Asthma and Gas-free new homes for Lake Mac

1 July 2026

What is asthma?

Asthma is a long-term condition that affects the lungs. It happens when the airways become inflamed and narrow, making it harder to breathe. People with asthma can experience wheezing, coughing, breathlessness and a feeling of tightness in the chest.[1]

Asthma affects people of all ages and can be well managed with the right care, but there's currently no cure.

How common is asthma in Australia?

Asthma is very common in Australia — in fact, we have some of the highest rates in the world.

- **1 in 9 Australians** (about **2.7 million people**) live with asthma (up to 1 in 7 over the age of 65).
- In **2024, 478 Australians died** from asthma.[2]
- Asthma was the **8th leading cause of disease burden** in Australia that year.[3]

Asthma in children

Asthma is the **most common long-term health condition in children worldwide**[4], and Australia is no exception.

- **1 in 10 Australian children** has asthma.[5]
- It was the **most commonly reported long-term condition** in children aged 0–14 in 2017–18.

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[1] Australian Bureau of Statistics. (2022). Asthma. Canberra, ACT: ABS. www.abs.gov.au/statistics/health/health-conditions-and-risks/asthma/latest-release
[2]Asthma Australia. (n.d.). Asthma Basic Facts. Retrieved 26/06/2026. https://asthma.org.au/resources/
[3] AIHW. (2024). Australian Burden of Disease Study 2024. Interactive data on disease burden. https://www.aihw.gov.au/reports/burden-of-disease/australian-burden-of-disease-study-2024/contents/interactive-data-on-disease-burden
[4] World Health Organisation. (2026). Asthma. https://www.who.int/news-room/fact-sheets/detail/asthma
[5] Australian Institute of Health and Welfare (AIHW). (2020). Australia's children. Cat. no. CWS 69. Canberra: AIHW. https://www.aihw.gov.au/reports/children-youth/australias-children/contents/health/asthma-prevalence-children

- In 2024, asthma was the **leading cause of disease burden for Australian children aged 1–9**.[6]
    - It affects children's daily life, learning, and participation in sport and play.
    - It's a major reason for **hospital visits, school absences, and family stress**.
    - **43% of all asthma hospitalisations** in 2024 were for children aged 0–14.

Asthma doesn't affect all children equally:

- Children with disability have **twice the rate** of asthma (18%) compared with children without disability (8.9%).
- Rates are higher in **lower-income households** (12%) than in higher-income households (8.4%).
- Children in **single-parent families** are more likely to have asthma (13% vs 9.4%).
- **Indigenous children** have significantly higher rates (15% compared with 9.3% for non-Indigenous children).
    - A recent survey also found **12.1% of Indigenous children** had asthma.[7]

Asthma in Lake Macquarie

Asthma is even more common locally.

- In the Lake Macquarie LGA, **17.2% of children aged 2–14** have asthma.
- That's much higher than the Australian average (10%) and the NSW average (13%).[8]

NO_2 and gas stoves — what's going on?

When we burn gas (methane) for cooking or heating, the flame doesn't just make heat — it also creates pollution. The high temperature of the flame turns nitrogen in the air into **nitrogen dioxide (NO_2)** and **nitric oxide (NO)**. Together, these are called **NOx**.

Gas flames also release other harmful pollutants like **formaldehyde**, **carbon monoxide**, **benzene** and **fine particles** (PM2.5) that can get deep into the lungs.[9] [10]

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[6] . AIHW. (2024). Australian Burden of Disease Study 2024 [Internet, cited 2025 Nov 25]. www.aihw.gov.au/reports/burden-of-disease/australian-burden-of-disease-study-2024

[7] ABS. (2024). National Aboriginal and Torres Strait Islander Health Survey, 2022-23. https://www.abs.gov.au/statistics/people/aboriginal-and-torres-strait-islander-peoples/national-aboriginal-and-torres-strait-islander-health-survey/2022-23

[8] Ewald, B., Knibbs, L., & Marks, G. (2021). Opportunity to reduce paediatric asthma in New South Wales through nitrogen dioxide control. *Australian and New Zealand Journal of Public Health*, *45*(4), 400–402. https://doi.org/10.1111/1753-6405.13111

[9] Ewald, B., Crisp, G., & Carey, M. (2022). Health risks from indoor gas appliances. *Australian Journal of General Practice*, *51*(12), 935–938. https://doi.org/10.31128/AJGP-08-22-6535

[10] Kashtan, Y. S., Nicholson, M., Finnegan, C., Ouyang, Z., Lebel, E. D., Michanowicz, D. R., Shonkoff, S. B. C., & Jackson, R. B. (2023). Gas and Propane Combustion from Stoves Emits Benzene and Increases Indoor Air Pollution. *Environmental Science & Technology*, *57*(26), 9653–9663. https://doi.org/10.1021/acs.est.2c09289

Why NO_2 matters

NO_2 is a strong irritant gas. When we breathe it in, it dissolves into the lining of our airways and causes inflammation and tightening of the air passages. This is especially harmful for children, whose lungs are still developing. NO_2 exposure can also make kids more sensitive to allergens.

What studies show about NO_2 and asthma

Research from around the world — including Australia — has consistently found that NO_2 is linked to both:

- **developing asthma**, and
- **triggering asthma attacks**.

Children exposed to higher levels of NO_2, whether at home or school, tend to have:

- more frequent and severe asthma symptoms
- reduced lung function
- more trips to the doctor or hospital

One study found that children living in homes with gas stoves were:

- **twice as likely** to wheeze or feel short of breath
- **four times as likely** to experience chest tightness compared with children in homes without gas stoves. [11]

NO_2 doesn't just affect kids, it can also make asthma worse in adults. Long-term exposure can even play a role in developing and worsening chronic obstructive pulmonary disease (COPD), a serious lung condition that affects about 1 in 13 people over the age of 40. The elderly in particular are vulnerable to poor indoor air quality as they spend comparatively more time indoors.[12]

How common is asthma linked to gas stoves?

- A major US study estimated that **12.7% of childhood asthma** is linked to gas stove use.

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[11] Lee, Julia. X., & Gaffin, J. M. (2026). Recent Evidence on Indoor Air Pollutants and Pediatric Asthma Morbidity. *Pediatric Pulmonology*, *61*(2), e71483. https://doi.org/10.1002/ppul.71483

[12] Mata, T. M., Felgueiras, F., Martins, A. A., Monteiro, H., Ferraz, M. P., Oliveira, G. M., Gabriel, M. F., & Silva, G. V. (2022). Indoor Air Quality in Elderly Centers: Pollutants Emission and Health Effects. *Environments (Basel, Switzerland)*, *9*(7), 86. https://doi.org/10.3390/environments9070086

- Australian researchers found a very similar number: **12.3% of childhood asthma** in Australia is attributable to gas cooking.[13]
- For a child who already has asthma and lives in a home with a gas stove, **about 30% of their asthma risk** comes from that stove alone.
- Gas stove exposure has also been linked to a higher chance of being allergic to house dust mites.[14]

What Australian and international studies tell us

A study across **12 Australian cities** found a clear link between outdoor NO_2 levels and the rate of childhood asthma.[15]

But exposure isn't the same for everyone:

- People living in **small homes or apartments** had **four times the NO_2 exposure** of those in large homes.
- **Low-income households** were exposed to **twice the NO_2 levels** of high-income households.[16]

This means some families — often those with fewer resources — face much higher health risks.

Lake Macquarie: growth and rising gas use

About **57% of homes in Lake Macquarie are connected to gas**,[17] [18] Furthermore, Lake Macquarie is growing quickly, adding around **2,143 people** and **860 new homes** each year.[19]

Across NSW, gas use in homes is still increasing:

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[13] Knibbs, L. D., Woldeyohannes, S., Marks, G. B., & Cowie, C. T. (2018). Damp housing, gas stoves, and the burden of childhood asthma in Australia. *Medical Journal of Australia*, *208*(7), 299–302. https://doi.org/10.5694/mja17.00469

[14] Doctors for the Environment. (2022). Asthma and indoor gas appliances. Retrieved 10 June 2026, from https://www.dea.org.au/asthma_and_indoor_gas_appliances_fact_sheet

[15] Knibbs, L. D., Cortés de Waterman, A. M., Toelle, B. G., Guo, Y., Denison, L., Jalaludin, B., Marks, G. B., & Williams, G. M. (2018). The Australian Child Health and Air Pollution Study (ACHAPS): A national population-based cross-sectional study of long-term exposure to outdoor air pollution, asthma, and lung function. *Environment International*, *120*, 394–403. https://doi.org/10.1016/j.envint.2018.08.025

[16] Lee, Julia. X., & Gaffin, J. M. (2026). Recent Evidence on Indoor Air Pollutants and Pediatric Asthma Morbidity. *Pediatric Pulmonology*, *61*(2), e71483. https://doi.org/10.1002/ppul.71483

[17] 350.Australia. (2024). Electrifying new residential and commercial buildings in NSW – cost and emissions impact assessment https://350.org.au/electrify-your-council-resources/

[18] REMPLAN. (2025). Lake Macquarie Dwellings https://app.remplan.com.au/lake-macquarie/housing/dwellings/tenure-ownership

[19] Lake Macquarie City. (2026). Draft Housing Strategy. Retrieved 10 June 2026, from https://shape.lakemac.com.au/housingstrategy

- **16,000–22,000 new gas connections** are added each year[20]
- That's **36–46% of all new builds**[21]
- For Lake Macquarie, this would mean **300–400 new gas-connected homes** every year

This locks in higher indoor air pollution for decades to come.

Why gas-free new homes are a smart solution

Installing gas in new homes locks in:

- poorer indoor air quality
- higher NO_2 exposure
- exposure to formaldehyde, carbon monoxide and fine particles (PM2.5)
- increased asthma risk, especially for children and the elderly

The simplest and most effective way to protect kids from NO_2 is to **avoid creating it in the first place**. That means reducing or eliminating activities that produce NO_2 — and gas cooking is one of the biggest and easiest sources to replace.

Switching new homes to all-electric is:

- low-cost
- easy to implement
- healthier for families
- better for children's lungs
- aligned with modern building trends and energy efficiency goals

In short: **going gas-free in new builds is one of the easiest ways to improve indoor air quality and reduce asthma risk for kids.**

Economic Benefits of All-Electric Buildings

Going all-electric isn't just better for our health by cutting indoor air pollution like NO_2, it also saves money and avoids the need for expensive new gas infrastructure.

Lane Cove Council found that **skipping a gas connection for an apartment can save around $2,000 upfront**[22]. And because new gas customers now have to cover the full cost

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[20] AER. (2026). AER - Gas quarterly disconnection reporting - 27 May 2026. https://www.aer.gov.au/publications/reports/performance/gas-quarterly-disconnection-reporting

[21] ABS. (2026). Building Activity, Australia. December 2025. https://www.abs.gov.au/statistics/industry/building-and-construction/building-activity-australia/latest-release

[22] SwitchedOn. (2024). More local councils move to ban new gas connections. Retrieved 10 June 2026, from https://switchedon.reneweconomy.com.au/content/more-local-councils-move-to-ban-new-gas-connections-in-homes-and-businesses

of connecting to the network, some households could face **between $7,500 and $17,300 in extra charges**, depending on where they live.[23] [24]

The NSW Government has also pointed out that **electric appliances are generally cheaper to run and maintain than gas**. When households and small businesses switch to all-electric, the savings really stack up — about **$2,771 a year**, or **around $4,000 a year** if you've got solar. Even apartments can save roughly **$2,400 a year** by electrifying.[25]

How Councils Can Keep Gas Out of New Developments

Local councils in NSW actually have a lot of power when it comes to shaping what new homes and businesses look like. With a simple change to their planning rules, councils can make sure new developments are built all-electric — no new gas connections — and it costs them almost nothing to do it. The only real expense is staff time to update the local planning policies.

Taking this step doesn't just cut indoor air pollution and improve community health. It also means every new household moving into the area gets lower energy bills from day one.[26]

The Role of Development Control Plans (DCPs)

Every council in NSW has a **Development Control Plan**, or DCP. This is one of the main tools councils use to guide what gets built in their area. A DCP sets out the standards and expectations that developers need to meet when they lodge a development application.[27]

A DCP works a bit like a performance guide, it sets objectives that developments should meet, rather than strict rules for every single detail. That means councils *can* include provisions that discourage or prevent gas connections in new buildings. Even though not every clause in a DCP is mandatory on its own, the overall objectives carry real weight when council staff assess development applications.

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[23] AEMC. (2025). AEMC makes changes to gas connection charges to support transition to net zero. https://www.aemc.gov.au/news-centre/media-releases/aemc-makes-changes-gas-connection-charges-support-transition-net-zero

[24] Jemena. (n.d.) Gas Connection Cost Estimator. Retrieved 27 June 2026, from https://canigetgas.jemena.com.au/

[25] Department of Climate Change, Energy, the Environment and Water. (2026). Make the switch to electric. Learn about electrification and get started with our step-by-step guide. NSW Climate and Energy Action. Retrieved 11 June 2026, from https://www.energy.nsw.gov.au/households/upgrades/switch-electric

[26] 350 Australia (2024). Electric Savings. The case for NSW councils to reduce emissions and energy bills through electrification. https://350.org.au/files/2024/06/2024_350_ElectricSavingsReport_v3.0_WEB.pdf

[27] Lake Macquarie City Council. (2026). Lake Macquarie Development Control Plan 2014. Retrieved 28 June 2026, from https://www.lakemac.com.au/Development/Planning-controls-and-development-guidelines/Local-Planning-Controls/Lake-Macquarie-Development-Control-Plan

If a DCP clearly states that new buildings should be all-electric, it becomes much harder for developers to justify including gas. [28] And importantly, councils don't need state government approval to update their DCP, they just need a majority vote.

Many councils have already done this, including Newcastle, Lane Cove, Parramatta, Waverley, Inner West, the City of Sydney and North Sydney.

Working Within NSW Planning Rules

There *is* one limitation: under the NSW State Environmental Planning Policy (SEPP), councils can't ban gas purely to reduce greenhouse gas emissions.

But the SEPP doesn't stop councils from acting for **health** or **economic** reasons — and both are strong, evidence-based grounds for avoiding gas in new buildings.

Councils also have to consider BASIX, the state's sustainability rating tool for new homes. BASIX sets minimum standards for energy, water and thermal performance, but it doesn't require or prohibit gas.[29] In other words, BASIX doesn't get in the way of councils choosing to support all-electric development.

Case Study: Lane Cove Council

Lane Cove Council is a great example of how this can work in practice.

In September 2023, the council updated its DCP to require all new developments over $250,000 to be fully electric. Their rule is simple:

> "All new developments are to use only electricity for all energy requirements associated with normal operations. Where outdoor barbeques require gas then only bottled gas may be used."

They also included exemptions for specialised industrial uses that genuinely can't electrify.

Crucially, Lane Cove based its decision on **health** (better indoor and outdoor air quality) and **economic benefits** (lower energy costs for residents).[30] This approach ensures the policy is consistent with state planning rules.

Recommendation for Lake Macquarie

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[28] 350 Australia. (n.d.), Detailed policy guide to all-electric, gas-free new homes and businesses. Retrieved 10 June 2026, from https://350.org.au/detailed-policy-guide-to-all-electric-gas-free-new-homes-and-businesses/

[29] Environmental Defenders Office. (2023) '350 Australia 'Electrify your Council'-Sustainable Buildings SEPP Guidance Note', 27 July 2023, Retrieved 10 June 2026, from https://350.org.au/files/2023/08/Summary-Legal-Advice_Environmental-Defenders-Office_DCPs-1.pdf

[30] Lane Cove Council, Lave Cove Development Control Plan, Part S Environmental Sustainability, pp4-5, adopted 21 September 2023, accessed 4 October 2023 via Council Agenda item 6, p.25, Attachment 22, NEW Part S - Environmental Sustainability, via https://lanecove.infocouncil.biz/Open/2023/09/CNL_21092023_AGN_AT.PDF

Lake Macquarie City Council can do the same.

By updating its DCP to discourage or prevent gas connections in all new developments — on health and economic grounds — the council can protect residents, cut bills, and avoid locking in outdated gas infrastructure.

This is a **low-cost, high-impact action** the council can take right now. Every new home built today will be part of our community for decades. Let's make sure those homes are cleaner, healthier and more affordable for the people who live in them.