Analysis: Cost and emissions savings for NSW households if councils require gas-free and all-electric new builds

Background

On Monday August 21, City of Sydney voted in support of banning gas connections and requiring all-electric new residential and commercial developments. The ban on gas is expected to be implemented through changes to its planning regulations via its Development Control Plan (DCP).

The motion was in response to 350 Australia's 'Electrify Your Council' campaign, and comes after a number of similar moves by local, state and territory governments. ACT passed a law in June 2023 banning gas connections in new homes, and in July the Victorian Government announced it will do the same.

On July 31st, Premier Chris Minns said he wouldn't follow Victoria's and the ACT's lead in banning gas connections to new homes. Frustrated by inaction at the state level, councils across NSW, including Waverley Council, Parramatta Council, and now the City of Sydney, are taking action locally.

In December 2022, Waverley Council passed a DCP prohibiting the installation of gas cooktops, ovens and heaters in new residential developments. In 2021, Parramatta Council banned gas appliances in commercial and residential developments in the city centre, and is now considering a similar ban across the municipality for commercial buildings.

The momentum to electrify new development is in response to increasing pressure over the negative health impacts of gas, its role in driving greenhouse gas emissions, and the impact of high gas prices for low income households. According to health experts, a child living with a gas stove faces a similar asthma risk to a child exposed to secondhand cigarette smoke.[1]

Summary cost and emissions savings

New analysis by Strategy Policy Research, commissioned by 350 Australia, demonstrates that there are substantial cost and emissions savings to be had if City of Sydney and other NSW councils connected to the gas network proceed with banning gas and requiring all-electric new developments. The analysis shows that if the City of Sydney prevented new homes being connected to gas:

- Each new household would save an average of $430 per year on their energy bills, or $5,500 in today's dollars over a 40 year period. This amounts to $256 million in bill

[1] Knibbs, L. et al. Damp housing, gas stoves, and the burden of childhood asthma in Australia. Medical Journal of Australia. 2018 (7): 299-302

savings for all new homes across Sydney over the same period. At a state level, the savings are $3.7 billion for all new homes over the same period.

- A reduction in carbon emissions across the City of 1.7 million tonnes over the same 40 year period would be achieved, totalling 24.1 million tonnes for the entire state if all gas-connected NSW councils followed Sydney's lead.

About the modelling

Strategy Policy Research quantified the impact that banning gas from new residential developments would have on projected greenhouse gas emissions and energy costs. The model uses a 40 year timeframe based on an average 40 year dwelling lifespan, commencing in financial year 2024.

The model used projected dwelling construction rates across each local government area (LGA) using Australian Bureau of Statistics (ABS) data, and energy consumption data (electricity and gas) from the Australian Energy Regulator.

The business-as-usual assumption is that new homes continue to connect to gas at the same rate as the current average in each local government area (LGA).

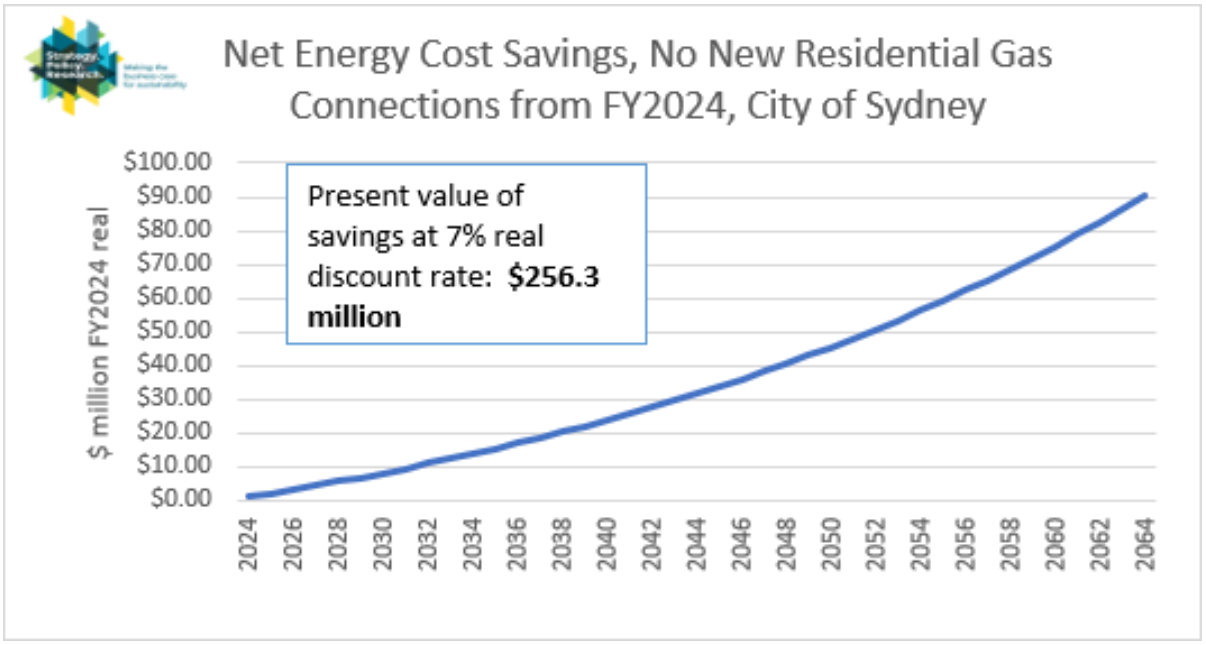
The model factored in the current and projected emissions intensity of the electricity grid, the proportion of renewable energy contribution to the grid, rooftop solar PV uptake rates, and projected energy efficiency improvements over time (see below for more details about the model).

Analysis of potential cost savings for households

The modelling shows that if Sydney Council prevented new homes from being connected to gas from next financial year, each new household would save $430 per year on their energy bill on average, or more than $5,500 in today's dollars over a typical 40-year life of a dwelling. Across the City, the total energy bill savings for all new households would add up to over $256 million in today's dollars (see Figure 1).

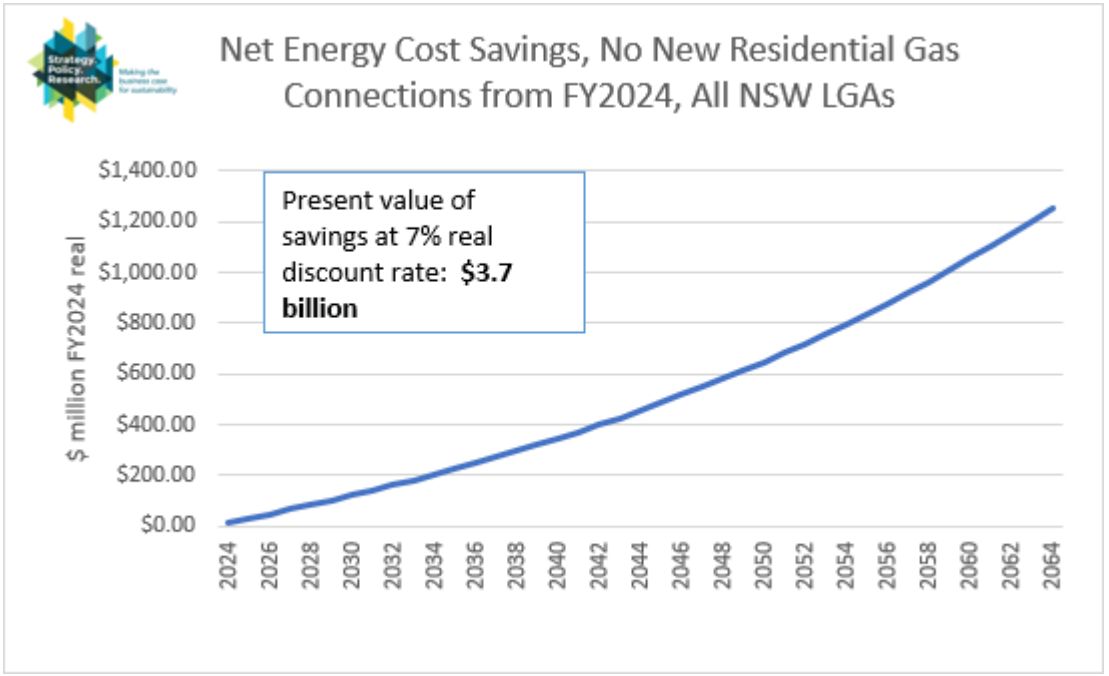
At the state level, if every NSW council currently connected to the gas network stopped allowing new residential gas connections from this financial year, the average annual bill savings would total $3.7 billion in today's dollars (see Figure 2).

Figure 1: Projected cost savings from banning residential gas connections from financial year 2024 for City of Sydney



Source: Strategy Policy Research 2023

Figure 2 - Projected cost savings from banning residential gas connections from financial year 2024 for NSW



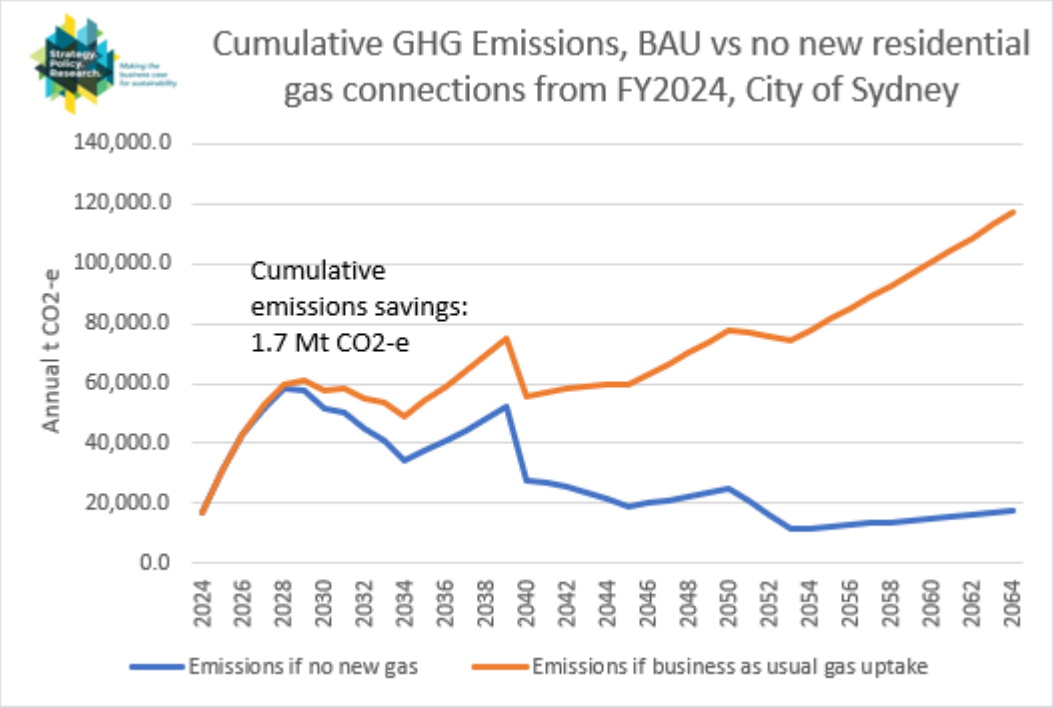
Source: Strategy Policy Research 2023

Analysis of potential emissions savings

From an environmental perspective, the analysis shows a reduction of 1.7 million tonnes of carbon emissions over the same 40 year period for the City of Sydney compared with business as usual, if new homes were required to be all-electric and gas-free (see Figure 3).

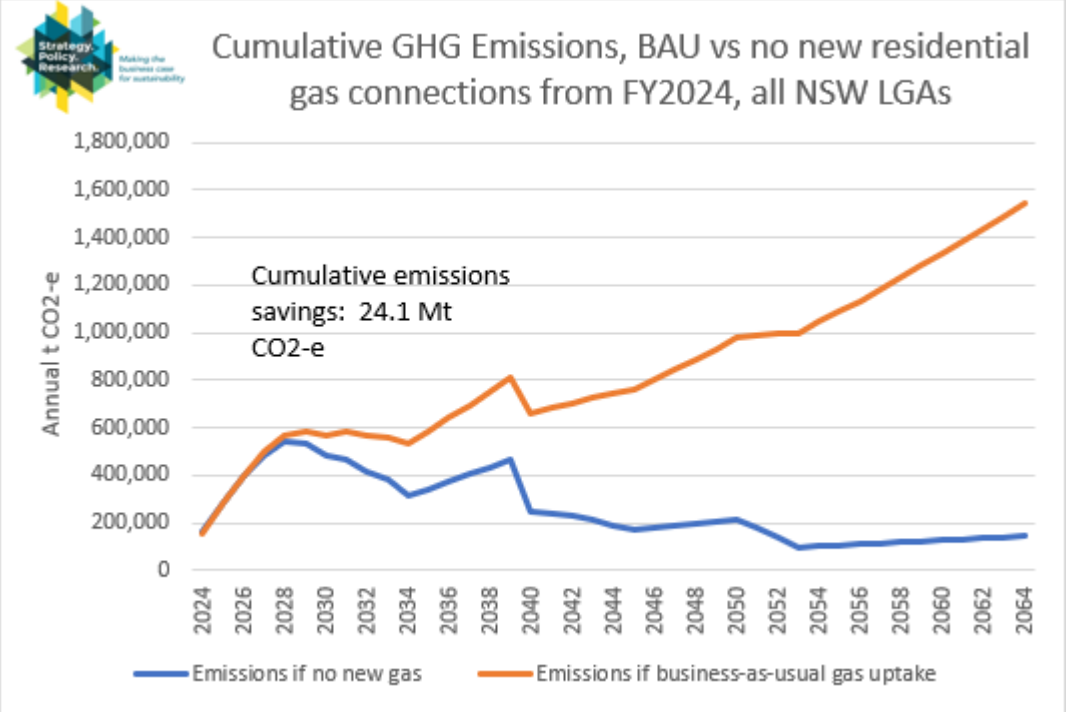
Cumulatively, this represents a carbon emissions saving of around 24.1 million tonnes across the state if all councils connected to the gas network followed Sydney's lead (see Figure 4).

Figure 3: Projected emissions savings from banning residential gas connections from financial year 2024 for City of Sydney



Source: Strategy Policy Research 2023

Figure 4: Projected emissions savings from banning residential gas connections from financial year 2024 for NSW



Source: Strategy Policy Research 2023

Assumptions included in the model

- Electricity and gas consumption data from the Australian Energy Regulator, assuming ongoing energy efficiency improvement over time (greater for electricity, minimal for gas);
- The current proportion of homes connected to the gas network for each LGA;
- Bill savings include avoiding the annual gas network connection fees, assumed to average $1 per day;
- Both gas and electricity prices are assumed to rise at 1% (after inflation) per year - the financial savings projected by the model would be higher if these energy prices were to increase more rapidly;
- Rooftop PV uptake by LGA is included in the model, and bill savings do not double-count the savings from solar; and
- The model shows that emissions would increase in the first two years, due to the emissions intensity of the electricity grid, which still relies on a significant amount of fossil-fuel generated electricity. However, this is assumed to fall over time, in line with the Australian Energy Market Operator's *Step Change* forecasts. Nevertheless, emissions continue to rise at a faster rate over the same two year period under the BAU scenario.

For more information:

- Philip Harrington, Strategy Policy Research, 0419 106 449 philip_harrington@strategypolicyresearch.com.au
- Lucy Manne, 350 Australia, 0417 387 516, lucy@350.org.au