

The second stage was to model a number of scenarios to test the impacts of different transition approaches such as costs to consumers, the amount of emissions reduction that could be achieved and by when, what is currently technically possible, and the overall economic effects for the ACT.

## Retail price impacts of the gas transition

GHD modelling shows that retail gas prices are expected to increase by around 19 per cent over the period 2022-2029, adding approximately \$220 to the annual gas bill for the average household in 2029. The overwhelming drivers of gas price increases over this period will be the international price of gas (wholesale costs) and the cost of maintaining and moving gas through the ACT gas network (distribution cost). The electrification pathway has a minor impact on the gas distribution costs component of the gas price. Modelling by GHD demonstrates that the pathway is not expected to have a material impact on household energy prices over the period 2022-2029.

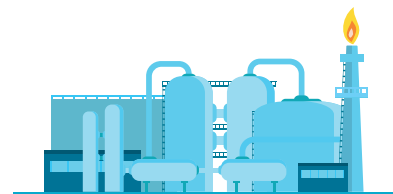
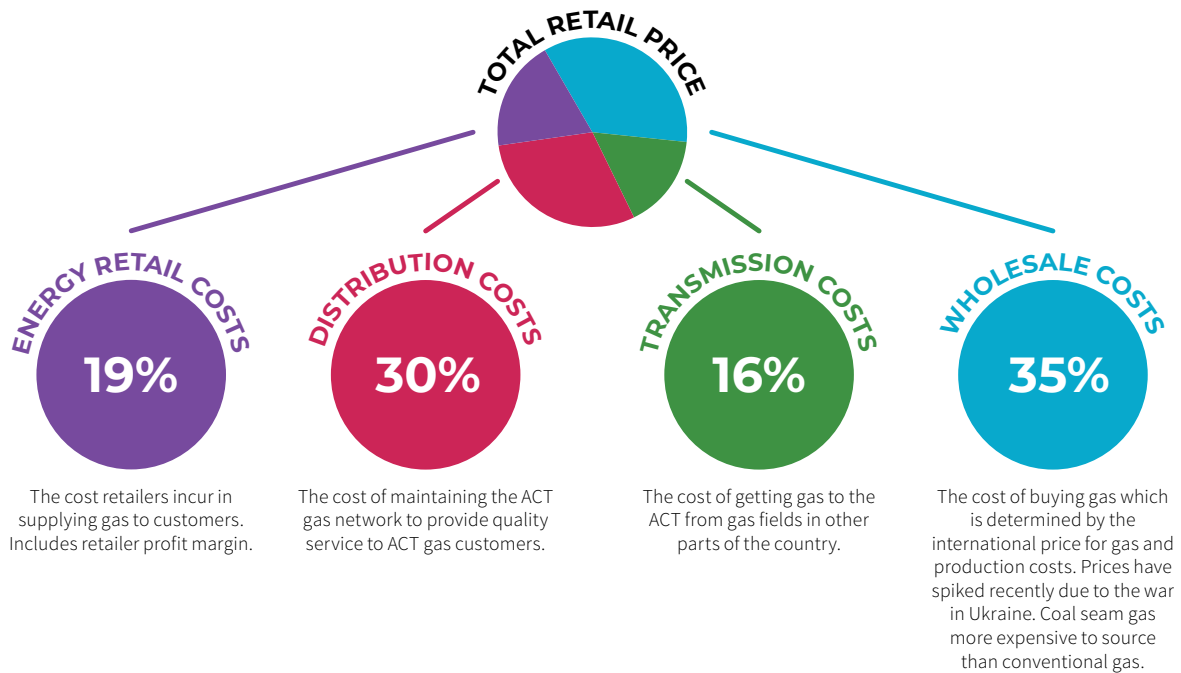
Further information on retail price impacts is provided in [this Gas transition factsheet](#).



## Average Use

Sam's household uses gas for heating, instant hot water and cooking. Sam uses around 35GJ of gas a year, which is in line with average ACT residential gas use. This year, Sam's gas bill is expected to be around \$1,165. If Sam still has the same appliances in 2029, and assuming their household use remains unchanged, Sam's gas bill is likely to be \$1,385 - an increase of \$220 for the year. (The cost is primarily driven by rises in the gas distribution and wholesale costs, and not related to the electrification pathway).

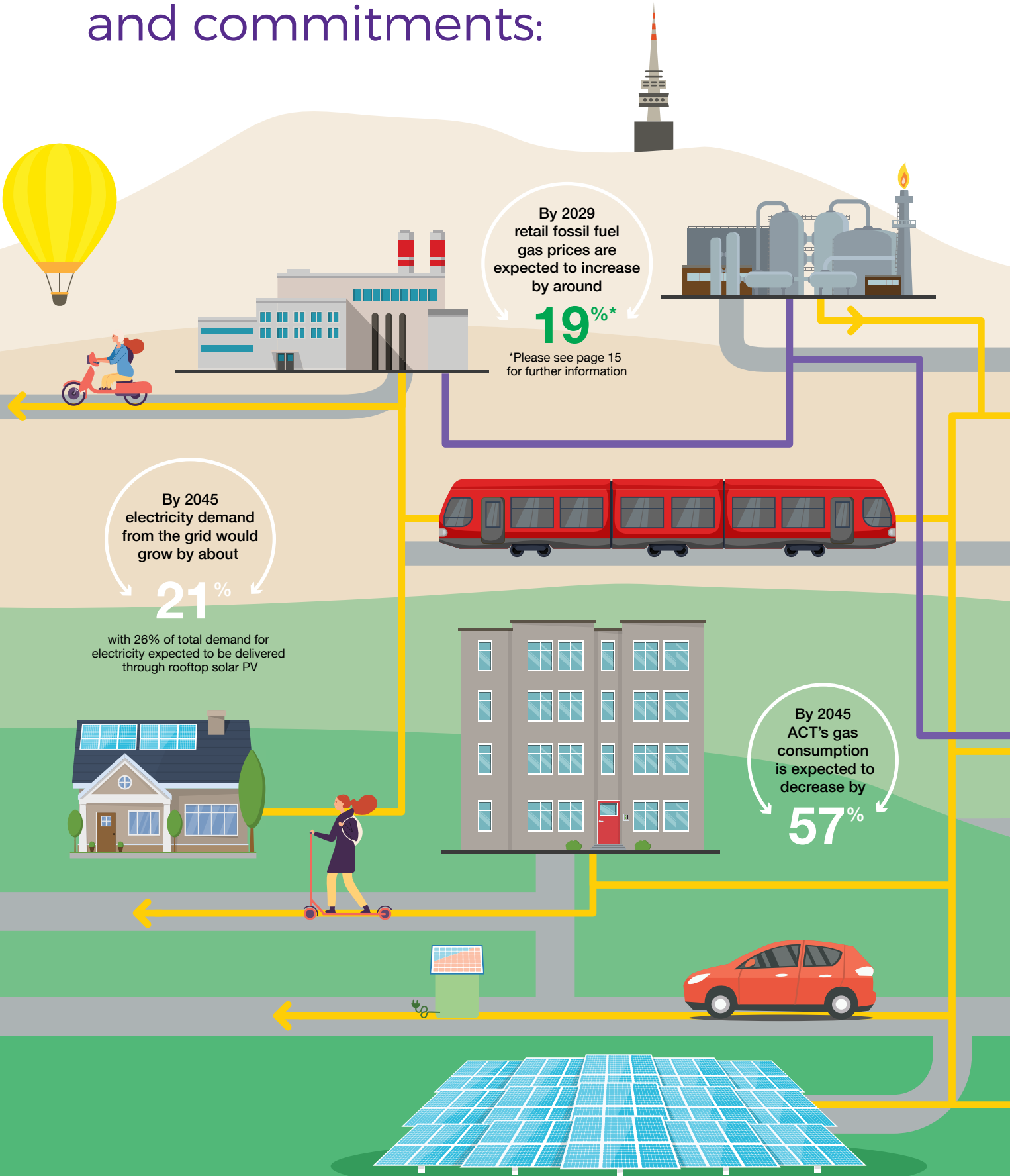
## What drives the price of gas?

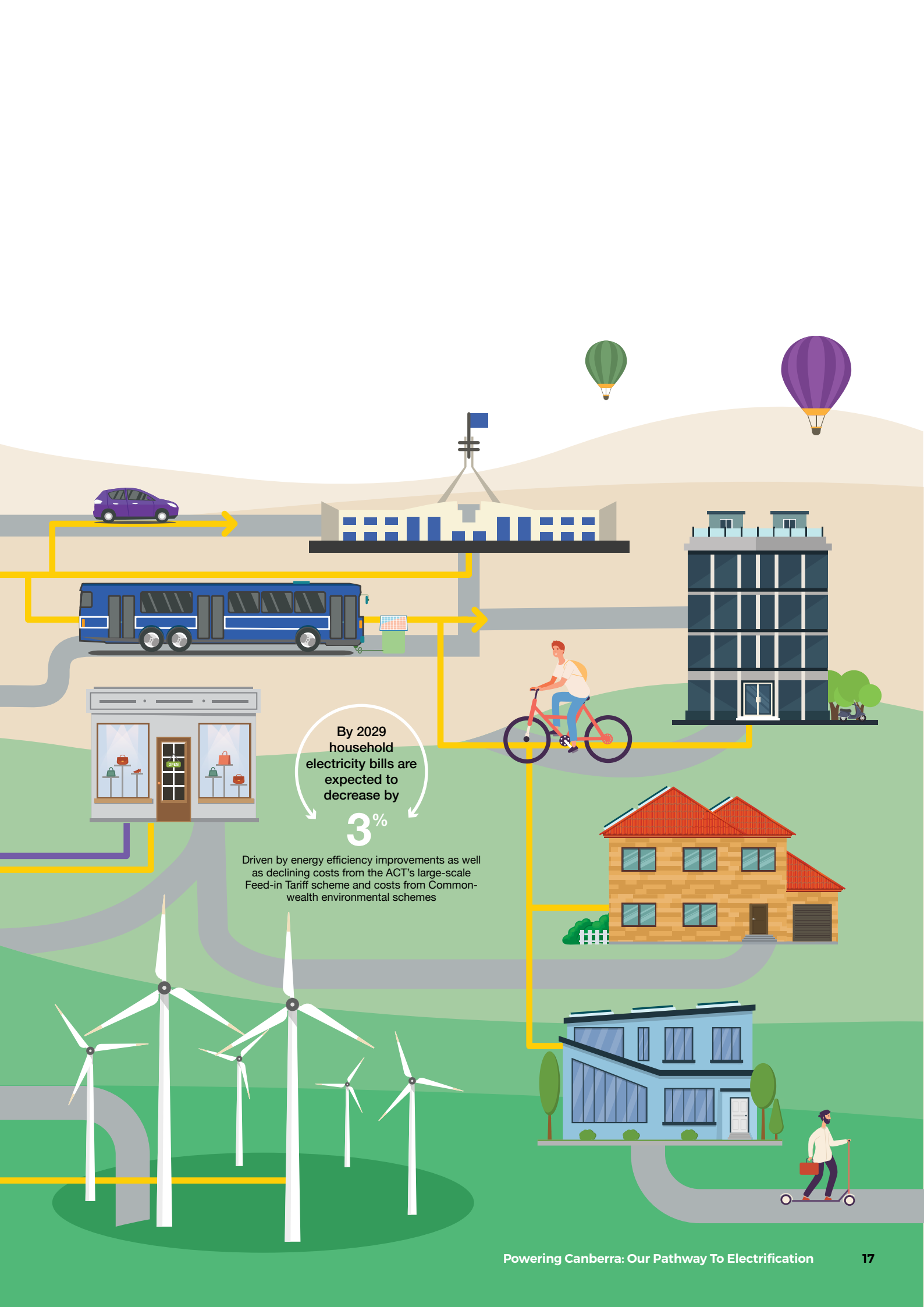


## Where do our current policies get us?

The modelling of what our energy future would look like when the Government has implemented all of the *Parliamentary and Governing Agreement* commitments for a fossil fuel gas transition provided some important insights about energy usage and costs.

# A snapshot of our energy future with current policies and commitments:





By 2029 household electricity bills are expected to decrease by

3%

Driven by energy efficiency improvements as well as declining costs from the ACT's large-scale Feed-in Tariff scheme and costs from Commonwealth environmental schemes

What these results tell us is that regardless of what we do next, a large portion of gas users in the ACT will be transitioning away from fossil fuel gas use over the coming few decades, and as people use less gas, this will drive up prices. When we pay for our gas supply, a part of our bill is actually paying to maintain the network that delivers the gas to our homes and

businesses. If there are fewer connections, then the maintenance cost needs to be shared across fewer customers, meaning this part of their bill will increase, which will encourage more people to disconnect from gas and further increase costs for those who want to stay connected to the gas network.

## What about other scenarios?

We looked at whether the ACT would be better off with a centralised energy model which is what we currently have, or a decentralised model, where there is greater uptake of Distributed Energy Resources (DER), such as household and business solar PV and battery energy storage.

### **Centralised model versus decentralised model**

**In the more decentralised model, consumers would have greater control over their energy supply while still being able to draw electricity from the grid when needed. This scenario sets out a quicker pathway to achieve zero emissions from gas use, however the costs to consumers and the Territory would outweigh the benefits.**

Overall, the modelling told us that a move towards the more decentralised energy system with integrated DER would offer better overall outcomes for the ACT than maintaining the current centralised energy model.

Strategic use of DER will play a vital role in maintaining grid stability, reducing peak energy demand, network upgrades and consumer bills. It will also give consumers more control over their energy, as they will be able to produce and use their own electricity, meaning they will need to use less from the grid and be able to save money on their retail energy bills.

## Impacts to the gas network

It is expected that gas will remain an important energy source until the mid-2030s, after which point rising costs will likely encourage more and more consumers to transition away from gas. From the mid-2030s, declining customer numbers and lower demand for gas may put pressure on the economic viability of the gas network.

ACT Government and Evoenergy (ACT's Gas Network operator) will work closely together to allow time for consumers to adjust to changes and ensure the ongoing security of energy supply. Evoenergy will also need to continue to

maintain the gas network in accordance with a variety of legislation, regulation and technical codes, and will provide annual updates to the ACT Government on the gas network, including gas abolition requests and non-consuming meter trends across the Territory.

With these arrangements in place, and based on current consumer trends, it is not currently anticipated that there will be any changes in the operations of the gas network in the next 10 years. There will be significant planning before any changes can occur, as well as plenty of notice and guidance provided.

# Renewable gas still has a role to play

The ACT Government considered whether we could use renewable gases such as hydrogen or biogas to replace the ACT's fossil fuel gas supply, rather than full electrification. However, it isn't realistic for the ACT's entire fossil fuel gas supply to be replaced by a renewable gas alternative.

Why not? Our analysis has found there would be significant barriers. While the gas network and the appliances of existing customers wouldn't need to change if we transitioned to biogas, the largest barrier at present to the feasibility of biogas and hydrogen are the high costs associated with producing renewable gases at volume.

## Hydrogen

A [2020 study](#) commissioned by the ACT Government found that although small amounts of hydrogen may be safely blended with fossil fuel gas in our existing network, switching to 100% hydrogen is not currently achievable. Producing hydrogen requires a lot of electricity, and it would be far more efficient to use the electricity itself. Also, it would be very expensive to convert gas-connected properties to hydrogen only due to needing to replace appliances. While a lot of work is being done nationally on hydrogen, this is primarily focused on large-scale industrial uses and export opportunities, so there is limited potential for hydrogen use in the ACT at present.

There are currently significant challenges that would need to be overcome to transport high quantities of hydrogen safely from interstate, or to produce this within the ACT or nearby for use in the ACT. This is because of the large investment required in electricity generation and electrolyzers to produce green hydrogen, or the investment in large chemical facilities and carbon capture and storage technology to produce blue hydrogen from fossil fuel gas through methane steam reformation.

## Biogas

Biogas is another renewable gas option that has been considered. Like hydrogen, biogas is still quite expensive to produce. It also requires a lot of feedstock to make, which is made up of biodegradable waste materials, and there would be an insufficient supply of this in the ACT. Most biogas is also expensive to produce and demand would likely far exceed supply availability, putting further pressure on gas prices for consumers. The issue of limited feedstock is Australia-wide, so transporting it from interstate is not a realistic option.

Although renewable gases will likely have future uses in the ACT for certain industrial, transport and niche applications, they are simply not suitable to fully replace our fossil fuel gas supply. We need to base our plan around electrifying everything we are able to, with scope for renewable gases to be used for specific purposes in future.



## 2020 Green Gas Trading report

The July 2020 report, '[Green Gas Trading – A tool for a zero emissions ACT](#)' commissioned from ITP Thermal by the ACT Government (refer to 'Further reading' below), noted that in 2018-19, there was demand for 7.1 petajoules (PJ) of fossil fuel gas in the ACT, representing 20% of our total energy demand. The ACT could produce 0.74 PJ of biogas from landfill gas, but if the garden waste currently composted was also converted into biogas, the biogas yearly potential would increase to 1.98 PJ.

In terms of green hydrogen, injection of up to 10% hydrogen into the existing distribution network was expected to require minimal alterations to the distribution system, and could be produced with the electricity from a 31 MW wind farm. However, to completely replace the ACT's fossil fuel gas supply with green hydrogen would require installation of a 1043 MW wind farm, which would be about seven times larger than the Capital Wind Farm near Lake George. A key recommendation from the report was that the ACT consider introducing a target of 10% renewable energy gas supply from 2025. The report's findings did not support that renewable gases could fully replace the fossil fuel gas supply in the ACT.

## PART THREE

# What will this mean for households and businesses?

Energy is an essential service and we know that consumers just want it to work so they can get on with their day without having to worry about it – so we will support consumers to make the gas transition as straightforward and easy as possible. It is also important to remember that we have two decades to make these changes. There is no need to rush.

Over the next 20 years the price of fossil fuel gas will incrementally increase over time, such that it will be in the interests of ACT gas consumers to gradually transition their homes and businesses off fossil fuel gas supply at a time that is right for them.

We are not asking households or businesses to transition before you're ready. We're asking you to consider making your next one electric. So, when your gas appliance needs replacement, this is the right time to switch to an electric appliance. While there is an upfront cost, you will save considerable money in the longer term and also contribute to reducing emissions.

Over time, your transition plan may span the replacement of:

- > any gas heating appliances with efficient electric appliances
- > any gas water heating appliances with efficient electric appliances
- > any gas cooking appliances with efficient electric appliances, and
- > any remaining gas-powered appliances with efficient electric appliances where possible

Once all your gas appliances have been replaced, you will also need to abolish your gas connection

The timing and choice of these steps is up you, but it is worth noting that gas prices are expected to continue to increase and your choice can save you money in the long run.

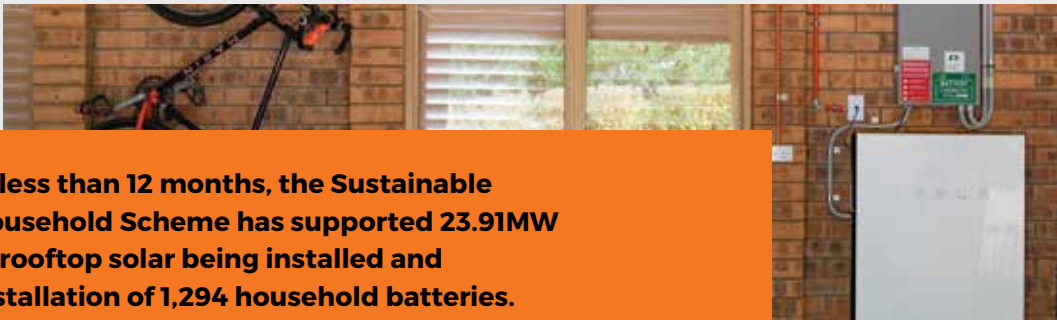
Some consumers may have replaced all their appliances, but not yet abolished their gas connection, and some consumers may have already transitioned from gas altogether. Other consumers, particularly in business settings, may have appliances that they will struggle to transition off gas for different reasons, although electric alternatives may become available in years to come.

The ACT Government published an ACT-specific study in 2020 '[Household energy choice in the ACT](#)' that looked at the economics of household fuel choices, finding that nearly all household types would be better off financially with an all-electric setup. The modelling has been updated with 2022 data and continues to show that transitioning away from fossil fuel gas would be a good choice for most households, particularly if they have solar installed.

## Accessing Government supports for households

### Sustainable Household Scheme:

The ACT Government's [Sustainable Household Scheme](#) aims to help households reduce their energy use and costs. The Scheme provides zero-interest loans of between \$2,000 and \$15,000 to eligible households, to help with the upfront costs of investing in energy efficient products and appliances for their homes. Products include rooftop solar, household battery storage, hot water heat pumps, electric cooktops, electric vehicle chargers and electric vehicles.



**In less than 12 months, the Sustainable Household Scheme has supported 23.91MW of rooftop solar being installed and installation of 1,294 household batteries.**

Around 90% of houses and units in the ACT are eligible for the Scheme, and landlords can also apply for the loans to make sustainable upgrades to their rental homes.

### Home Energy Support Program:

Australian Pensioner Concession and Veterans' Affairs Gold Card holders may be able to get rebates of up to \$5,000 for sustainable home upgrades through the [Home Energy Support Program](#).

### Next Gen Energy Storage Program:

The [Next Gen program](#) supports the development of the energy storage industry in the ACT, along with research and training. Rebates are available for eligible homes and businesses within the ACT to purchase a battery.

- For households, the rebate is \$3,500 (excluding GST) or 50% of the battery price (excluding GST) – whichever is lowest.
- For businesses the rebate is \$35,000 (excluding GST) or 33% of the battery price (excluding GST) – whichever is lowest.

## Accessing Government supports for business

The ACT Government has a number of programs available to support businesses to become more sustainable.

### **Business Energy and Water Program:**

[The Business Energy and Water Program](#) offers a 50% rebate, capped at \$5,000 for eligible businesses to upgrade to more sustainable water and energy systems, and access to energy assessor workplace visit to create a tailored plan.



### **ACT Businesses are saving money**

- > **Cook IGA Friendly Grocer, a small supermarket located in the northern suburbs of Canberra, was able to save \$1,000 a month in electricity**
- > **Xchange on London, a restaurant/bar on London Circuit in Canberra's CBD, was able to cut \$3,300 off its annual electricity bill.**

### **Solar for Business Program:**

[The Solar for Business Program](#) helps businesses adopt solar energy through free tailored advice on the best rooftop solar system for the business, as well as advice on any Federal Government rebates that may be available.

# Why is it important to abolish a gas connection?

When you've replaced all your gas appliances with efficient electric options and no longer use gas, you can either abolish your gas connection or just close your account. Closing a gas account involves a temporary disconnection (also known as "wadding") and is generally intended to stop gas consumption for only a short amount of time. Abolishing your gas meter physically removes the asset from your property. The service line in the street is then disconnected.

Many consumers are discouraged from permanently abolishing their gas connection due to the cost for this process. The current fee is around \$770-\$800 (including energy retailer fees and Evoenergy fees). The reason for this cost is the amount of work that needs to be done to permanently abolish the connection. By comparison, a temporary disconnection

costs around \$150, plus an administration fee, for a standard meter.

## **Safety**

Failing to abolish the gas meter and disconnect the service line means that you have pressurised gas assets remaining on your property that need to be managed appropriately. Abolishing your gas meter when it is no longer in use removes the risk of the gas meter failing and leaking gas. It also removes the risk of a gas leak from any onsite excavation.

## **Cost to others**

If you just close your account, your connection still needs to be maintained, and the cost of this is still passed on to all other gas consumers through the part of their bill that covers network maintenance.

## PART FOUR

# Key opportunities and challenges

Over the course of this long term transition, we will face different opportunities and challenges. In this immediate phase we are focussing on five key areas:



## Supporting households with lower incomes and renters

Particular energy consumer groups, such as low-income and vulnerable consumers and renters, face greater challenges in managing their energy costs and being able to switch gas appliances to electric. A particular issue for renters is that they are limited in their ability to replace gas appliances without the cooperation of their rental provider, but they pay for the cost of gas, which will become increasingly expensive.

The ACT Government recognises the need for a 'just transition' as part of its climate change response. A key element of this recognition is that poorly insulated and energy inefficient homes contribute to higher energy bills and

poor thermal comfort. The [Home Energy Support Program](#) offers financial and other support for Canberra's most vulnerable households to replace inefficient appliances and improve thermal efficiency. Participating households will benefit from reduced energy costs and improved wellbeing that comes from greater thermal comfort and gas transition.

Funding from the 2021-22 Budget provided rebates to support energy efficient home improvements for low income homeowners and existing community housing providers registered under the Affordable Community Housing Land Tax Exemption Scheme.

In 2022-23 funding for the program will continue with additional support for the introduction of the minimum energy standards for rental homes, and to expand the eligible products for low-income homeowner rebates.

According to the ACT Council of Social Services (ACTCOSS) over the last five years, Canberrans have seen the prices of several essential goods and services increase significantly and at rates above the overall CPI for Canberra and nationally. These include electricity (27.7% increase) and gas (26.2% increase). The report noted that over the past 20 years, electricity prices in Canberra have increased by almost 60%, while gas prices have doubled.<sup>1</sup>

Energy costs are comparatively higher for low-income households, as they have less income to cover their living costs. The AER's Annual Retail Markets Report data demonstrated that in 2020, a median market offer gas bill cost 1.33% of disposable household income for an average income household, but 3.05% for a low-income

household. For electricity, the percentages were 1.53% and 3.60% respectively.

A September 2020 YourSay Community Panel survey found that more than four in 10 renters in Canberra cannot keep their home comfortably warm, with three in 10 renters saying this was due to the cost of heating. Better Renting has also reported that cold housing contributes to at least 42 deaths each year in the ACT, with these deaths generally caused by cardiovascular or respiratory disease and that three factors can make someone more vulnerable to the health effects of cold; they are aged 65 or older, they have an increased need to heat their home (such as the home is not very energy efficient), or they have a reduced capability to heat their home (such as they have a lower income combined with higher utility costs).<sup>2</sup> They also found that 43% of ACT rental properties had the lowest possible energy rating of 0, while in comparison only 4% of properties for sale had this low rating and over half of properties for sale had an Energy Efficiency Rating (EER) of 5 or greater.<sup>3</sup>

## The Energy Efficiency Improvement Scheme's Priority Household Target

The ACT Government's [Energy Efficiency Improvement Scheme \(EEIS\)](#) aims to encourage the efficient use of energy and reduce household and business energy use and costs. It requires large electricity retailers, who have more than a certain number of customers and sell above a minimum amount of electricity, to deliver activities that improve energy efficiency to households and small to medium-sized businesses. Eligible activities include insulation, lighting, efficient space heating and cooling systems and water heaters.

The EEIS also aims to increase opportunities for low-income households to reduce energy use and costs through a Priority Household Target, which means that 40% EEIS savings must be delivered in priority households. Priority households are defined as households in which at least one resident holds an eligible concession, are experiencing financial hardship or are residents of priority dwellings. These households are most affected by energy price rises, but least able to invest in efficient items and reduce their energy demand.

1 (ACTCOSS): August 2021 Cost of Living Report

2 Better Renting: August 2019 'Unsafe as Houses: Cold-housing deaths in the ACT' report

3 Better Renting: April 2018 'The efficiency of rental properties in the ACT' report



## Transitioning complex buildings

While it will be fairly easy to transition most houses away from gas use, there will be buildings where this will be more of a challenge, such as some apartment buildings that use gas for heating, hot water and/or cooking. In these

buildings, the structure of the building itself and its gas and electricity systems will be key to how easy or difficult it may be to transition, but factors such as body corporate arrangements may also present challenges.

## Finding alternatives for specific gas requirements

In some instances, electric alternatives will not be a viable or cost effective option. It may be that there is no suitable electric replacement for a particular piece of equipment that a business needs to use. We know that where electric alternatives are available, challenges for businesses include the cost of new equipment, which in some cases may be higher for electric

options, as well as the space required and whether there is enough electricity supply available. In many restaurants, there is also a preference for cooking with gas. There are new electric induction technologies being introduced all the time, but are not well promoted or known.

## Opportunities for the workforce and the economy

The ACT Government also understands that the gas transition will be concerning for those working in the gas industry, such as gas fitters. Skills and job transfer will be an important part of the transition, as will identifying opportunities for new business opportunities,

and the government will investigate options to support this throughout the transition. It is also important to remember that this will be a long-term transition, and homes and businesses will transition away from fossil fuel gas use over an extended period of time.

# The future of the gas network

The ACT's gas network is a valuable community asset and has been assessed to be in good condition.

The distribution system network is owned by Evoenergy and operated by Jemena and consists of approximately 4,000km of pipeline and delivered approximately 8.2 PJ (2,274 GWh) in 2018 (43% of the total energy supplied). Assuming no further investment in the network, the value of the gas distribution system is likely to be approximately \$88 million in 2045 (in current dollar terms).

Under current policy settings, the gas network is expected to remain an important energy source for the next 10-15 years and will

remain economically viable until the mid-2030s. After this time the decline in customers and gas demand may put pressure on the economic viability of the network remaining in its current form.

There may be a range of alternative uses for elements of the gas distribution network that could be considered. These may represent innovative solutions that can guide other cities seeking to move away from fossil fuels. The ACT will work with industry and other stakeholders to consider alternative uses for the gas distribution network. These could include limited applications of green gases for niche applications, likely for specific industrial applications.



## PART FIVE

# What's next?

Now that the ACT Government have made a decision on the direction of the pathway we need to develop the best approach to implement it. This will be a long term transition that involves us all and we will engage the community on what they think are going to be the big issues and hear ideas on how we can best deliver this pathway over the coming years.

While our existing policies and programs provide a good foundation, further work needs to be done to examine the challenges and develop the best solutions. The next significant change will be the introduction of a regulation to prohibit new gas connections for certain types of new developments, including greenfield residential and urban infill developments.

ACT Government has established a Gas Transition Taskforce, as per the Government's commitment in the Parliamentary and Governing Agreement, to lead this work. The Gas Transition Taskforce responsibilities include:

- > Lead the development of the Integrated Energy Plan
- > Deliver existing government commitments, such as preventing new gas connections in greenfield residential and urban infill developments
- > Identify and engage with groups and business sectors who will need additional support to transition and how to best support them
- > Develop and deliver education and engagement programs to encourage consumers to transition to efficient electric appliances at a time that is right for them
- > Assess the potential for a renewable gas network, including how it may be used for particular situations where solutions other than electrification may be needed
- > Collaborate with stakeholder groups across the ACT, including property developers, gas fitters and Evoenergy, ACT's electricity and gas network operator

The transition pathway, and the broader Integrated Energy Plan that it will form part of, will be staged to manage the likelihood of changing circumstances over the coming decades. We expect that there will be changes and improvements in technology, how energy is supplied to and used by consumers, and appliances that will become available to businesses to replace currently gas-reliant options. As things change, we will review our plan and adapt to make sure we get the greatest possible benefit from those new opportunities.

# How can I engage and provide feedback?

**Our community is part of the solution. Your suggestions and feedback on how we can achieve this transition and the challenges we need to overcome are crucial to success.**

The transition away from gas will affect everyone across the ACT: our households, businesses, industry, trades, developers, and community groups. We want to approach this transition responsibly and sustainably over the next 20 years. There will be community engagement activity over the coming years as we hear from you on what you think are going to be the big issues and how we can best deliver this pathway.

To provide your feedback, ideas, or concerns, please contact us:



Explore more about our pathway to electrification and learn about how you can begin your transition journey. Visit us at [climatechoices.act.gov.au/poweringcanberra](https://climatechoices.act.gov.au/poweringcanberra)



Email us at [gastransition@act.gov.au](mailto:gastransition@act.gov.au)

# Further reading

**Green Gas Trading: A tool for a zero emissions ACT, ITP Thermal, July 2020**

[https://www.environment.act.gov.au/\\_data/assets/pdf\\_file/0005/1784318/Green-Gas-Trading-A-tool-for-zero-emissions-ACT.pdf](https://www.environment.act.gov.au/_data/assets/pdf_file/0005/1784318/Green-Gas-Trading-A-tool-for-zero-emissions-ACT.pdf)

**Household Energy Choice in the ACT, ACIL Allen, November 2020**

[https://www.environment.act.gov.au/\\_data/assets/pdf\\_file/0011/1784315/Household-energy-choices-in-the-ACT-Modelling-and-analysis.pdf](https://www.environment.act.gov.au/_data/assets/pdf_file/0011/1784315/Household-energy-choices-in-the-ACT-Modelling-and-analysis.pdf)

**Electricity and Gas Networks in the ACT, AECOM, October 2020**

[https://www.environment.act.gov.au/\\_data/assets/pdf\\_file/0010/1784314/Electricity-and-gas-networks-in-the-ACT.pdf](https://www.environment.act.gov.au/_data/assets/pdf_file/0010/1784314/Electricity-and-gas-networks-in-the-ACT.pdf)

**Flame Out: The Future of Natural Gas, Grattan Institute, November 2020**

<https://grattan.edu.au/report/flame-out-the-future-of-natural-gas/>

**Regulating Gas Pipelines Under Uncertainty, Australian Energy Regulator, November 2021**

<https://www.aer.gov.au/networks-pipelines/performance-reporting/regulating-gas-pipelines-under-uncertainty-information-paper>

# Notes

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