



Joint Submission to the Economic Reference Committee Inquiry into Residential Electrification

29th September 2023

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About the Public Interest Advocacy Centre

The Public Interest Advocacy Centre (PIAC) is leading social justice law and policy centre. Established in 1982, we are an independent, non-profit organisation that works with people and communities who are marginalised and facing disadvantage.

PIAC builds a fairer, stronger society by helping to change laws, policies and practices that cause injustice and inequality. Our work combines:

- legal advice and representation, specialising in test cases and strategic casework;
- research, analysis and policy development; and
- advocacy for systems change and public interest outcomes.

Energy and Water Consumers' Advocacy Program

The Energy and Water Consumers' Advocacy Program works for better regulatory and policy outcomes so people's needs are met by clean, resilient and efficient energy and water systems. We ensure consumer protections and assistance limit disadvantage, and people can make meaningful choices in effective markets without experiencing detriment if they cannot participate. PIAC receives input from a community-based reference group whose members include:

- Affiliated Residential Park Residents Association NSW;
- Anglicare;
- Combined Pensioners and Superannuants Association of NSW;
- Energy and Water Ombudsman NSW;
- Ethnic Communities Council NSW;
- Financial Counsellors Association of NSW;
- NSW Council of Social Service;
- Physical Disability Council of NSW;
- St Vincent de Paul Society of NSW;
- Salvation Army;
- Tenants Union NSW; and
- The Sydney Alliance.

About 350 Australia

350 Australia is a registered charity, and our charitable purpose is to inform and educate the general public about climate change, its impact on the natural environment, and the need to reduce fossil fuel emissions and adopt renewable energy solutions. We are growing a grassroots movement to end fossil fuels and create community-led solutions to the climate crisis. We have 60,000 supporters across the country.

About Renew

Renew advocates on behalf of its members who are making sustainable choices in their own homes and who benefit from the experience of others in the Renew network. For over 40 years, Renew has played a critical role in promoting, educating and guiding Australians on every step of their sustainability journey. Our goal is that by 2025, sustainable living in Australia will be a common expectation for Australian households, be increasingly affordable and accessible, have broad-based political support, and occur at a scale where it creates its own momentum. Renew is actively working to represent households at local and government level decision-making to ensure sustainability and energy efficiency policies and outcomes continue to be on the agenda for all Australians.

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The Public Interest Advocacy Centre office is located on the land of the Gadigal of the Eora Nation.

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1. Introduction

The Public Interest Advocacy Centre (PIAC), 350 Australia and Renew welcome the opportunity to respond to the Senate Economics References Committee's inquiry into residential electrification. Our organisations strongly support electrification of Australian homes. Efficient, renewable electrification of Australian households is crucial to enabling an energy system transition that improves energy affordability.

Efficient household electrification is a key part of the lowest cost pathway for decarbonising the energy system and improving long term energy affordability and equity. Early-adopting households with the means to do so are already demonstrating the significant cost, health and sustainability benefits efficient electrification can enable.

Commonwealth Government leadership and commitment is needed to co-ordinate national action. This commitment and leadership can provide certainty and robust policy signals initiating planning and regulatory reforms, implementation of improved standards, signals and incentives for investment, and implementation and co-ordination of supports to target disadvantaged households.

PIAC is coordinating the 'Efficient Electric Homes Collaboration' (EEHC). EEHC involves over sixty organisations from across social, environmental, climate and industry sectors. The EEHC is guided by promotion of the following objective:

Rapid renewable electrification and improved energy performance of Australia's homes – new and existing – to benefit household energy equity, affordability and health, while accelerating progress to zero emissions and a more resilient economy and community.

This objective should be adopted by the National Energy Transformation Partnership, as a first step in initiating the process to co-ordinate Government action for efficient household electrification.

2. Optimal timeline for residential electrification

Efficient residential electrification requires strong policy signals linked to concrete targets and timeframes which are reportable. These targets should be informed by and linked to emissions reductions requirements and set both final objectives as well as interim pathways that can provide certainty. This certainty is crucial to enable:

- Australian households to start making informed investment and purchasing decisions.
- State and Territory jurisdictions alignment of policies, programs, and investments supporting these targets.
- Commencement of future planning for gas networks to enable a managed, smooth and efficient transition for households.
- The realisation of immediate emissions reductions benefits through reduced energy use and increased utilisation of DER.

Efficient residential electrification is a substantial nation-building task made significantly easier and least costly if commenced as soon as possible. On this basis PIAC recommends the following timeline, developed and supported by organisations involved in the EEHC.

Level 1 – All homes

- All homes to be efficient and electric by 2035 – where 2035 is a crucial emissions reduction target point and one where the energy system will be substantially renewable.

Level 2 – new and existing homes

- All new homes – efficient and electric no later than 2025 – where this involves immediately proceeding to ‘zero-carbon ready’ new homes to minimise the future retrofit burden.
- Existing homes – are retrofitted to be efficient and electric by 2035 – where this is a stretch target to inform action and provide certainty, and may involve allowing minimal, defined exceptions.

Level 3 – priority retrofits

- Public and community housing is efficient and electric before 2030 – where these represent an economically efficient opportunity to build supply chains and markets while prioritising equity in the transition for those facing the biggest barriers and most likely to benefit.
- First Nations regional and remote communities housing is efficient and electric before 2030 – where these represent an opportunity to prioritise equity.
- Low-income owner occupier housing is efficient and electric by 2030 – where these are a priority group requiring government assistance and support and represent an opportunity to prioritise equity.
- Rental standards for energy efficient and electric homes are mandated by 2025 in line with the community blueprint for minimum energy efficiency standards for rentals¹. Full compliance with transition to all-electric rental properties should then be required by no later than 2035 – where this represents a crucial measure to prioritise equity and address the standards of existing housing stock and improve outcomes for more than 30% of the population who would otherwise be locked out of the benefits of efficient electrification.

3. Benefits of household electrification

Efficient household electrification should not be viewed only through a ‘benefits’ framework but regarded as a necessary contributor to important national priorities for emissions reduction, climate resilience, energy affordability, social equity and household health and wellbeing. The objective of household electrification should reflect this critical role.

Where the Committee is interested in considering the benefit of efficient household electrification in more detail, PIAC highlights below the range of national social and economic, household energy affordability, health, resilience and ecological and climate benefits efficient household electrification can enable.

¹ website <https://www.healthyhomes.org.au/news/community-sector-blueprint#:~:text=The%20Blueprint%20takes%20a%20principles,be%20released%20in%20early%202023.>

3.1 Economic opportunities

The United States and the European Union, in recent actions, have demonstrated the significant economic opportunity to be realised through efficient electrification. The United States Inflation Reduction Act (IRA) is funding and supporting an ambitious suite of climate action programs and projects, including household electrification, to reach their climate goals and to address inflation and the cost-of-living crisis. This program is noted as generating such significant economic activity and opportunity in related industries, that other nations (including Australia) are having to consider their own responses to realise similar opportunities. Efficient household electrification should be considered in this context.

Economic opportunities enabled and promoted by efficient residential electrification include:

- Reduction of energy price inflation, including through reduced reliance on gas and greater reliance on (and utilisation of) cheaper domestic renewable energy generation.
- Long-term employment and business opportunities in a range of sectors required to plan, promote, manufacture, implement and maintain efficient electric homes. Importantly these opportunities are geographically spread across a range of industries and employment levels.
- Reduced government health spending through improvement of the health of household environments, with additional benefits to improved productivity and reduced loss of employment hours.
- Minimising Government expenditure on emissions reduction and climate adaptation by improving energy utilisation and household climate resilience.
- Realising economies of scale by using government spending power, assets and resources to grow markets. E.g. through priority retrofits of public housing and support for low income households and other groups experiencing disadvantage.
- Incorporating efficient electric rebuilds of homes into disaster recovery in support of improving community resilience.
- Leveraging Australia's comparative advantage in renewable energy resources and critical minerals to develop manufacturing and other high-value domestic industries which reduce supply chain inflation and improve domestic economic independence and resilience.

3.2 Household benefits

Efficiently electrifying Australian homes improves household energy affordability, improves household health (especially for children) and wellbeing, with these benefits particularly prevalent for those most disadvantaged groups (such as household with low incomes, renters, First Nations households and remote community households).

Household electrification alone is not enough to achieve the systemic and household benefits discussed in this submission and energy efficiency must be seen as an inseparable enabler of affordability and health benefits for households.

3.2.1 Affordability

The current cost of living crisis, particularly in the cost of housing and energy, has placed significant pressure on households and there is little prospect of relief in the short to medium term. Efficient electrification of homes is key to saving on essential housing and energy costs and permanently easing cost of living pressures, particularly for those most in need. As household

energy costs lower, they lower the overall cost of maintaining a home, leaving people with improved capacity to meet their other needs.

A fully electric, 7 star home with solar in Western Sydney will spend approx. \$2400 less a year in 2023 on their energy bills compared to a 3 star, dual-fuel home². Compared to a 7-star, dual-fuel home, the fully electric home with solar will still spend approx. \$1200 less a year. A significant factor in these savings is removing the ongoing fixed cost of maintaining a gas connection, as well as savings related to the increasing gap between the efficiency of gas appliances and more efficient electric ones (such as heat-pump hot water systems and reverse-cycle air-conditioners). These savings do not include the impact of new tariff offers which allow all-electric homes (even those without their own solar) to benefit from cheap/free solar energy in the middle of the day. This is a crucial consideration in improving affordability for homes without access to solar.

Gas is increasingly expensive for Australian households. As more people electrify their homes, those left on the gas network will face higher network charges as the pool of people from which these charges are paid shrinks. Without government planning and supports it is very likely that low-income and rental households who are least able to bear these costs will be the households left on the network, exacerbating their disadvantage in not being able to efficiently electrify.

3.2.2 Health

Methane is a harmful and poisonous gas. Pollutants from gas appliances reduce indoor air quality in homes, both when gas is burned and through leakage of unburned methane. Household gas use is increasingly being linked to poor health outcomes including childhood asthma and certain cancers. Cooking with gas is estimated to be responsible for up to 12% of childhood asthma in Australia. The health impacts of residential gas use are more fully explored in the Climate Council's report 'Kicking the Gas Habit: How Gas is Harming our Health'³.

Phasing out the use of gas in Australian homes through efficient electrification will support improved health outcomes, reduced personal health spending and improved productivity, as well as reduced government health spending.

Health organisations that recommend transitioning away from residential gas use include Asthma Australia, Doctors for the Environment, Healthy Futures and the Climate and Health Alliance.

3.3 Ecological & climate benefits

Australia's climate and emissions reduction commitments cannot be met without improved household efficiency and renewable electrification. All credible pathways for emissions reduction involve rapid electrification supported by renewable energy, with supporting improvements to energy efficiency. Efficient residential electrification can further support a faster and cheaper transformation of Australia's energy system by enabling greater use of flexible loads to optimise and manage demand.

² Renew 2022 'Limiting Energy Bills by Getting Off Gas' <https://renew.org.au/wp-content/uploads/2022/11/Report-Limiting-energy-bills-by-getting-off-gas.pdf>

³ Climate Council 2021 'Kicking the Gas Habit: How Gas is Harming our Health' <https://www.climatecouncil.org.au/wp-content/uploads/2021/05/Kicking-the-Gas-Habit-How-Gas-is-Harming-our-Health.pdf>

More efficient electric homes, with more flexible demand, are also a key contributor to improved household and community resilience in response to the impacts of climate change already being experienced.

4. Cost implications of alternatives to electrification

There are no plausible alternatives to efficient household electrification. Any potential 'alternatives' fail to meet some or all of the criteria addressed in this submission, either failing to contribute to emissions reduction and improved household health or involving unnecessary cost and risk to households.

No potential 'alternatives' address the household cost-implications of maintaining a secondary network connection for gas, a connection with rapidly reducing utility and increasing cost. These alternatives fail to address the substantial lost value for households (particularly those without solar of their own) and the community, in being able to benefit from solar energy through demand flexibility of their largest household loads (such as water heating and heating). Increasingly households can access cheap (or even free) energy during times of high solar generation, with dual fuel households twice disadvantaged by increased costs as well as lost opportunities to benefit.

The purported alternative 'renewable gases' often include 'green hydrogen' and biomethane. Hydrogen is not a viable or plausible solution for households in the foreseeable future. Due to the properties of hydrogen and methane, hydrogen could only make a meaningful contribution to emissions reduction where it is 100% of the gas used in the network. The cost implications for repurposing the current fossil gas network to accommodate green hydrogen, particularly in the short term, make this practically impossible. It is also important to consider that any green hydrogen would be produced using the very same renewable energy which household electrification would rely on, at astronomically greater cost to households and the energy system, with significantly lesser efficiency. Hydrogen is not a viable alternative for households and efforts to commercialise green hydrogen should be directed towards those uses where it is most suitable and efficient.

Biogases (such as biomethane) are also presented as an alternative for households because they are functionally similar to existing gas. While biogases will be required in decarbonisation Biogas is not viable as a wholesale replacement for the current residential gas network. Utilising biogases does not address the household health implications of gas usage in homes. It would also continue to leave households inefficiently supporting two networks and unable to benefit from the rapid growth of solar energy. There are also functional limits to the amount of efficiently and economically accessible biogases, and these sources should be retained for uses where more efficient decarbonisation options are not available.

Biogas is likely to have a very small, targeted role as a temporary solution for the small number of dwellings that are impossible to electrify in the short term.

5. Barriers to household electrification

There are a range of inter-related and overlapping systemic, structural, circumstantial, and other barriers impeding the rapid and equitable implementation of efficient household electrification. Addressing these barriers, particularly those which are systemic or structural, should be a priority for strategic government action.

5.1 Regulation, governance & legislation

Existing legislation, regulation and governance is predicated on supporting and expanding gas networks and increasing gas utilisation. Across jurisdictions, regulations and policy impede improved standards of building and energy efficiency. Comprehensive, co-ordinated reform is urgently required to enable efficient household electrification within the targeted timeframes.

Priority areas of action must include:

- Reform of energy laws and rules to ensure they are fit for purpose to facilitate the efficient, managed retreat of gas networks.
- Reform of state planning laws and regulations to prioritise electrification and remove preferences for gas and support conversion.
- Improve co-ordination between governments, regulators & businesses to align policy, planning and investment to enable the transformation of Australia's energy system
- Improve appliance standards and ensure robust compliance, including ensuring open interoperability of device operation and management systems.
- Ensure a unified whole-of-government responsibility to implement and oversee the progress and effectiveness of reforms.

Recommendation:

Initiate a co-ordinated review of gas laws, regulations and policies, and product and service standards and compliance through the National Energy Transformation Partnership. This review must be focussed on alignment of policies and regulations across jurisdictions with an objective to facilitate efficient electrification of households within the target dates.

5.2 Gas Network & Businesses

Household electrification presents an existential threat to gas network businesses. In the context of laws and regulations which are also predicated on facilitating expansion and increased demand, this means gas networks have no incentive to facilitate or encourage household electrification. Co-ordinated policy, regulatory signals and supporting policies from the Commonwealth government would allow regulators and gas businesses to plan for and enable an orderly retreat of gas networks in the long-term interests of Australian household energy consumers and the wider community.

This action should commence with:

- An immediate moratorium and ban on new connections to residential developments. An immediate ban on new gas connections ensures the challenge of efficient electrification is only as big as it is today.

- Regulatory changes to ensure the full costs of any new connections to non-residential developments are fully recovered from the connecting entity with ongoing risk assumed by the gas network business.
- Regulatory reform to enable gas network businesses to refuse new connection requests.
- Regulatory reform to allow (and require) gas network businesses to assess their networks and progressively plan for and implement staged network retreat where it is efficient to do so.
- Initiation of a process to consider comprehensive reform of gas laws and regulations to enable efficient, staged gas network retreat.
- Consideration of the appropriate sharing of costs and risks of potential unrecovered gas network assets between consumers, governments and gas network businesses.
- Implementation of measures for gas networks to assist 'vulnerable households' through supporting targeted electrification.

As profit-making entities gas companies are understandably concerned about the risk of their networks becoming stranded assets. This concern does not mean consumers should be responsible for mitigating gas company risks. Gas businesses have known about the risks of climate change and the role of methane for many years and prudent risk management should have involved planning for network retreat and declines in demand without unreasonable impacts on consumers.

Concerningly, far from prudent risk management and future planning, gas network businesses have incentivised new connections and increased household gas demand. This has included continuing to offer incentives for households to switch to gas appliances without providing accurate information regarding the impacts and costs of those appliances and the risk that households will be left with stranded investments.

The ACCC has identified concerning examples of greenwashing in the energy sector as part of their ongoing compliance and enforcement priority 'Consumer, product safety, fair trading and competition concerns in relation to environmental claims and sustainability.' Overcoming this barrier requires reform of regulations to reduce the perverse incentives they currently provide to gas businesses. It also requires Government action to give direction to gas businesses in relation to their responsibilities to consumers and ensure the provision of accurate and timely information and advice.

Recommendation:

Ban new residential gas connections and expansion of the gas network. Initiate reform to enable (and require) gas companies to assess their network and plan for managed retreat. This should ensure that any new non-residential connections are only allowed at full cost to the connecting entity, with the gas networks assuming any associated asset stranding risk from these connections.

5.3 Upfront costs, finance & funding

Efficient electrification can come with significant upfront costs for some households presenting a barrier for many, particularly those with lower incomes. The long-term savings enabled by efficient electrification make it an undeniable benefit over time. However, many households are not able to access the \$5K-\$15K that is sometimes required to undertake all retrofits. Even for

those households who may be capable, cost of living pressures often mean that efficient electrification can't be made a priority.

Upfront costs of efficient electrification include:

- Thermal shell upgrades including insulation, draught proofing, window-glazing and shading.
- Appliance replacement for heating, hot-water and cooking
- Any wiring and other associated upgrades sometimes required to enable electrification.
- Consumer Energy Resources (CER) including rooftop solar, batteries and household energy management systems.
- Gas network disconnection and decommissioning.

The Household Energy Upgrades Fund announced at the 2023 federal budget represents an important first step in starting to provide supports for households to efficiently electrify. However, much more work is required to address the range of financial barriers faced by households, including for those without any capacity to service loans. Governments should examine opportunities to co-ordinate industry, government finance, efficiency schemes and other finance and support options to more comprehensively address the financing and funding barriers many households face to efficient electrification.

5.4 Low-income households

Low-income households are often those worst impacted by inefficient, unhealthy homes and the least able to efficiently electrify without adequate supports. The federal government should prioritise providing a range of supports to low-income households to ensure they are not only not left behind, but prioritised in the transition.

Organisations including the Australian Council of Social Service⁴ and the Brotherhood of St Lawrence⁵ have provided clear policy direction for specifically addressing the barriers to efficient electrification that low-income households face. PIAC recommends these form the basis of co-ordinated action by governments.

Recommendation

Prioritise targeted support for disadvantaged households (including low-income, renters, First Nations households and remote communities) to efficiently electrify their homes. Engage with these communities directly to understand the pathways for efficient electrification that are most useful. Engage with social sector organisations including ACOSS and Brotherhood of St Lawrence to build on their evidence-based policy packages for supporting low-income households to efficiently electrify.

5.5 Renters

More than 30% of Australians live in rental properties and many will rent for their entire lives. Existing tenancy laws provide no scope for renters to electrify or influence the efficiency of their

⁴ ACOSS 2021 'Proposal and implementation plan for a national low income energy productivity program (NLEPP)' <https://www.acoss.org.au/wp-content/uploads/2021/08/Brief-Proposal-and-implementation-plan-for-National-Low-income-Energy-Productivity-Program-September-2021.pdf>

⁵ Brotherhood of St Lawrence 2023 'Enabling electrification: addressing the barriers to moving off gas faced by lower-income households' <https://www.bsl.org.au/research/publications/enabling-electrification/>

home. Without any requirement to do so, landlords rarely upgrade the housing they provide to be healthy, efficient and affordable.

The Commonwealth government can work through the National Energy Transformation Partnership to provide strong policy signals for reform in the rental sector. This should prioritise a policy commitment to implement mandatory energy efficiency standards for rentals, including requirements for electrification. Incentives for landlords should only be considered to facilitate the implementation of standards but could make up part of a suite of policies addressing the barriers to rental properties efficiently electrifying.

The Commonwealth government could be a leader in this space by requiring all new housing stock enabled by Commonwealth funding is efficient and electric.

In 2022 the community sector released the *Community Sector Blueprint: a National Framework for Minimum Energy Efficiency Rental Requirements*⁶. This blueprint should serve as the basis for the implementation of efficient electrification in rentals.

Recommendation

The National Energy Transformation Partnership should commit to urgent rental reform. This should prioritise mandatory energy efficiency standards for rental properties. Reform of energy for rental properties should be guided the Community Sector Blueprint: a National Framework for Minimum Energy Efficiency Rental Requirements.

5.6 Supply Chain & workforce

The capacity of the Australian workforce and supply chain constraints are a considerable barrier to efficient electrification of Australian homes, particularly in the shorter term. However, this barrier also represents an ongoing economic opportunity to build domestic capacity, resilience and employment opportunity.

Organisations including the Energy Efficiency Council⁷, RaceFor2030⁸ and unions continue to map workforce and supply chain requirements for efficient residential electrification and provide policy recommendations for resolving this barrier. For more detailed discussion and recommendations on workforce and supply chain, please see the submission to this inquiry from the Energy Efficiency Council.

5.7 Hard to electrify households

While the vast majority of Australian homes can be efficiently electrified, there are a small number of dwellings that may be hard or impossible to electrify within the target timeframes. While this is not a barrier for the majority of Australians, it will require consideration and action from governments, regulators and energy providers.

⁶ Healthy Homes for Renters 2022 'Community Sector Blueprint: a National Framework for Minimum Energy Efficiency Rental Requirements' <https://www.healthyhomes.org.au/news/community-sector-blueprint>

⁷ Energy Efficiency Council 2023 'Residential Energy Upgrades Workforce Mapping Project' <https://www.eec.org.au/policy-advocacy/projects/projects-overview#/residential-workforce-mapping-project>

⁸ RaceFor2030 2023 'Energy Upgrades for Australian Homes' <https://racefor2030.com.au/project/energy-upgrades-for-australian-homes/>

Hard to electrify dwellings may include some portion of:

- High-density buildings which have been constructed in a way (including through the use of gas embedded networks) which makes efficient electrification of water heating and heating and cooling difficult or impossible without rebuilding or similarly disruptive action.
- Residential buildings with electrical load and structural issues (for instance those buildings with heritage value which precludes substantial overhauls).

It should also be noted that while not all apartments will be technically or structurally hard-to-electrify, there will likely be social challenges arising from strata arrangements. This is another area where strong government policy signals and legislation, clear timeframes and accessible consumer information will be needed to help address strata issues.

Action will be needed to consistently identify hard or 'impossible' to electrify properties and plan the most efficient response to their circumstances. In some cases, this may involve electrification with less efficient options, combined with arrangements to offset energy costs through access to cheap solar energy.

5.8 Consumer Information

A lack of accurate, unbiased, accessible consumer information and assistance is currently a barrier to efficient residential electrification, particularly for many culturally and linguistically diverse communities. It is difficult for consumers to be certain that electrification is in their interests and know where to start on their electrification journey, which vendors to trust and where to find support. This is often exacerbated by misinformation from entities who have a vested interest in slowing the pace of residential electrification. The first step in overcoming this barrier must be to address inaccurate or misleading information through robust responses to greenwashing, including regulation of green claims and strong enforcement action.

Consumers would also benefit from the creation of a 'one-stop-shop' of independently provided information and assistance regarding efficient electrification including demonstration of benefits for them, and assistance in identifying support, planning interventions, and accessing reliable service-providers and government and industry assistance schemes.

Recommendation:

Ensure more consistent, accurate and accessible information for Australian households through regulation of green claims and the creation of independent energy hubs. The National Energy Transformation Partnership should create 'one-stop-shops' household advisory services and/or energy hubs to enable more effective community engagement with the transition. As part of their compliance and enforcement priority on greenwashing the ACCC and other bodies should investigate gas businesses promoting continued gas use as a more affordable, clean/renewable option for households, including through ongoing incentives for new gas appliances.

Recommendation:

Provide dedicated funding for Multicultural communities and organisations to run engagement programs in their communities. Different communities have varying energy experiences and needs and will require different strategies to ensure efficient electrification can meet those needs.

Targeted funding should be made available to multicultural organisations to run deep engagement and support programs which can help shape the implementation of efficient electrification policies

6. Policies and supports for efficient electric homes

6.1 Effectiveness of existing incentives for household electrification

Certain state and local jurisdictions are currently leading the way in terms of policies, funding and supports for efficient residential electrification. The ACT plans to electrify by 2045⁹ and has implemented policy reforms and provided supports to households including banning new gas connections, introducing minimum energy efficiency standards for rental homes, providing no-interest loans for efficient electric upgrades and runs a sustainable home advice program.

The Victorian government's 'Gas Substitution Roadmap'¹⁰ includes a ban on new residential gas connections, a residential electrification grants program, free training for electricians in solar and battery installation and continues their Energy Upgrades for Households program which offers discounts on more efficient appliances. While these jurisdictions have made admirable in-roads on the path to efficient residential electrification, their efforts are constrained by a lack of leadership and coordination at the national level and consistent co-ordination which should come through the National Energy Transformation Partnership.

6.2 Recommended policy interventions

Leadership and coordination of national efforts towards efficient residential electrification is required from the Commonwealth government through the National Energy Transformation Partnership. While the on-the-ground implementation of efficient electrification programs will predominantly be within state and local government jurisdictions, the Commonwealth has a crucial leading, enabling and supporting role to play. We recommend the Commonwealth seek to include efficient electrification as a more significant priority workstream for the Partnership, and commence the processes recommended throughout this submission.

7. Resources

Energy Efficiency

The following resources provide further evidence demonstrating why energy efficiency and electrification must be progressed together by detailing the affordability, health and emissions reductions benefits that are gained through energy efficiency.

Energy Efficiency Council and ANZ 2023 'Putting Energy Efficiency to Work: The Forgotten Fuel Series' <https://www.eec.org.au/policy-advocacy/publications/forgotten-fuel-series>

Climate Council 2022 'Tents to Castles: Building Energy Efficient, Cost-Saving Aussie Homes' <https://www.climatecouncil.org.au/resources/tents-castles-building-energy-efficient-cost-saving-aussie-homes/>

⁹ ACT Government 2023 'Canberra is electrifying' <https://energy.act.gov.au/>

¹⁰ Victorian Department of Energy, Environment and Climate Change 2023 'Victoria's Gas Substitution Roadmap' <https://www.energy.vic.gov.au/renewable-energy/victorias-gas-substitution-roadmap>

Energy Consumers Australia and Renew 2022 'Energy Efficient Housing Research'
https://renew.org.au/wp-content/uploads/2022/11/NGR2111008-Energy-Efficient-Housing-PUBLIC-Report_final.pdf

International Energy Agency 2023 'Energy efficiency and behaviour' in *Net Zero Roadmap: A Global Pathway to Keep 1.5 in Reach* <https://www.iea.org/reports/net-zero-roadmap-a-global-pathway-to-keep-the-15-0c-goal-in-reach>

Gas is costing Australian households

The following resources include modelling and costings demonstrating how much more dual-fuel households pay for their energy compared to efficient, electric homes.

Environment Victoria 2023 'It's a Gas: How ditching gas this winter can cut heating bills by 75%'
<https://environmentvictoria.org.au/2023/07/19/its-a-gas-how-ditching-gas-this-winter-can-cut-heating-bills-by-75/>

Climate Council 2022 'Switch and Save: How Gas is Costing Households'
<https://www.climatecouncil.org.au/resources/switch-and-save-how-gas-is-costing-households/>

Renew 2021, 'Households Better Off: Lowering energy bills with the 2022 National Construction Code' <https://renew.org.au/wp-content/uploads/2021/10/Households-Better-Off-full-report.pdf>

Renew 2022, 'Limiting energy bills by getting off gas' <https://renew.org.au/wp-content/uploads/2022/11/Report-Limiting-energy-bills-by-getting-off-gas.pdf>

Health impacts of gas

The following resources detail some of the health risks from the use of gas in homes

Climate Council 2021, 'Kicking the Gas Habit: How Gas is Harming our Health'
<https://www.climatecouncil.org.au/wp-content/uploads/2021/05/Kicking-the-Gas-Habit-How-Gas-is-Harming-our-Health.pdf>

Doctors for the Environment 2020 'Home Gas Appliances and Your Health: Fact Sheet'
<https://dea.org.au/home-gas-appliances-and-your-health-fact-sheet/>

Gas network transition – necessity, risks & myth-busting

The following resources provide greater detail into why a retreat of the gas network is necessary and policy requirements for advancing efficient renewable electrification. Some of these resources address stranded assets, risk management and cost recovery.

Grattan Institute 2023 'Getting off gas: why, how, and who should pay?'
<https://grattan.edu.au/report/getting-off-gas/>

Energy Consumers Australia 2023 'Stepping Up: A smoother pathway to decarbonising homes'
<https://energyconsumersaustralia.com.au/wp-content/uploads/Stepping-Up-Report-Final.pdf>

Energy Consumers Australia 2023 'Risks to gas consumers of declining demand'
<https://energyconsumersaustralia.com.au/publications/risks-to-gas-consumers-of-declining-demand>

Institute for Energy Economics and Financial Analysis 2023 "Renewable gas' campaigns leave Victorian gas distribution networks and consumers at risk" <https://ieefa.org/resources/renewable-gas-campaigns-leave-victorian-gas-distribution-networks-and-consumers-risk>

Friends of the Earth, Melbourne 2023 'Community Gas Retirement Roadmap: How and why to get off gas in Victoria' https://www.melbournefoe.org.au/community_gas_retirement_roadmap

Electrification and Decarbonisation

The following resources provide further detail on how efficient electrification of Australian homes can contribute to our emissions reduction efforts and our climate commitments.

Climateworks Centre 2018 'Decarbonisation Futures: buildings'
<https://www.climateworkscentre.org/resource/decarbonisation-futures-buildings/>

Energy Efficiency Council 2023 'Clean Energy, Clean Demand: Enabling a zero emissions energy system with energy management, renewables and electrification'
<https://www.eec.org.au/policy-advocacy/publications/Clean-Energy-Clean-Demand-April-2023>

Funding & finance for efficient electrification

These resources provide further detail into potential avenues for funding and financing efficient electrification of Australian homes. Some of these resources provide specific policy advice on supporting low-income households.

Australian Sustainable Finance Institute 2023 'Industry Workshop: Finance for Home Retrofits'
<https://www.asfi.org.au/publications/industry-workshop-finance-home-retrofits-report>

Brotherhood of St Lawrence 2023, 'Enabling electrification: addressing the barriers to moving off gas faced by lower-income households' <https://www.bsl.org.au/research/publications/enabling-electrification/>

ACT Council of Social Services 2023 'Supporting a fair, fast and inclusive energy transition in the ACT' <https://actcoss.org.au/publication/supporting-a-fair-fast-and-inclusive-energy-transition-in-the-act-act-small-energy-consumers-understanding-planning-and-support-needs/>