



Stepping Up: A smoother pathway to decarbonising homes

August 2023



Foreword



The future of household energy use is exciting and challenging. To meet Australia's emissions reduction targets, all households will need to electrify.

Combined with technology developments and digitalisation, electrification has the potential to provide consumers with better control and new opportunities for how they interact with and use energy.

However, how we get from where we are now to an all-electric future is not clear. Assuming neither biogas nor hydrogen will be a suitable alternative to decarbonise most Australian homes, today's eleven million households – and all new households – need to electrify their homes and change their current energy use practices. This means that in the next two to three decades:

- Around [5 million households](#) currently connected to the gas network need to switch their hot water, space heating and cooking appliances from gas to electric.
- [15 million passenger vehicles](#) need to be swapped for electric vehicles, with the necessary charging infrastructure in place to support them.
- Millions of homes will need to be renovated to improve their energy performance to manage high energy bills and be climate resilient.

There are two conditions that must be met to gain and maintain the social licence required to achieve this extraordinary scale of change.

First, households need to have agency. They need access to the right information at the right time to empower them to make decisions about how to electrify their homes to suit their unique situation. They also need to understand why they're being asked to make changes to the way they heat their homes, cook, and fuel their car to motivate them to do so and be willing participants on the journey.

Second, the move to electrifying households must be equitable. Households that face barriers to electrifying

their homes need support. This includes financial support to assist households with the upfront cost of electrification, but also support for renters, apartment dwellers, and those whose personal circumstances make electrifying their homes more difficult. Tailored and targeted support is required to smooth every household's decarbonisation journey. The last households to electrify should be the ones that choose to wait, not those who couldn't afford to.

This report sets out the case for a new national partnership across all levels of government. The partnership would be tasked with developing a national plan for decarbonising households to support consumer agency, provide financial support and address structural issues including managing the decline in household use of gas.

A new research program, soon to be commenced by Energy Consumers Australia, will provide a foundation on which the new national partnership can build its own program for supporting consumer agency and building social licence.

We are confident that electrification will lead to better outcomes for all households. But to reach those outcomes, consumers need a smooth, well-planned journey. They also need to know that it's not just them shouldering the burden – and cost – of decarbonisation: everyone will need to pitch in to reach net zero. To achieve this, we all need to step up.

I would like to thank CSIRO and Dynamic Analysis for the conducting the detailed modelling that informed this report (you can see this in the [Technical Report](#) that accompanies this report). I would also like to thank the members of the Consumer Transition Reference Group who provided invaluable advice and guidance (see p.11 for more detail on the members and process).

Jacqueline Crawshaw
Interim CEO Energy Consumers Australia

Overview



By 2050, almost all households will have switched their petrol or diesel vehicles for electric, be heating their homes and hot water and be cooking with electricity, and almost two-thirds of detached homes will have rooftop solar and potentially a battery.

These are the assumptions that sit behind the Australian Energy Market Operator's 2022 "Step Change" scenario, which has emerged as the most likely path to decarbonising the electricity sector. And it is these assumptions that the 2022 Integrated System Plan (ISP) is based on – a plan that identifies the transmission investment required over the next 20 years to transition from an energy mix dominated by fossil fuels to renewable energy.

Limited analysis has been done on the impact of the Step Change scenario on household bills, and there is no corresponding plan for realising the assumptions about household behaviour change, including both purchasing behaviour and day to day behaviour. This report, and the accompanying [Technical Report](#) by CSIRO and Dynamic Analysis, starts to fill these critical gaps in managing the transition.

Our modelling has found that if the Step Change scenario is realised, households that benefit the most will be those that electrify their heating, cooking and transport, have energy efficient homes and install solar and a battery. Those that remain on fossil fuels will face escalating bills. By 2050 the average difference in total energy costs, including transport, between a fossil-fuelled home and an all-electric home (without solar and a battery) will be \$2,850 per year.

If we don't plan for change, those who can afford to will continue to electrify, albeit at high cost. Those who can't afford to, or face other barriers to electrification, will be left behind.

To achieve a step change in our energy system that is orderly and equitable for all households, governments need to step up.

In this report, Energy Consumers Australia recommends a new national partnership across all levels of government to plan the consumer energy transition. The national partnership would be tasked with developing a clear and comprehensive national plan that sets out how all households will decarbonise.

The plan will require a combination of top-down, structural policies that smooth the shift from fossil fuels to electricity, and bottom-up actions to support households when they're making the change. Our modelling (provided in the accompanying [Technical Report](#) by CSIRO and Dynamic Analysis) suggests that the most "bang for buck" will be achieved through:

- Encouraging and enabling a switch to electric vehicles. This provides savings for individual households as well as benefitting all electricity consumers by improving network utilisation and so reducing the delivered price of electricity.
- Reducing barriers to renters and apartment dwellers electrifying their homes.
- Carefully managing the decline of household gas use to ensure those who can least afford it aren't left behind.

Support for households will require a combination of information to enable consumer choice and agency in deciding the electrification path that is right for them, and funding or financing options to help meet the upfront costs.

How consumers are helped to navigate the newfound possibilities, and overcome the challenges they face, will determine the success of this transition, and Australia's energy future.

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The challenges ahead for decarbonising households



Consumers are the heroes on the road to net zero

To meet the Federal Government’s climate commitments, all of Australia’s households will need to decarbonise their energy use by 2050. That’s 11 million homes that will need to change the way they use energy by electrifying gas appliances, switching to electric vehicles, upgrading the thermal efficiency of their homes, or all three. This once in a lifetime change is necessary to reduce the emissions that Australian households are currently responsible for through their use of gas and petrol (see Figure 1).

The role of consumers in the transition is implicitly recognised by the Australian Energy Market Operator (AEMO) in its 2022 [Integrated System Plan](#) (ISP). In its most likely 2022 “Step Change” scenario, AEMO assumes that 65% of detached homes in the National Electricity Market (NEM) will have rooftop PV installed by 2050, with most systems expected to be complemented by battery storage. Almost all cars are expected to be EVs, and most domestic appliances that currently run on gas – particularly heating – are expected to be electrified.

As such, households are expected to do a lot of the heavy lifting in the transition to a low carbon economy. Households will incur upfront costs and disruption to install new appliances and potentially rewire their homes to enable electrification. Many will also need to adapt to new ways in how they cook, heat their homes and water and “fill up” their car. Yet the impact on households has not been front of mind in policy decisions about the energy transition.

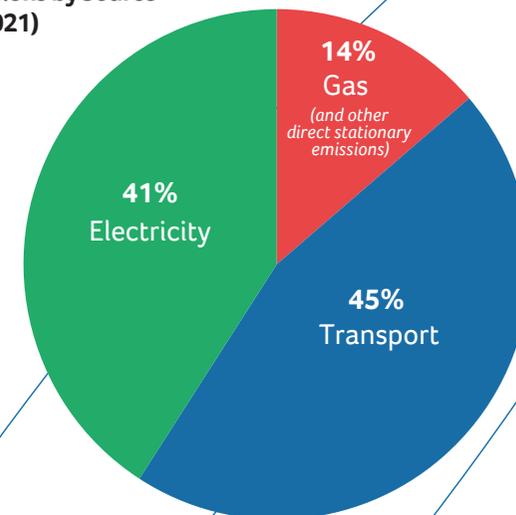
The ISP contains an “optimal development path” that identifies which large-scale transmission projects are cost-effective to build in the next ten years. However, there is no equivalent plan for ensuring that the assumptions in the ISP about widespread changes in consumer purchasing and day to day behaviour come true. There will be no transition if government and industry don’t partner with households to bring them along on the journey. As we have previously explained, [there will be no net zero without consumers as the heroes](#).

However, we don’t currently have the right policies in place to incentivise and support households to begin the decarbonisation journey, nor has the role of households in the transition been clearly communicated to them.

This section discusses three challenges for decarbonising households:

- households aren’t aware of their role in achieving carbon emission reduction targets through decarbonising their homes and lack the support and incentives to do so
- each household faces a different decarbonisation journey, and some households face more costs and other barriers than others
- without some intervention, some households risk being left behind and the energy divide between the “haves” and the “have nots” will deepen.

Figure 1: Household Greenhouse Gas Emissions by Source (FY2021)



Most households aren't aware of how the transition will impact them

To date, industry and policy makers have primarily focused on ensuring that the supply side of the energy market is ready for the transition. Government has provided more than [\\$20 billion of low-cost finance under the Rewiring the Nation Plan](#), and most states have designed Renewable Energy Zones and other policies to attract solar and wind generation.



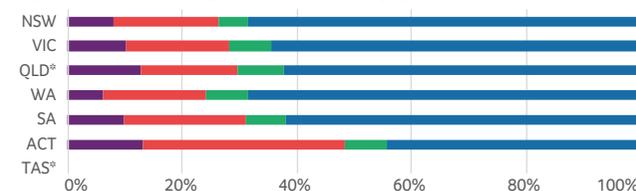
On the other hand, consumers have received comparatively little attention and very little information or funding from industry and policy makers to support their transition away from fossil fuels. Consequently, most consumers have very little understanding of their role in the transition, or how it will impact them. They also have few incentives to begin the process of decarbonising their homes.

Most consumers aren't aware that they need to decarbonise, including by electrifying their home. [Sixty-five percent of household consumers haven't given any thought to converting their home to run only on electricity](#). Only 9% have given serious thought to cancelling their gas supply. Households in the ACT are a notable exception, as discussed in the case study below (see Figure 2).

Similarly, [only 1 in 5 households believe that the impact of the transition on consumers has been clearly communicated to them](#). Consumers who identify as being under financial pressure – one of the groups most at risk of being left behind in the transition – are least likely to consider the impacts have been clearly communicated.

For the transition to be successful, consumers need to know both *what* is being asked of them, and *why*. They also need to be empowered to make decisions about electrifying their homes in a way that best suits their needs. This requires providing information tailored to their circumstances, at the right time, and from a trusted source.

Figure 2: Removing Mains Gas Supply



Q. Some Australian households have recently been cancelling their gas supply and converting their home to running on electricity only. Which of the following best describes you?

- Seriously considering converting to electricity only
- Have thought about converting to electricity only, but not seriously
- Have thought about converting to electricity only, but decided not to
- Haven't given it any thought

Base: All households with mains gas, NSW (n=237), VIC (n=393), *QLD (n=48), WA (n=244), SA (n=197), *TAS (n=26), ACT (n=141). *Caution: small sample size. No results shown for some categories due to extremely small sample size

CASE STUDY

How supportive policies are driving awareness, electrification, and positive sentiment in the ACT

In 2021, the ACT government introduced its [Sustainable Household Scheme](#). The scheme provides interest-free loans of up to \$15,000 to help households purchase energy-efficient products such as rooftop solar, electric stovetops and heating, hot water heat pumps and battery storage systems. Combined with legislation requiring new residential developments to be all-electric, the ACT is the jurisdiction furthest advanced in promoting and achieving electrification.

The ACT has a clear policy aimed at helping households to decarbonise their homes through electrifying appliances and access to consumer energy resources. We see the impacts of this flow through in the awareness Territorians have of their own role within the energy transition.

Nationally, only 35% of households had given any kind of thought to the idea of converting their homes to fully electric. However, this grows to 55% for households in the ACT. Further, ACT households are the most likely to have seriously considered the idea.

We also see that far more Territorians are considering purchasing the types of products the government's scheme aims to increase access to.

Compared to the rest of the country, they are most likely to say they are either intending to buy rooftop solar, solar hot water or electric vehicles in the next 12 months, or that they would consider it in the future. And when asked why, Territorians are the most likely out of any jurisdiction to cite government subsidies or grants as the reason behind their intention.

Some households will face more challenges than others in their decarbonisation journey

All households will face significant up-front costs in decarbonising their homes, and some will face greater barriers and costs than others. This means that support needs to be individually tailored and suitable for different households, including non-financial support.



Households living in rental properties and multi-unit dwellings face some of the biggest challenges to going all-electric.

Renters rely on their landlord to invest in the necessary changes to enable electrification. Yet landlords have limited incentives to do so as they typically will incur the costs without necessarily receiving the benefits. Our Energy Efficiency Housing research suggests that even if landlords do upgrade the energy performance of a house, [they expect to keep most of the energy savings by charging more for rent](#). In the midst of a cost of living and housing crisis, both landlords and renters alike will be hesitant to incur additional costs associated with electrification – either directly or through higher rent.

The quarter of Australian households living in multi-unit dwellings also face multiple issues in decarbonising. Many of these buildings have shared energy services, like shared hot water provided by a central boiler. They also have limited roof space for solar panels. Large changes, such as shutting off gas supply, can require agreement from all unit owners. Detached houses can also encounter barriers such as limited space and being heritage listed.

Most countries that are further along the transportation electrification journey highlight ongoing struggles helping apartment buildings add and share EV chargers. [Cost, electric power limitations, assigning parking spaces and wiring a charger to an apartment's electricity meter are among the challenges identified](#).

Barriers can also derive from people's personal circumstances, such as where they live, age, income, level of literacy, fluency in English, access to internet and digital capabilities.

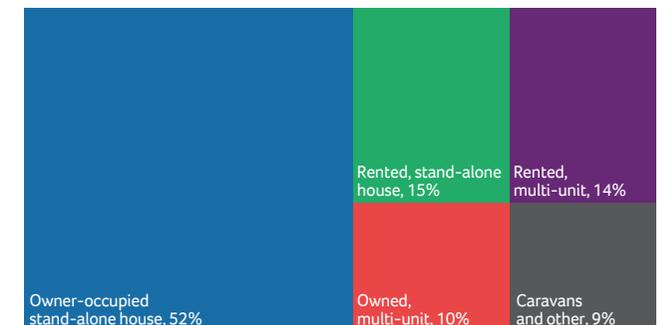
To successfully decarbonise all households, these differences will need to be identified and addressed to provide all households with equal opportunity to access the right support for them.

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When a renter experiences a cold home, they are reliant upon a disinterested third party to make the sort of structural changes necessary to bring a home up to standard. Generally, renters are reluctant to make such requests and, when they do, results are discouraging.

Better Renting, Cold and costly, Renter Researchers' Experiences of Winter 22, August 2022

Figure 3: Dwelling Structure by Tenure and Landlord Type, 2021



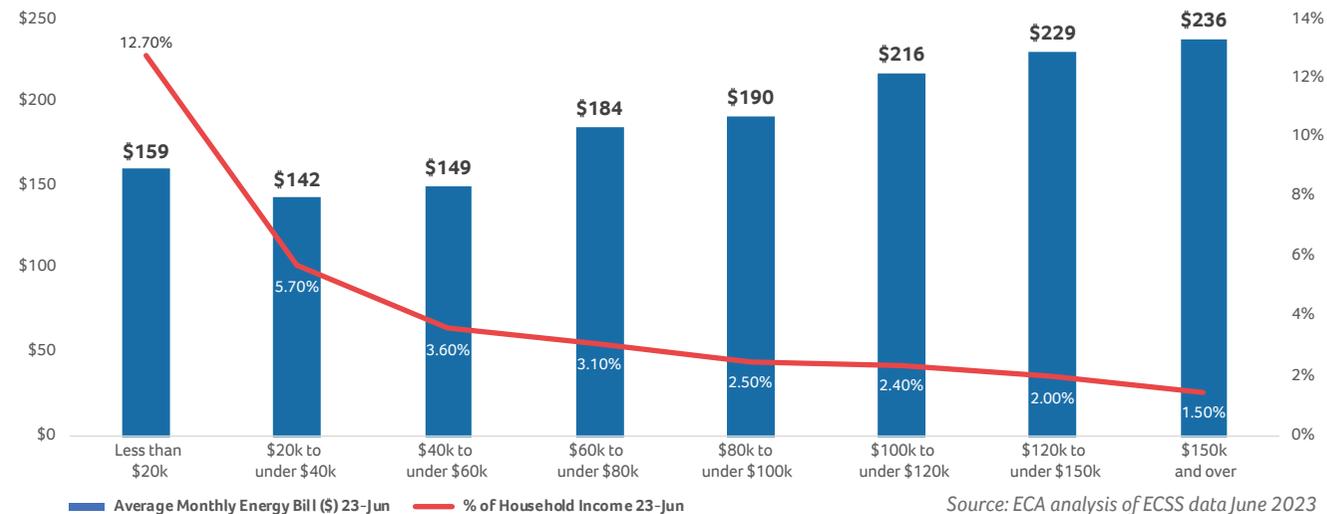
Source: ECA analysis of Census of Population and Housing: Housing data summary, 2021

Intervention is required to avoid a widening energy divide

As retail energy prices continue to climb, the divide between those who can afford their energy bills and those who can't continues to increase. For those who earn less than \$40,000 per annum, energy bills (electricity and gas) are between 5.7% and 12.7% of their income. In contrast, for those that earn over \$150,000 pa, energy bills make up just 1.5% (see Figure 4).



Figure 4: Average Monthly Energy Bill by Household Income



Many of the actions that households can take to reduce their energy bills, such as energy efficiency measures and installing solar and a battery, have high upfront costs.

[Rising housing costs are pushing low-income households into rental properties](#), where they face additional barriers to taking these actions. Energy efficiency measures and installing solar also assist households in decarbonising. As those households that can afford it increasingly electrify their homes, households under financial pressure will fall even further behind.

This divide is already being revealed in our [Energy Consumer Behaviour Survey](#), which shows that households under financial pressure or that can manage their households bills but struggle to afford anything extra are less likely to have rooftop solar (Figure 5). Most of the households not considering purchasing solar are not financially comfortable, or renters.

As discussed further below, as more households electrify, gas bills for those that remain on the network will increase. The last households left on the gas network will face

significantly higher bills for energy than those who have already electrified. Those last households are likely to be those that can least afford higher energy bills.

If we do not actively address these issues, there is a real risk that the existing energy divide will widen further, potentially at a faster pace. In fact, our research has found that 77% of people are already worried that energy will become unaffordable for some Australians in the next 3 years. Fifty-nine per cent are concerned that energy will become unaffordable for them in the next 3 years.

Figure 5: Appliances Owned – Electricity generation and storage

Q: Which of the following electricity generation and storage appliances do you have at your property? A: Rooftop PV solar panels

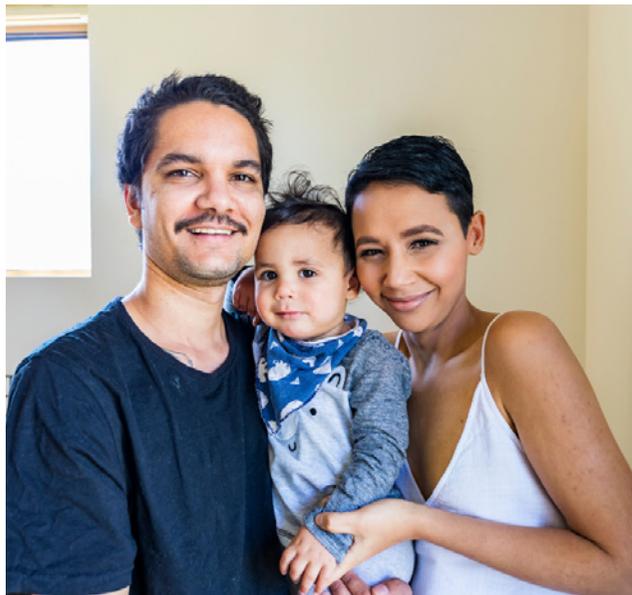


Understanding the impacts of the transition on households



Understanding future residential energy bills and transport costs

Recognising the challenges identified above, Energy Consumers Australia commissioned modelling from CSIRO and Dynamic Analysis to better understand the impact of the transition on individual households and energy consumers more broadly.



Our project did more than just examine the future of electricity bills: it investigated how changes in the electricity sector would impact household spending on gas and transportation. In the next sections we highlight some of the key findings. The Technical Report by CSIRO and Dynamic Analysis details the full methodology, assumptions and findings. We have released that report at the same time so you can see the modelling that informs this report.

We also brought together a group of stakeholders, with specific expertise in meeting consumers electricity needs now and in the future, to look at the transition and its impact on consumers in detail. These stakeholders provided ongoing advice and counsel throughout the project for which we are very thankful. The views in this report, and any errors it may contain, are Energy Consumers Australia's alone.

The Consumer Transition Reference Group

AVERAGE HOUSEHOLD CUSTOMER

How we defined an “average household customer”

To understand the impacts of the transition on individual households, we developed an “average household customer”. As discussed above, every consumer is different and so the impacts of the transition will differ depending on whether a household already has solar or an EV, how many cars the household has and how energy efficient the home already is. It will also depend on whether households are able to shift their usage, how many occupants there are, cultural expectations and other factors.

Our “average household customer” has the following characteristics:



We acknowledge that our average consumer—who pays and uses a weighted average price for energy from across the National Electricity Market and owns exactly 1.7 vehicles—is a fiction. The benefit of using such averages is the ability to clearly compare the impacts of various behaviours or scenarios on one “typical consumer”.

Electric vehicles will drive down electricity bills for everyone and have a big impact on emissions reduction

The most striking finding is that households switching to an electric vehicle will provide significant benefits to both households that switch to EVs from an existing petrol or diesel car and all other electricity consumers (see Figure 6).



For individual households that make the switch, EVs provide moderate savings now. By 2030 the upfront cost of an EV is expected to decline, and so savings will increase. The savings arise from lower ongoing operating costs because EVs are more efficient and have lower fuel costs – electricity is cheaper on a per km basis than petrol or diesel. EVs also have fewer mechanical parts and so are easier to maintain.

Our modelling also suggests that widespread uptake of electric vehicles doesn't just benefit individuals – electricity bills for *all* consumers will come down through better network utilisation. [The latest research in Australia](#) suggests that currently electric cars tend to be charged at times when the grid is not stressed and more aligned with solar production. Where this occurs, additional electric vehicles increase electricity demand without significantly increasing the size or cost to provide local grid infrastructure – reducing the unit cost of the network.

Overall, while some additional expenditure will be required to increase network capacity to meet higher peak demands caused, in part, by electric cars, these costs are more than offset by improved network utilisation. [This result is consistent with evidence from California](#), where millions of EVs have demonstrably put downward pressure on prices, providing benefits for other grid users.

Transportation currently accounts for roughly half of an average Australian household's greenhouse gas emissions. Switching to an EV would therefore also significantly reduce household emissions.

This finding makes the development of the Federal Government's National Electric Vehicle Strategy particularly important, alongside actions that individual states are taking to promote EVs.

Figure 6: Annual Savings from Electric Vehicles (20-year average)



This analysis assumes that the overall EV adoption targets identified by the 2022 ISP Step Change are achieved.

Electrifying homes and energy efficiency measures will also contribute to both household and community savings

There are benefits to consumers from switching existing gas appliances to electric and improving energy efficiency in their homes. While the potential savings for individual households are smaller than switching to EVs, they are nonetheless considerable (see Figure 7).



The modelling shows that the benefits of switching to electric appliances increase between 2023 and 2050 as the price of gas is expected to increase, while the delivered price of electricity would decrease due to better utilisation of the network (as discussed above). In practice, households are unlikely to switch before their appliances need replacing. However, consumers – and landlords – will need to be well informed about the alternatives before their appliances fail, and have the means and incentives to finance replacement electric appliances and the changes that will need to be made to wiring and plumbing.

Like EVs, electrifying appliances has wider benefits for all electricity consumers through increased network utilisation. However, unlike EVs, the savings reduce over time. Household heating eventually contributes to network peak demand and so triggers additional investment costs.

Additional network costs associated with increasing peak demand could be managed better if households are able (and incentivised) to pre-heat or pre-cool their homes and avoid contributing to network peaks at times when the grid is most under stress.

However, most homes in Australia are energy inefficient – [homes built before 2003 rate 1.8 stars on average](#). The lower the rating, the more likely that the home is leaking warm air in winter, or cool air in summer, so households must run heaters or air conditioners more often and for a longer time. Poorly insulated and draughty homes lack the potential to be pre-heated or pre-cooled because the leaky home fails to maintain a temperature without constant use of an air-conditioner.

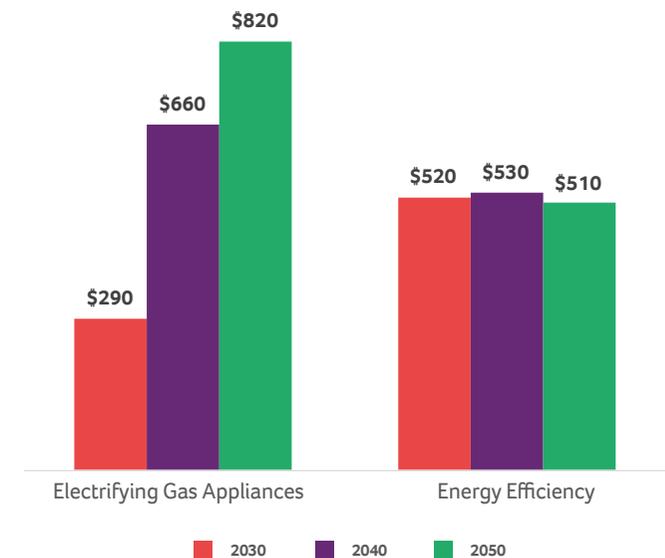
Our most recent Energy Consumer Behaviour Survey found that households under financial pressure and renters were far less likely to live in a property with insulation.

For these homes, energy efficiency measures could save consumers around \$500 per year. Multiple studies have also shown there are health benefits from improved insulation.

The Victorian Healthy Homes program provided free energy efficiency upgrades to 1,000 low-income homes of people with a health or social care need, and identified that [for every \\$1 in energy cost savings, more than \\$10 is saved in healthcare costs](#).

As discussed, replacing gas appliances with electric and energy efficiency actions such as insulation requires significant upfront costs, and some consumers potentially face other barriers. Government action is required to unlock the cost savings and benefits for all households. The wider community will also benefit when increased peak demand is minimised through sensible investment in household energy efficiency measures.

Figure 7: Savings from electrifying gas appliances and energy efficiency in given years.



Projected individual household savings available to some customers, NEM average.

Overall, households that can invest in efficient, all-electric homes save significantly compared to households that can't or don't

Overall, the Technical Report findings demonstrate that households that implement energy efficiency measures and become all-electric – including transport – will save considerably compared to those that continue to use gas for cooking and heating and petrol or diesel vehicles.



Figure 8: Total Household Energy Spending in Select Years

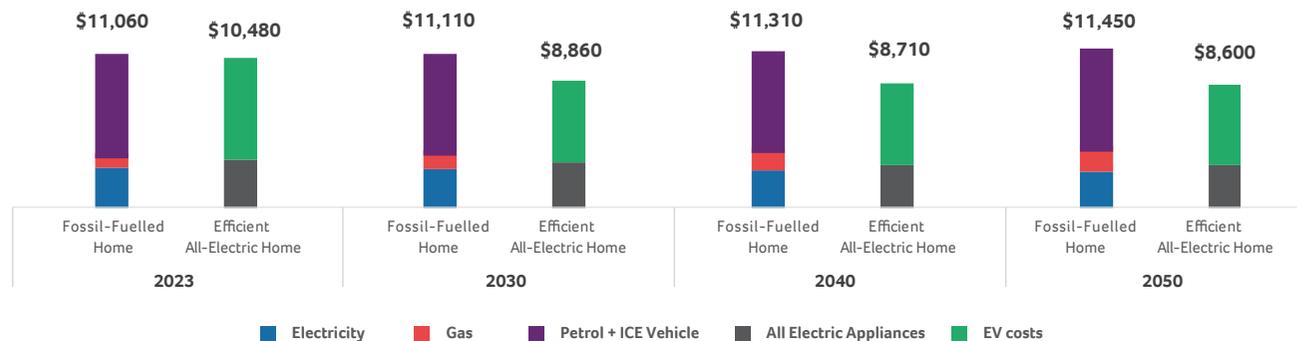


Figure 8 compares the energy spending of a fossil-fuelled household and an all-electric household in the National Energy Market and averages the projected spending on energy over a 20-year period starting in 2023.

The fossil-fuelled household has the same electricity and gas consumption as today and uses the Australian average of 1.7 internal combustion engine vehicles. The efficient, all-electric household takes energy efficient actions consistent with the 2022 ISP Step Change scenario. They use all electric appliances and 1.7 electric cars. Neither house includes solar panels or a battery.

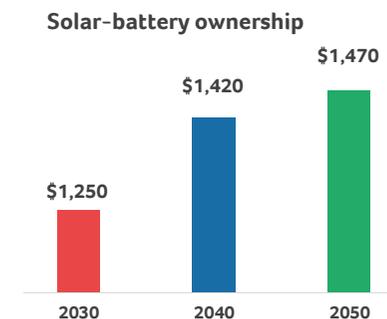
Vehicle costs are included, but potential costs from any necessary rewiring and changing appliances are excluded. Appliance costs are excluded because there are no additional costs if replaced at normal retirement rates. Wiring costs are excluded because the costs are highly location specific.

The figure shows that, even today, many households could save from going all-electric: a fossil-fuelled household that doesn't make any changes and uses the same amount of energy from the same fuel sources would spend, on average, \$11,060 per year on fuel costs over the next 20 years. An equivalent household that buys electric appliances and an EV in 2023 would spend, on average, \$10,480 per year over the next 20 years.

By 2030, a fossil-fuelled household's average annual fuel costs would be \$11,110 for the next 20 years, and for a household that goes all-electric in 2030 their costs would be \$8,860 per year for the next 20 years. By 2050 the difference in annual energy expenditure between a fossil-fuelled household and an all-electric household is \$2,850 per year.

Households that can install rooftop solar and a battery would see further benefits. By 2050, projected savings from installing solar and a battery total \$1,470 per year (Figure 9). This amount will differ depending on the unique circumstances of the individual household including how efficient the house is and the appliances used. All households should be able to access these savings – not just those that can afford the upfront cost or own their own home.

Figure 9: Projected individual household savings available to some customers, NEM average.



Consumer who face barriers to switching off gas will face escalating gas prices

As more and more households electrify all their appliances, the households that remain connected to gas are likely to pay much higher gas bills due to the need to pay higher network charges to recoup the cost of a less utilised gas network.



Even as wholesale gas costs decline from historic highs, bills will continue to increase (Figure 10). This is because the network component as a proportion of the overall bill will more than double between now and 2050. Absent major policy changes, the network component will rise from roughly 30% of the total gas bill now to 70% in 2050.

Our analysis—derived from AEMO assumptions in the 2022 ISP—shows that the cost impacts on remaining gas customers of other customers switching from gas to electricity don’t really begin to be felt until 2030. But the impacts could be quicker or slower. As we have previously discussed, the [residential retail gas customer growth rate has declined significantly](#). There are also factors emerging that could see growth in residential gas customer numbers slow more quickly than we expect.

This creates a vicious cycle for gas networks and their remaining customers. As more customers leave, the network prices progressively rise, leaving those who may be unable to make the switch to electricity with higher bills.

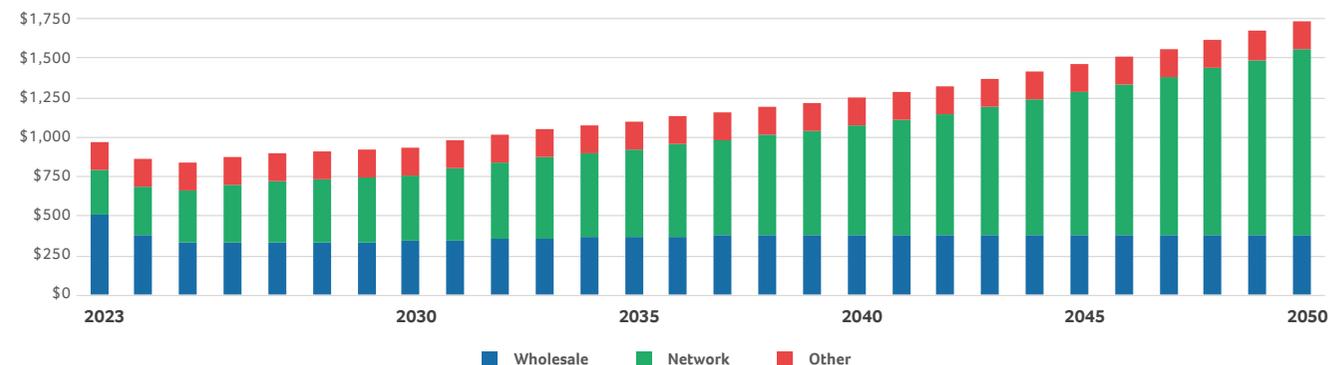
[In addition to higher bills, consumers who remain on the gas network may be at risk of eventually being forced to switch, even if they can’t afford it.](#) A decline in gas customers could

cause potential risks for the operation and safety of the network (e.g. difficulty maintaining the pressure in gas pipelines). If there aren’t enough customers to recover the costs of modifications needed to address the operational issues, parts of the gas network may need to retire early, potentially leaving consumers with no choice but to electrify.

We have assumed that neither biogas nor hydrogen will be a suitable alternative to decarbonise most Australian homes. This assumption is consistent with the ISP Step Change scenario, which assumes that by 2050 most consumers will rely on electricity for heating. It also reflects the findings of [an ongoing research project that reviews independent studies examining the role of hydrogen for residential heating](#). As at 2022, all 32 independent studies reviewed (that is, studies not carried out by or on behalf of a specific industry such as gas, oil, electricity or manufacturing) concluded that using hydrogen for domestic heating is not cost effective compared to electricity. A further 11 studies have concluded the same.

Governments have an important role in ensuring that the transition is fair and that those with the least resources aren’t left to bear the burden of the costs or poor service.

Figure 10: Projected Average Annual Household Gas Bill



Stepping Up: a smooth, planned journey for consumers



Stepping Up to smooth the way for decarbonisation

Decarbonising households is currently an overlooked factor in the transition to net zero. While there has been much focus on ‘upstream’ generation or on decarbonising specific industry sectors, planning what the energy transition will look like for consumers – what impacts it will have and what they will be asked to do – has not been explained to them.

As gas bills increase and the cost of EVs falls, more and more households will turn to electrification. However, the upfront cost of electrifying, a lack of useful, understandable information and a lack of trusted voices will remain an impediment to many households. Or it will make their decarbonisation journey unnecessarily challenging and confusing.

For example, some consumers will need to rewire their houses, or even their apartment block, to enable higher electricity demand – an issue that consumers may not be aware of when they purchase a new induction stovetop or fast EV charger. This could lead to a frustrating consumer journey, or potentially stop a household from making the switch to electricity.

A lack of clear practices for disconnecting from the gas network also remains a frustration for households going all-electric. Permanently abolishing a gas connection can be expensive, leaving gas customers with an incentive to seek a temporary disconnection that is cheaper but less safe.

The Australian Energy Regulator has recently developed a temporary solution in Victoria that socialises some of the costs of abolishing a connection, but notes that a longer-term solution is required.

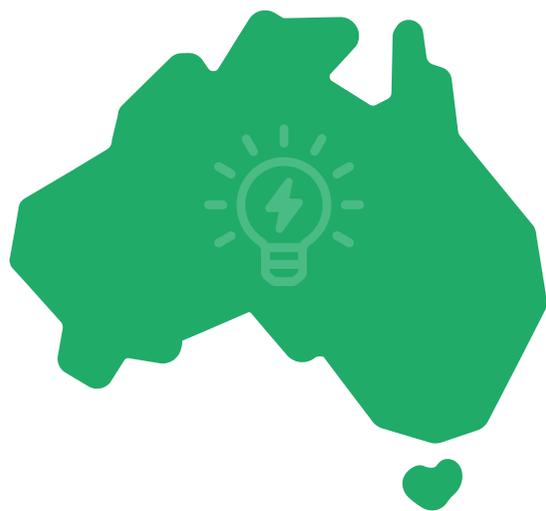
To maintain social licence for the shift to net zero, a coordinated approach is required to smooth the path for households. For some, a better understanding of the role of households in the transition and a source of trusted information will be sufficient. Others will also require financial support and more hands-on assistance. Governments need to have this conversation with consumers in a coordinated way.

Transitioning households to become all-electric will inevitably be expensive and disruptive for many consumers. Governments need to “step up” to make this step change as easy as possible for households, so they can play their part in making sure Australia meets its net zero targets and realise the opportunities of Australia’s energy future for them and their families.



A new national partnership

The scale of the change required at the household level is unprecedented. Around 5 million households will need to replace their gas cookers, gas hot water tanks and/or gas heaters. Fifteen million passenger vehicles will need to be replaced with an electric vehicle. Millions of homes will need to be renovated to improve their efficiency performance.



Achieving these changes requires a coordinated and proactive approach across Australia. This will be achieved most effectively by creating a new national partnership across all levels of government with the objective of ensuring an orderly and equitable shift to all-electric homes.

Overarching policy decisions will need to be developed at the federal and state government levels, and we recommend that local councils be included in the partnership, particularly when it comes to actioning the plan. Many local governments already have their own plans in place to reach net zero (e.g. [the City of Merri-bek](#) and the [City of Sydney](#)). They also have the local knowledge that is needed to make effective use of funding and can provide on-the-ground support.

The recent Covid-19 pandemic has shown that this level of coordination across all levels of government is possible. Governments have also learned useful lessons from that experience that will help in coordinating the energy transition. By working together, governments can leverage their respective resources, expertise, and regulatory powers to develop comprehensive and cohesive strategies for decarbonising households. A single, coordinating partnership that involves all three levels of government will promote alignment in policies and initiatives, both across and within jurisdictions, avoiding inconsistencies or conflicting approaches that could hinder progress towards decarbonisation goals.

We also recommend the national partnership work closely with consumers themselves to co-design measures that will be fit-for-purpose and effective. In our submission to the [National Energy Performance Strategy](#) we provide some specific suggestions of the types of measures governments could undertake.



Smart meters and electrification

The roll-out of smart meters presents an opportunity to lay the groundwork for electrification. Many households will require rewiring to enable a smart meter to be installed. Any rewiring work should be compatible with future electrification requirements to minimise cost and disruption to households.

We have previously endorsed proposals for government support for site remediation for financially stressed consumers to enable smart meter installation. This could be extended to include readiness assessments for electrification and potentially future-proofing work.

Planning for change: What does the new national partnership need to do?

We recommend the new national partnership be tasked with developing a clear and comprehensive national plan that sets out how all households will decarbonise.

The plan will require a combination of top-down and structural policies that enable the shift from fossil fuels to electricity, and bottom-up actions to support households when they're making the change.

We welcome the start that governments have made through measures to support EV uptake and household energy efficiency improvements, and note decisions by the ACT and Victorian Governments to ban new gas connections. But more can be done to ensure the shift to all-electric homes occurs at lowest cost, with minimal disruption to consumers, and doesn't leave any households behind. To achieve this step change, governments will need to step up and work together.



What	Why	How
Supporting consumer agency	Households need the right information at the right time from a trusted source that is clear, and in their language, to empower them to make decisions that are right for their situation. They also need to understand why they're being asked to change to gain and maintain social licence for the energy transition.	<ul style="list-style-type: none"> • Explain to consumers why they are being asked to change the way they use energy, so their expectations about the energy transition are clear. • Governments must ensure the provision of trusted and independent energy information and support, to ensure consumers can make the choices that best suit their needs and circumstances now and in a more complex future energy market. • Inform consumers on issues such as where to find reliable advice and technical support, assessments of their energy needs, how to find reliable tradespeople and where to access funding and finance.
Financial support	The transition will be costly, and more so for some than others (for example, those that must rewire their homes). Some are better placed to bear the costs than others. At the very least, funding is needed to support electrification of Australia's most vulnerable households.	<ul style="list-style-type: none"> • The Commonwealth Government's Household Energy Upgrades Fund is a start, but support will need to expand beyond 110,000 home upgrades and a further 60,000 social housing upgrades to ensure all 11 million homes in Australia can decarbonise. • Provide access to free or low-cost finance options to help consumers electrify. • Provide grants or subsidies targeted to those least able to afford to decarbonise.
Structural policies to enable change	Complementary government policies are needed that enable, or potentially mandate, the changes required to make sure the necessary infrastructure and processes are in place to help all households electrify.	<ul style="list-style-type: none"> • Improve access to low-cost EVs and charging infrastructure, particularly for those who face barriers to charging their EV at home. As highlighted in the modelling in the accompanying Technical Report, encouraging the switch from petrol or diesel vehicles to EVs will provide the most value in terms of individual household benefits for all electricity consumers. • Provide a clearer path for those in rental properties and apartment blocks to access clean technologies and energy efficiency measures to address barriers to these households decarbonising e.g. through funding, new policies and standards, or removing red tape. • Develop a plan to ensure the safe and orderly decline of the gas network in a way that does not leave a high financial burden or unsafe service for the last households using the gas network.

Planning for change: what will Energy Consumers Australia do?

Supporting consumer agency requires meaningful engagement with consumers, both broad and deep, to understand their needs and preferences and how they want to think, feel, and interact with energy.

To effectively support consumers and provide them with trusted information requires understanding what type of information they need, where they want to access that information, and from whom.

To build understanding and social licence for change requires understanding what motivates consumers and recognising that motivations will differ between different customer segments.

We are about to commence a research program to better understand how consumers will make decisions about their energy use in the future.

We are designing a participatory consumer research program that aims to address the knowledge gap consumers may have of the energy transformation and what role they may play, and seeks to unpack their thoughts, responses and actions through a deliberative process.

This work will provide a foundation on which the new national partnership can build its own program for supporting consumer agency, so that we can take consumers on this journey, together.

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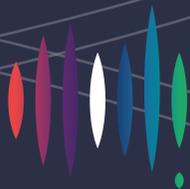
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