CONSERVATION COUNCIL ACT REGION

Submission to Senate Standing Committee on Economics

Residential electrification

September 2023

The Conservation Council ACT Region is the peak non-government environment organisation for the Canberra region. Since 1981, we have spoken up for a healthy environment and a sustainable future for our region. We harness the collective energy, expertise and experience of our more than 40 member groups to promote sound policy and action on the environment.

We campaign for a safe climate, to protect biodiversity in our urban and natural areas, to protect and enhance our waterways, reduce waste, and promote sustainable transport and planning for our city. Working in the ACT and region to influence governments and build widespread support within the community and business, we put forward evidence-based solutions and innovative ideas for how we can live sustainably.

At a time when we need to reimagine a better future, we understand that the changes we need will only happen with the collective support of our community.

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Introduction

The Conservation Council ACT Region welcomes the opportunity to provide input to the Senate Standing Committee on Economics regarding household electrification.

The Council fully supports the ACT Government's world-leading policy to phase out fossil gas and agrees that the task is "complex but doable". This ambition needs to be scaled up to the national level, with coordination and consistency between States to provide a clear pathway and equitable outcomes for Australian households.

The pace of implementation must be commensurate with the urgency of the climate crisis.

The Synthesis Report of the IPCC's Sixth Assessment Report (AR6-SYR) released in March 2023 is unequivocal in its statements about the urgency required in global emissions reductions.

> *"Keeping warming to 1.5°C above pre-industrial levels requires deep, rapid and sustained greenhouse gas emissions reductions in all sectors. Emissions should be decreasing by now and will need to be **cut by almost half by 2030**, if warming is to be limited to 1.5°C."*[1]

Electrification of free-standing households is technologically feasible and, combined with further installation of rooftop solar photovoltaic and battery systems, could achieve rapid reductions in greenhouse gas emissions as well as improving energy security and relieving energy costs for Australians.

The Conservation Council recommends that the Australian Government invest directly in electrifying Australian households, for a complete phase-out of fossil gas from all buildings by 2045, with interim targets for buildings of increasing complexity.

Terms of reference

Australia's residential electrification efforts, with particular reference to:

(a) the economic opportunities of household electrification, including but not limited to:

(i) long-term reduction of energy price inflation,

(ii) long-term employment opportunities, and

(iii) the scaling up of domestic capacity;

Economic opportunities for households

Energy prices only ever seem to go up along with the total cost of living. Low-income households that cannot afford to upgrade their home's energy efficiency end up paying disproportionately more for energy, keeping them in a vicious cycle of energy poverty. Paying for

[1] IPCC, 2023, 'Urgent climate action can secure a liveable future for all', Press release, 20 March, https://www.ipcc.ch/report/ar6/syr/downloads/press/IPCC_AR6_SYR_PressRelease_en.pdf

both electricity and gas is an unnecessary duplication of energy supply costs when electric appliances can do everything that gas does.

Modern electric appliances are significantly more efficient and cheaper to run than gas appliances. Thus replacing gas appliances with efficient electric alternatives significantly reduces total energy consumption and energy bills, with cost savings of around $9000 over 10 years for an average household. Taking electrification a step further, Australian families could be saving up to $5,000 per year by replacing their current cars with electric vehicles, switching gas to electric, and creating their own electricity with rooftop solar.[2] This would free-up a meaningful portion of a household's budget for other activities.

Electrifying households would relieve energy poverty as well as demand on the national electricity grid.

Economic opportunities for society

With more than 130,000 households connected to gas in the ACT alone, electrification provides enormous long-term employment opportunities. There is a huge task ahead over the next two to three decades to retrofit existing buildings, requiring a significant workforce of electricians and associated skilled workers. The national electricity grid will also need to be upgraded for the evolving uptake of distributed generation and storage and electric vehicles.

The federal government should end all forms of subsidies granted to the fossil fuel industry and redirect this money to electrification of buildings and transport, the replacement of fossil fuels with renewable energy in the electricity grid, and the retraining of the fossil fuel workforce into electrification trades. This would be an effective means to purchase actual emissions reductions and transition our society to a low-emissions future.

(b) the macro-barriers to increasing the uptake of home electrification;

Macro barriers include:

- Supply chain issues – ie ensuring supply of a variety of electric appliances to meet the needs of different kinds of households in different climate zones (eg apartments in Queensland vs free-standing houses in alpine Victoria)
- Workforce readiness and skills – professional development of existing related trades and career pathways for new tradespeople
- Vested interests of fossil fuel gas suppliers – greenwashing and obfuscation
- Rental property tenants have no agency, while landlords face a perceived split-incentive
- Inertia of the housing ecosystem – that professions providing advice to householders tend to repeat what they know (ie gas)
- Complexity of multi-unit developments, both technologically and administratively (ie decision-making and cost-sharing between all owners and residents)

In the Conservation Council's experience, some of the micro barriers to electrification include (in no particular order):

- Lack of understanding or familiarity of electric technologies and their benefits
- Cost of purchase and installation of electric technologies

[2] Rewiring Australia, 2022, Castles & cars: Savings in the suburbs through electrifying everything - Discussion paper, https://global-uploads.webflow.com/612b0b172765f9c62c1c20c9/615a513770739cc6477e67f4_Castles%20and%20Cars%20Rewiring%20Australia%20Discussion%20Paper.pdf

- The process of electrification being too complex, time-consuming, or cognitively overwhelming for many people to contemplate
- Physical challenges such as lack of space for electric appliances, concerns about noise impacts from heat pumps on self or neighbours
- Poor or outdated advice from tradespeople
- Being a tenant in rental or public housing
- Living in an apartment
- Lack of confidence in Government policy
- Climate scepticism
- Concern about total life cycle environmental or emissions impacts of disposing of functioning gas appliances and replacing with newly manufactured electric appliances
- Not expecting to or not knowing whether they will continue to live in their current home (and so not recoup the upfront costs) deters investment
- Lack of availability of a variety low-cost electric vehicles

(c) the total upfront cost and longer-term benefits of household electrification and alternative models for funding and implementation;

There are clear economic benefits for households from savings on the running costs of efficient electric appliances vs gas appliances and elimination of gas supply charges, but upfront costs of installation present a significant barrier for low-income households, renters and apartment residents. Other benefits of electrification include preventative health and safety at individual and public health levels, plus environmental benefits of reducing demand for fossil fuels.

Most electrification schemes to date are providing some form of rebate (eg the ACT's Home Energy Support Program[3]) or zero-interest loan (eg the ACT's Sustainable Household Scheme[4]). However, these schemes still place the cost burden on households and leave the upfront costs of electrification unaffordable for many households despite the eventual return on investment through efficiency savings.

Rewiring Australia recommends that Governments directly invest in electrification of Australian households like they invest in large-scale energy infrastructure. Instead of thinking about household electrification programs as social support programs with rebates and loans, it could be funded from the energy budget, in partnership with electricity network operators and energy retailers.

There are genuine benefits to the electricity network from installing rooftop PV panels and batteries with smart metres, replacing gas and old electric appliances with new efficient electric technologies, and improving home energy efficiency. A direct investment approach would effectively purchase real emissions reductions while delivering significant social and preventative health benefits for Australia's most disadvantaged residents. Governments could achieve efficiencies of scale and drive supply chains by systematically electrifying. Installing decentralised/distributed energy generation through household rooftop solar, smart battery

[3] ACT Government Home Energy Support Program, https://www.climatechoices.act.gov.au/policy-programs/home-energy-support-rebates-for-homeowners
[4] ACT Government Sustainable Household Scheme, https://www.climatechoices.act.gov.au/policy-programs/sustainable-household-scheme

systems and EV charging would reduce the investment required in large-scale electricity generation and storage while simultaneously building resilience at the community level.

Suburb Zero aims to electrify a range of building types in our communities through a suburb-wide, full household electrification pilot. A trial for 1,000 homes, in the ACT has been costed by the Parliamentary Budget Office at $11.3 million over the forward estimates). The pilot would focus on electrifying six areas of household electrification: hot water, heating/ cooling, rooftop solar, cooking, battery storage, and transport. These are areas where pieces of equipment would be installed, converted to electric or upgraded to be more efficient. Federal funding would allow the program to be heavily subsidised to make it compelling and affordable for as many households as possible.

(d) the marginal cost of abatement for household electrification compared to alternative sectors and options to decarbonise the economy;

Australia's 10 million households are responsible for the largest portion (~42%) of our domestic emissions, with 33.5% attributed to home energy and personal vehicle usage.[5] We cannot eliminate ongoing emissions from buildings without electrifying gas appliances. Electrification must happen simultaneously with displacing fossil fuels from the national electricity network.

Electrifying free-standing homes is technologically achievable and could be done quickly with purposeful investment and regulation by governments.

Businesses and industry should be largely responsible for their own electrification costs. While the Conservation Council appreciates that a significant portion of Australia's business are family-owned small businesses operating on small margins, appliance fit-outs and energy consumption are simply a cost of doing business and already eligible for capital expenditure tax deductions. Upfront costs of electrification might be significant, but the business will immediately begin to recoup those costs in savings due to greater energy efficiency as well as a range of other benefits such as improved safety, noise reduction, cooler kitchens, cleaner indoor air quality and so on. And, as consumers well know, businesses will simply pass on the costs to their customers.

Although it might sound harsh, businesses (and society at large) have benefitted from cheap fossil fuels for more than 200 years at the expense of the planet (and usually its most disadvantaged people). It is well past time that businesses internalise and pay the true cost of their impacts on the climate and the environment, and this includes absorbing the cost of electrification. If a business cannot operate sustainably without fossil fuels, maybe it should cease to exist.

Thus, the Council would support the Government facilitating loans to businesses to assist with upfront costs of electrification, but these should be on a cost-recovery basis, not zero interest or other direct subsidies. Commercial banks should be willing to do the same.

[5] Rewiring Australia, 2022, Castles & cars: Savings in the suburbs through electrifying everything - Discussion paper, https://global-uploads.webflow.com/612b0b172765f9c62c1c20c9/615a513770739cc6477e67f4_Castles%20and%20Cars%20Rewiring%20Australia%20Discussion%20Paper.pdf

(e) the optimal timeline for household electrification accounting for the likely timing of decarbonising electricity;

Roughly a quarter of Australian households have rooftop solar PV systems – getting all of these households off gas within the next few years would immediately reduce household emissions.

Free-standing households are technologically easy to switch so a concerted effort to electrify all simple dwellings by 2023 could achieve rapid emissions reductions whilst Governments, the property sector and industry tackle the planning for the more complex transitions to tackle in the 2030s.

Governments must prioritise transitioning social housing, low-income households, vulnerable households and rental properties to ensure these people are not further disadvantaged by being left behind on gas networks.

(f) the impacts and opportunities of household electrification for domestic energy security, household energy independence and for balance of international trade;

Australia exports the vast majority of its gas. If the Government was genuinely concerned about domestic energy security, it could restrict exports and redirect them to domestic consumption. It would be concerning to see the Government allow the opposite to happen, that is, freeing up gas from households then redirecting it to export markets. The point of electrification is to reduce global emissions, so household electrification must also be accompanied by cessation of all fossil fuel extraction and consumption, not shifting it from Australia to overseas households.

With an abundance of solar energy, electrification is an easy pathway to domestic energy security as well as energy resilience for individual households.

(g) the impacts of household electrification on reducing household energy spending and energy inflation as a component of the consumer price index;

Electrification with rooftop solar would end the vicious cycle of high energy costs contributing to high cost of living, and free-up household budgets for spending on other activities.

(h) solutions to the economic barriers to electrification for low-income households;

Direct investment from the energy budget – Governments should systematically pay for low-income households to electrify and install rooftop solar and battery systems. This would directly purchase distributed energy and storage as well as emissions reductions whilst reducing the need for investment in large-scale generation and storage projects.

(i) the effectiveness of existing Australian Federal, state and local government initiatives to promote and provide market incentives for household electrification;

Australia's residential gas networks are predominantly owned by foreign investors and fossil fuel companies who will continue to advocate for their own interests, not those of Australian families. Energy retailers continue to advertise and incentivise connection to and consumption of gas for

their own profits. Appliance manufacturers and retailers will likewise continue to produce and sell gas appliances for as long as they can do so profitably. Distributed electricity is more complex and less profitable, plus network operators want to continue to make use of infrastructure “assets”, so there is little incentive for them to push for electrification. Additionally, the entire energy support system is bogged down by the inertia of all associated tradespeople continuing to do what they know, ie install gas.

Government policies, regulation and direct investment are required to correct this market failure in favour of electrification. Governments need to end the distorting factor of all forms of subsidies for fossil fuels, and enact an effective price on carbon pollution as well as including climate change considerations in environment and development laws. All of this would significantly drive electrification of buildings and transport.

(j) Australia’s current standing against international standards, particularly with respect to the uptake of rooftop solar, batteries and electric household appliances; and

Australia’s utterly inadequate action to address climate change is well documented. Systemic electrification is an opportunity for the Government to take meaningful action to steer Australian buildings towards a zero-emissions future.

Australia has a high incidence of rooftop solar, but there remains enormous potential for further uptake.

A national policy and targets for electrification would help drive investment in manufacturing and supply chains.

(k) any other matters.

The Senate Committee can find additional detail about electrification in the Conservation Council’s submission to the ACT Government about its recent Integrated Energy Plan Position Paper.[6]

[6] Conservation Council ACT Region, 2023, Submission to ACT Government re Integrated Energy Plan Position Paper, https://conservationcouncil.org.au/wp-content/uploads/SUBMISSION_CCACTR-IntegratedEnergyPlan-Sep2023.pdf