



Inquiry into Residential Electrification

Senate Standing Committees on Economics

Asthma Australia Submission, September 2023

ABOUT ASTHMA AUSTRALIA

Asthma Australia is a for-purpose, consumer organisation that has been improving the lives of people with asthma since 1962. Asthma affects one in nine Australians or 2.7 million people. Asthma is an inflammatory condition of the airways, restricting airflow and can be fatal. There is no cure, but most people with asthma can experience good control.

Our purpose is to help people breathe better so they can live freely. We deliver evidence-based prevention and health strategies to more than half a million people each year. Asthma Australia has an ambitious goal to halve avoidable hospital presentations for asthma by 2030, with an initial focus on reducing preventable hospitalisations in children aged 5-9.

ASTHMA IN AUSTRALIA

As a chronic condition, asthma places a significant burden on the daily lives of people with asthma and their families, as well as the Australia's health care system and resources:

- One in nine (11%) or 2.7 million people have asthma in Australia.¹
- In 2022, asthma was the 8th leading contributor to the overall burden of disease in Australia, having risen from 10th place in 2003.²
- Asthma is the leading cause of burden of disease for people aged 5–14 years.
- In 2021-22, there were 25,480 hospitalisations for asthma, of which 90% were considered potentially preventable.³
- Children are much more likely than adults to be hospitalised for asthma, with over 17,000 children with asthma hospitalised in 2022.⁴
- Approximately 400 people die each year in Australia due to asthma⁵ and there were 351 deaths due to asthma in 2021.⁶
- A 2015 report, the Hidden Cost of Asthma, found asthma cost the healthcare system \$1.2 billion, lost productivity due to asthma cost \$1.1 billion, and the burden of disease amounted to a cost of \$24.7 billion.⁷

OUR SUBMISSION

Asthma Australia welcomes the opportunity to provide our response to the inquiry into residential electrification. Housing is a key social determinant of health and particularly important for people with asthma as housing conditions influence an individual's asthma symptom control and risk of developing asthma. The type of energy used in homes contributes to the health of the indoor environment. **Gas and wood energy used in residential appliances emit harmful pollutants that can trigger asthma symptoms and its development as well as cause other serious health conditions.**

Conversely, electricity powered homes can help improve both indoor and outdoor air quality (the latter particularly when using electricity sourced from renewable energy), contribute to climate change mitigation, and have higher energy efficiency and reduced consumer costs than either gas or wood.⁸

As climate change progresses, and extreme weather events increasingly drive people to seek refuge in their homes, housing conditions and the absence or removal of internal health triggers become ever more important. For these reasons, **Asthma Australia strongly supports a transition to residential electrification across Australia**, and particularly one powered by renewable energy with adequate support for households on low incomes. Further, while the harms of gas energy are becoming increasingly well known, it is critical that people do not replace gas heaters with wood heaters as this move risks increasing pollution and damaging health. **Residential electrification must therefore include removing both gas and wood energy from our homes.**

In this submission, we briefly set out how gas cooktops and gas and wood heaters affect air quality and human health and why such appliances need to be phased out. We provide insights into some of the barriers consumers face when seeking to switch to healthier sources of energy using consumer research we conducted in 2022. We also provide recommendations for overcoming economic barriers to electrification, particularly for low-income households. We present our submission on household energy and health under 'any other matters' in the Inquiry's Terms of Reference.

HOUSEHOLD ENERGY AND HEALTH

Australian homes are not healthy places for everyone, particularly for the one in nine people with asthma or one in five people with allergies. Asthma is a chronic health condition that is heavily influenced by environmental conditions: it can be both caused, and exacerbated by, exposure to environmental triggers.

In 2022, Asthma Australia conducted a nationally representative survey of 5,041 people on homes, health and asthma (the full report can be accessed [here](#)). Three in ten respondents with asthma or allergies reported that their symptoms were worse after spending time in the home. Many respondents reported being exposed to a range of asthma triggers in their home, with 48% of respondents using a gas cooktop, 7% of respondents using unflued gas heating and 13% of respondents using wood heaters. To make homes healthier, Australian governments must move towards residential electrification, which requires: 1) phasing out wood heaters in residential areas, as well as 2) transitioning away from gas appliances.

1. PHASING OUT WOOD HEATERS IN RESIDENTIAL AREAS

Wood heater smoke is the largest source of winter air pollution in many locations, including Sydney, Canberra and Tasmania, despite being used by a small minority of households.⁹ Pollution from wood heaters contains harmful pollutants such as fine particulate matter (PM_{2.5}) and known carcinogens. There is no 'safe' level of air pollution and detrimental health effects can occur even at low levels of pollution, well below air pollution standards.¹⁰ Wood heater smoke is a serious risk factor for asthma, both in terms of developing asthma and triggering symptoms in people who already have asthma.¹¹ It is also a risk factor for other respiratory diseases, certain cancers, cardiovascular disease, neurological disease, premature birth and premature death.¹² Researchers from the University of Tasmania have estimated that more people die from wood heater smoke in Tasmania than bushfire smoke.¹³

These health impacts are the result of relatively low levels of wood heater use, with 7% of people using a wood heater as their main source of heating nationally and up to 13% using them in cooler jurisdictions (e.g. Tasmania).¹⁴ Despite low use, wood heaters result in high economic costs, estimated annually in excess of \$3,800 per wood heater.¹⁵ In Tasmania alone, the average yearly health cost of wood heater smoke is an estimated \$293 million (compared to \$16 million from smoke from bushfires and hazard reduction burns combined).¹⁶

In 2020, Asthma Australia commissioned a representative survey of 25,039 people, which found that people exposed to wood heater smoke are largely unable to protect themselves against its impacts.¹⁷ Further, the survey found the majority of people support regulation to reduce the impact of wood heaters, with stronger support among people with asthma.

Reducing wood heaters: Tasmanian case study

Tasmania has had notable success in the past of reducing the number of wood heaters and their related emissions. In 2001, Launceston became the focus of strategies aiming to reduce wood heater pollution. At the time, two-thirds of households in Launceston had a wood heater. Following a program of interventions, which included a buyback scheme, wood heater prevalence had been reduced to 30% by 2004.

Researchers studying the impact of these interventions measured air pollution before and after them and found a significant decrease in annual coarse particulate matter (PM₁₀) pollution and an even greater decrease in winter air pollution levels.¹⁸ This was associated with a reduction in cardiovascular and respiratory mortality for males during winter months.

Following a report by the Australian Capital Territory's Office of the Commissioner for Sustainability and the Environment on wood heater policy in the ACT¹⁹ that found that wood heaters have the greatest impact on the ACT's air quality, the ACT Government recently announced plans to phase out wood heaters by 2045 as a key step in its 'pathway to electrification'.²⁰ While the timeframe should be more ambitious, Asthma Australia welcomes this announcement and **asks that all Australian governments follow the ACT's example to phase out wood heaters in residential areas.** In addition, and as the ACT Government has acknowledged, this transition must ensure that low-income households are financially supported to replace wood heaters with efficient reverse cycle air conditioning systems.

2. TRANSITIONING AWAY FROM THE USE OF GAS APPLIANCES FOR HEATING AND COOKING

Cooking with gas is a significant source of household air pollution. Gas cooktops produce a variety of air pollutants, including fine particulate matter, nitrogen dioxide, carbon monoxide, and formaldehyde. Similarly, gas heaters produce a variety of harmful air pollutants, and unflued gas heaters are particularly dangerous because these pollutants remain inside the home rather than being vented outside. Exposure to the pollutants produced by gas cooktops and heaters can trigger asthma flare-ups and contribute to the development of asthma. Cooking with gas is estimated to be responsible for up to 12% of the childhood asthma burden in Australia.²¹

Gas appliances in Australian homes

Asthma Australia's 2022 nationally representative survey on homes, health and asthma in Australia was completed by 5,041 people nation-wide.²² The survey asked participants about their current practices and preferences for heating their homes and cooking.

The preferred types of heating were reverse cycle air conditioning and central heating: more efficient options. However, nearly half (43%) of respondents reported that they do not currently have their preferred form of heating at home. One in five respondents (22%) regularly use portable electric space heaters, 13% regularly use wood heaters, 8% regularly use flued gas heaters and 7% regularly use unflued gas heaters. For people who do not have their preferred source of heating, the most common barrier to switching is cost (43%), followed by not owning the home (32%).

The most common, and preferred, type of cooktop was gas (48%) with people stating that they liked to cook on gas, followed by electric (41%), being commonly preferred as they are easier to clean than gas cooktops. Cooktop preferences made on the basis of health and the environment considerations were low, suggesting a need to raise awareness around the potential health impacts of gas cooktops. The most common barrier to switching cooktop was cost (43%), again followed by not owning the home (35%).

Transitioning away from gas appliances in Australian homes to efficient, electric appliances would improve air quality and health outcomes, as well as reduce greenhouse gas emissions. However, people on low incomes, will need financial support to transition away from gas. People who rent their homes from private owners or social housing providers will also need support to transition from gas appliances to healthier forms of heating and cooling. Supporting home electrification will provide additional benefits through reducing power bills.

BARRIERS TO IMPROVING HOME HEALTH

In response to our 2022 survey on homes, health and asthma, **13% of people living in social housing and 9% of renters** said they were not happy with the air quality inside their home, compared to 4% of homeowners. Similarly, **16% of people living in social housing and 17% of renters** said they are not confident to make changes to improve the air quality inside their home, compared to 9% of homeowners.

In addition, the following population groups who are **more vulnerable to the effects of triggers in our homes, such as gas and wood fuelled appliances**, and/or have greater likelihood of having asthma or developing it, were also more likely to report **greater exposure to these triggers** in their homes than other respondent groups: people with asthma and allergies, people with children, people living in social housing and Aboriginal and Torres Strait Islanders.

Many respondents reported the following barriers to reducing health triggers in their homes.

- **Lack of autonomy over property**

Half of respondents who **rent or live in social housing** reported they were unable to make changes to protect themselves from triggers **because they do not own their home**. People described frustration with their landlord's/provider's lack of action, and concern about requesting action in case they increased rent or evicted them in today's highly competitive housing market. Some of their comments include:

I live in a rental house during a rental crisis so I do not want to do anything that will make the real estate want to remove me from the property.

I would like things done but [am] afraid the owner will put up the rent...

Because I rent getting anything done requires getting permission first, which then takes a long time, as the landlord doesn't get things done quickly, if at all, and is VERY tight with her money, and being on a disability pension makes it nigh on impossible to afford anything myself, so I just have to make do, with everything that happens, even more so now, with the way the rental market is.

I am in a government property. I am not allowed to install things into the property and have to get approval. My requests have been declined because it is seen as not required/unnecessary...

- **Cost**

Among respondents who did not have their preferred heating or cooktop type, 47% said cost was a barrier to changing to their preferred type. This is despite the fact that gas and wood heating and gas cooktops are typically more expensive to run than electric appliances.

- **Lack of concern or knowledge**

Some 38% of people stated that they were not concerned about addressing at least one of the triggers, and 18% of respondents reported that they do not know what to do to protect themselves against at least one of the triggers.

Certain population groups, including Aboriginal and Torres Strait Islanders and people from low socioeconomic households who have higher prevalence of asthma and asthma mortality than other population groups,²³ were also more likely to report having triggers in the home and more likely to report barriers to taking action to reduce triggers. These groups also included people renting, living in social housing and people with asthma and allergies.

RECOMMENDATIONS

Australian homes should be safe, healthy places, free from harmful substances. This means they should be free from wood- and gas-fuelled appliances and instead powered by efficient and renewable electricity sources. The transition to renewably sourced electricity will improve indoor and outdoor air quality, reduce carbon emissions and their detrimental impact on human health and the environment, and help alleviate cost of living pressures. Asthma Australia therefore strongly supports residential electrification, alongside a range of additional support packages to maximise home health and energy efficiency and to enable low-income households to transition to healthier homes.

Below, Asthma Australia provides recommendations on how the Australian Government can help steer Australia's transition to residential electrification and away from wood heater and gas appliance use. Many of these actions will also future-proof homes against climate change and its compounding, detrimental effect on home health.

Recommendation 1: That the Australian Government leads and coordinates a nationally consistent approach to the phasing out of wood heaters in residential areas by:

- Ensuring that the replacement of wood heaters is included in packages to support the electrification of homes.
- Including the phasing out of wood heaters as a priority in the next National Clean Air Agreement work plan.
- Educating households about the health impacts of using wood heaters.

Recommendation 2: That the Australian Government leads and coordinates a nationally consistent approach to all Australian households switching from gas to electricity as soon as possible, including by:

- Ensuring that gas appliances and their emissions are considered in the development of national indoor air quality standards, which should be prioritised in the next National Clean Air Agreement work plan.
- Educating households about the health impacts of using gas appliances in the home.

Recommendation 3: That the Australian Government enhance design and construction standards to ensure *all* new homes are 'healthy homes' and resilient to the challenges of climate change. Improved standards should include:

- The electrification of all energy sources for cooking, cooling and heating,
- Increased thermal efficiency, ventilation and air tightness to improve indoor air quality, and
- The installation of solar power and batteries.

Recommendation 4: That the Australian Government develop incentives for landlords to improve the health of private rental homes without disadvantaging current or future tenants.

Incentives should help landlords to:

- Electrify their properties,
- Improve thermal efficiency, ventilation and air tightness, and
- Install solar power and batteries.

Recommendation 5: That the Australian Government provide funding to states and territories to make sustainable improvements to the health of the existing social housing stock.

Improvements should include the:

- Electrification of properties,
- Improvement of thermal efficiency, ventilation and air tightness, and
- Installation of solar power and batteries.

Recommendation 6: That the Australian Government support low-income households to improve home health by providing financial support to:

- Switch from gas and wood heating and gas cooking appliances to efficient, electric home heating, cooling and cooking, such as reverse cycle air conditioning and induction cooktops,
- Increase thermal efficiency, ventilation and air tightness to improve indoor air quality,
- Install solar power and batteries, and
- Purchase and operate HEPA air purifiers to improve indoor air quality.

Asthma Australia welcomes being contacted by the Committee for any further contributions to this important inquiry.

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