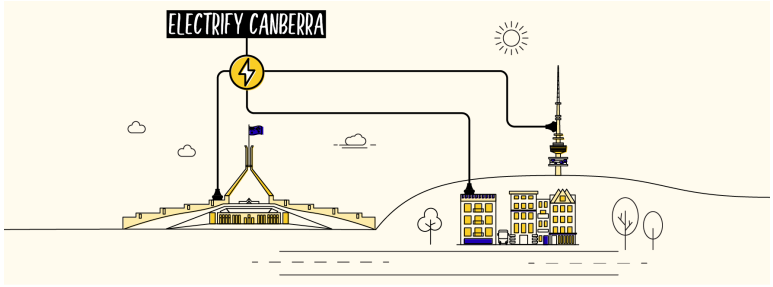

Electrify Canberra: Submission to the Senate Economics References Committee for inquiry into Residential Electrification

Electrify Canberra is a dedicated volunteer community group focussed on simplifying our neighbours' electrification journeys and accelerating the growth of all-electric suburbs across the ACT. Electrify Canberra is excited by the opportunity to comment on the Senate Inquiry into Residential Electrification.

We know that there is growing enthusiasm in our communities to electrify our homes as the quickest way to generate cost of living savings and to meaningfully reduce household emissions. We strongly encourage a phased, government-assisted and supported transition over a consumer-led approach that would be too slow and puts the onus on the individual to act over taking the systemic changes we know are vital.

Residential electrification brings challenges but incredible opportunities for our communities and our environment. As Rewiring Australia says: *"At a community level, this means less oil imported from overseas, thousands of jobs in installation and maintenance for the next decade, and millions in energy savings for homes, a lot of which will be spent in the local economy improving the community even more. It's a story of community economic abundance, and a once in a lifetime opportunity for Australia."*[1]

We know that there will be both immediate reductions in emissions and cost savings at a time when Australians are desperate for cost of living savings on their energy.

Gas and petrol home	Electrified home
Average running costs **$5,300 per year** $53,000 over 10 year lifetime of appliances	Average running costs **$1,850 per year** $18,500 over 10 year lifetime of appliances
Fossil fuel grid electricity Gas space heater Gas hot water heater Gas cooking Petrol and diesel cars	Rooftop solar & clean electricity Heat pump (reverse cycle AC) Heat pump hot water Induction cooking Electric cars
Energy emissions **9,550 kg** CO_2e per year	Energy emissions **ZERO**

[2]

[1] https://www.rewiringaustralia.org/
[2] https://www.rewiringaustralia.org/

We acknowledge the traditional custodians of the land we live on and pay respects to the Elders of the ACT region past and present.

The CSIRO has recently shown how much money we could be saving through electrification. They found that by 2030 each year households could be saving:

- $520 through energy efficiency measures
- $1,250 through solar and battery ownership
- $1,440 through electric vehicle ownership
- $290 through gas electrification

Electrification would lead to greater savings for Australians than the Government's promise to cut power bills for households by $275 a year by 2025.

Saul Griffith, Founder of Rewiring America, Rewiring Australia and creator of Suburb Zero says *"...subsidies to electrify households, small businesses and their vehicles will yield immediate decarbonisation."*[3]

Health benefits to electrification

As raised by Doctors for the Environment, we know that there is a strong correlation between in-home gas cooking and asthma, particularly for children. Lin et al. found in 2013 that children who grow up with a gas stove in their home kitchen *"are 42% more likely to experience asthma symptoms and 24% more likely to be diagnosed with asthma"*[4]

Electrifcation of homes and prioritising the removal of gas cooktops would have the additional health benefits and protection for children.

Systemic barriers to electrification

We agree with the Conservation Council's identification of following barriers:

- **Vested interests of fossil fuel gas suppliers**: greenwashing and obfuscation
- **Rental property tenants:** have no agency, while landlords face a perceived split-incentive
- **Supply chain issues**: ensuring supply of a variety of electric appliances to meet the needs of different kinds of households in different climate zones

[3] https://www.afr.com/policy/energy-and-climate/why-australia-must-pick-households-not-industry-to-hit-net-zero-20230906-p5e2le

[4] W Lin, B Brunekreef and U Gehring, 'Meta-analysis of the effects of indoor nitrogen dioxide and gas cooking on asthma and wheeze in children', International Journal of Epidemiology, 2013, 42(6):1724– 1737, doi:10.1093/ije/dyt150, p.1728; in Y Tan and B Jung, Decarbonising Homes: Improving Health

- **Complexity of multi-unit developments**, both technologically and administratively (for example decision-making and cost-sharing between all owners and residents)
- **Workforce readiness and skills**: professional development of existing related trades and career pathways for new tradespeople
- **Inertia of the housing ecosystem**: that professions providing advice to householders tend to repeat what they know (for example gas)[5]

Barriers to electrification:

- **Cost**: even households that have discretionary income are challenged in fully electrifying, mortgage rate increases and cost of living pressures are significant barriers. Many people are not able to prioritise electrifying their homes
- **Heritage restrictions:** For example the ACT Government refuses permission for panels to be placed on street-facing heritage roofs, even where there is no other place to put them
- **Approval Requirements:** certifiers have suggested there is an issue getting new houses with solar arrays on street-facing roofs approved; and other unnecessary requirements, like Development Approvals for solar panels for townhouses with adjoining walls
- **Misinformation:** fire risk of EVs in basements and insufficient information about how best to manage
- **Power imbalance:** Being a tenant or renter. Body Corporates and Owners preventing solar panels or reverse cycle units being placed on balconies/outside of buildings
- **Lack of awareness:** lack of awareness of health, cost, efficiency benefits of induction cooktops, for example
- **Confusion and overwhelm:** uncertainty about what to electrify first and how to approach it, who to trust to install; too much information for busy people
- **Mistrust:** often property managers are not trusted sources

Funding through the Energy Budget

Rewiring Australia recommends that Governments directly invests in the electrification of Australian households as they would invest in large-scale energy infrastructure. Rather than seeing household electrification programs as social support programs with rebates and loans, it should be funded from the energy budget, in partnership with electricity network operators and energy retailers.

[5] https://conservationcouncil.org.au/wp-content/uploads/SUBMISSION_CCACTR-ResidentialElectrification-Sep2023.pdf

Community-led approach

We strongly recommend a community-led rather than consumer-led approach; for this to be effective we need to understand the role of knowledge learning, peer influence, and social tipping points. We know that neighbours are a trusted source of information on electrifying homes from advice on appliances, to prioritization and where to start. When we connect neighbours, streets and suburbs we can capitalise on bulk-buy and bulk installation. We can connect with gas companies on disconnecting homes and during the process retrain and reskill workers.

People often have insufficient or outdated knowledge about electrification, for example: how technologies work, how they can save on their bills, and how they can contribute to net zero goals. This could be a barrier to people adopting new technologies. Education is important. Community Groups can take on this role in educating people - for example, addressing misunderstandings in electrification. We strongly recommend the continued support of not-for-profit organisations that are focussed on this activity, like Rewiring Australia and its network of Community Partners across Australia, including Electrify 2515 and Electrify Canberra, and, in the ACT, organisations like the Conservation Council's Make the Switch and SEEChange.

Peer influence can greatly encourage electrification uptake. This is particularly true when new social norms are established - people can feel their neighbours expect them to adopt new technologies as a member of a community. These peer influences can, and should be amplified in a community-led approach, such as providing more opportunities for peer communications. NGOs and other community organisations like Rewiring Australia Community Partners, including Electrify Canberra, could play a significant role in leading these activities; however, scaled influence can only be achieved if enough support from the government is provided at the initial stage.

Rapid transition is possible

The WA Town of Esperance transitioned off gas in 12 months, which included 400 residential and business customers. This was possible with a $10 million funding package, as many households had to buy new appliances and the government agreed to fund every affected customer with a like-for-like replacement.

CEO of Horizon Power, Stephanie Unwin, who managed the transition said:

"It was self-evident very quickly that it had to be one on one, personal [communication]. You've got to walk people through the process, and really engage really deeply, Education and trust was key."[6]

Upskilling Trades and Workforce

There are huge job opportunities in a transition to all electric homes and suburbs. This is a fantastic chance to upskill tradies and to train and employ tradies to quickly transition homes. We need Vocational Training centres to understand, train and assist with the transfer of knowledge, training and skills for a qualified and trusted workforce.

Esperance Experience

"Our customers made a lot of their decisions based on the information the local trades gave them. So a really important part was also helping those local trades be educated in these new things like heat pumps, and the induction cooktops."

Horizon coordinated all the trades, ensured they were fully qualified, completed the work to standard, and had all the necessary insurances, which minimised headaches for customers.

"We went to great lengths to make sure that we had local trades involved …. about 88% of the work went to local trades."

"You just cannot underestimate how important it is to engage really deeply with your community about why we need to change and what's involved in that change,"

"You do need an end date in order to help people through the transition, and you need a very clear process that has been funded."

"If you don't have those elements in place, I think it's going to be very difficult to get to a fully transitioned economy or a community."

Implementation key to success

Crucial to rapidly reducing energy costs and emissions is accelerating decarbonisation in all communities and sectors as quickly as possible. The success of residential electrification will depend on implementation: good engagement with critical stakeholders such as body corporates, real estate agents and property managers and retailers. Setting an end date for gas appliances, similar to the approach for petrol car sales, alongside drawing attention to the benefits of electric appliances will help with uptake and transition. Incentives are powerful and should also be made available.

[6] https://switchedon.reneweconomy.com.au/content/how-the-wa-town-of-esperance-transitioned-off-gas-in-just-12-months

Bring forward focus on apartments

We urge governments at state, territory and federal level to move more quickly to address the challenge of electrifying complex buildings. We know that this is critical for there to be a fair and equitable transition. We know that renters are likely to be the least able to transition to all-electric homes. We know that the next few years are absolutely critical in terms of emissions reductions and to ease the cost of living burden for Australians.

We know from research by ACTCOSS that only 22% of households surveyed in the ACT would be able to transition in the next 5-15 years without government assistance, and that the majority, 74%, would be more likely to transition with government support.[7]

Governments have the means, expertise and infrastructure to make transitions to electric easier for all households. The government should prioritise and invest directly in electrifying the homes of Canberra's vulnerable, low-income and social housing residents, particularly where the government is the landlord. We strongly recommend upgrades to all public and social housing, including energy efficiency measures such as draught proofing, insulation, alongside electrification.

Obligations on owners and landlords

The government will need to consider mandatory regulations for landlords to electrify their homes without disadvantaging renters. We support implementing stronger tenancy rights regarding efficient electric modifications and minimum standards. The government should also regulate to prevent new gas appliances from being installed in rental properties to avoid delay and personal views influencing the decisions to move away from gas. The gas abolishment fee for low-income households and community housing providers should be waived.

We would like to see the government require owners and landlords to electrify homes before they are sold or leased, the same with commercial properties. The emphasis should be on owners rather than tenants to electrify; we should not be expecting renters to advocate, given the power imbalance.

"Without a strong regulatory framework, renters have zero agency to compel landlords to upgrade their properties without risking their tenancy — this presents a real risk of

[7] P.2, https://actcoss.org.au/wp-content/uploads/2023/08/2023-Report-Supporting-a-fair-fast-and-inclusive-energy-transition-in-the-ACT.pdf

renters facing even greater and entrenching disadvantage compared to homeowners with the means to electrify."[8] - Conservation Council, ACT

We should also be mandating that apartment buildings fully-electrify rather than requiring the majority of residents to support electrification.

Retrofitting & Prioritising Sustainability Over Heritage

In the ACT, we have building regulations that mandate all-electric homes in new suburbs in the ACT and we need to have equivalent requirements in older suburbs where retrofitting is necessary. Building standards should be amended to require fully electric homes when renovating or when knocking down and rebuilding homes particularly. Owners need to be required to prioritise fully electrifying their homes and removing all gas appliances over nice-to-have features.

Keeping incentives to install solar

Ongoing support for solar installation from the ACT Sustainable Household Scheme is recommended. Household solar installation can be an enabler for electric vehicle uptake[9] [10] policy should reflect this joint-adoption effect. The current rooftop solar adoption rate in the ACT is about a quarter of existing houses. This is below the typical tipping point (or critical mass) of new technology adoption, which is 30–40% of the population[11] [12]. After reaching the tipping point, the adoption would be self-sustaining. Policy support is critical to enabling early adopters to reach critical mass.

Incentives to move off wood-burners and gas

Government policies could align to incentivise those needing to transition off woodburners and gas to participate in fully electrifying their homes.

Including all forms of electric transport

Transport accounts for 60% of the ACT emissions and needs to be addressed faster. It is important that there is a focus on encouraging all forms of electric transport - scooters, motorbikes, bicycles and improving access to public transport.

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[8] https://conservationcouncil.org.au/wp-content/uploads/SUBMISSION_CCACTR-IntegratedEnergyPlan-Sep2023.pdf

[9] Wen, L., Sheng M.S., Sharp B. et al. 2023. Exploration of the nexus between solar potential and electric vehicle uptake: A case study of Auckland, New Zealand. Energy Policy, 173, 113406.

[10] Kaufmann, R.K., Newberry, D., Xin, C. et al. 2021. Feedbacks among electric vehicle adoption, charging, and the cost and installation of rooftop solar photovoltaics.Nature Energy, 6, 143–149.

[11] Peng Y., Bai, X. 2023. Peer Effect and Perceived Social Tipping Point of Ev Adoption. *SSRN*, 4459205.

[12] Rogers, E.M. 2010. Diffusion of Innovations. Simon and Schuster.

The current zero-interest loan of $15,000 may be too small for EV adoption, especially to encourage hesitant potential consumers to take action. There is a possibility that free-riders (who plan to buy an EV anyway) will take the benefit of the loan, while the goal of the policy incentives should achieve a maximum marginal effect to leverage people's interests and actions. It is important that loans include electric bikes, scooters and motorbikes to incentivise active travel.

Trade in petrol car scheme for vulnerable households

We strongly support the Government developing a scheme for vulnerable households as suggested by the Conservation Council where people can trade in their petrol vehicles for EVs from Government and corporate fleets as they turn over, rather than selling ex-fleet EVs into the open market. This would effectively reduce emissions in the transport sector and address social inequity.

Recommendations:

We need to strongly encourage those that can electrify their homes to do so, by making the process simple and cost-effective. For those that cannot, those in social housing, government housing and apartments, government support is necessary. The government should seek to bring in minimum energy efficiency standards and prioritise the electrification of buildings where they are landlords, focusing on removing gas cooktops and gas heating.

- Introduce a community-led 'one-stop shop' approach, adopt successful models like BlocPower in the US, Tripple who undertook the Wilam Ngarrang Retrofit in Melbourne and the Esperance transition off gas led by Horizon Power
- Remove barriers to electrification for homeowners (Heritage restrictions preventing electrification and installation for solar panels and Development Approvals for townhouses)
- Concessional finance is still very challenging for households, even where it is zero interest. We strongly recommend government/private partnerships to pay the up-front transition costs and then recoup through rates and/or energy bills or through a HECS-type arrangement
- Finance and partner with Rewiring Australia and its Community Partners to help engage communities and to educate and dispel myths around electrification and to actively promote the economic, health and environmental benefits
- Prioritise removal of gas cooktops given the links to asthma for children and similarly for wood burners
- Identify a suburb zero community in every electorate, (Brighte can be a partner), who are prepared to self-fund if support is provided. If payment can be made seamless and invisible, households will be more likely to electrify
- Run "Suburb Zero" style pilots for apartment buildings to work out the many people and technical issues.
- Continue to promote the uptake of solar, with government assistance where otherwise it would not be possible
- Encourage the full range of electric vehicles under subsidies and loans offered

- Encourage the second hand EV market to be available for trade-in of petrol cars by low-income and vulnerable households
- Mandate minimum energy efficiency standards for all homes, that must be met before being leased or sold
- Mandate that gas appliances cannot be installed in properties from a certain date and an end date for transitioning off gas appliances.