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A pipeline of profits

How gas lobbyists are keeping us hooked on expensive, climate-wrecking gas appliances



Environment Victoria is located on Wurundjeri land and works across many Aboriginal nations.

We pay our respects to Aboriginal elders past and present, recognise their continuing contribution to caring for country, and acknowledge that sovereignty was never ceded.

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Preface

The 2024 season of MasterChef introduced viewers to a problematic sponsor - the powerful fossil gas industry player Australian Gas Networks (AGN).

MasterChef Australia 2024 kicked off with contestants cooking with biomethane and hydrogen, which AGN claims are “renewable” and plausible alternatives to methane gas.

The problem that viewers may not have realised was, in reality, the hydrogen featured in MasterChef isn't renewable and can't replace methane in our gas network. Biomethane will never be available at scale, and neither can be purchased by consumers for use at home.

It's the latest bait and switch attempt from the polluting gas industry to keep selling us fossil methane gas.

The biomethane featured in MasterChef was bottled and shipped down to Melbourne by the only provider of biomethane gas in the country, a small demonstration project at a sewerage facility in Sydney. The hydrogen was produced using polluting fossil methane and trucked in for the program. AGN then labelled the hydrogen ‘carbon neutral’ after purchasing offsets.

In reality, these gases are simply not available to consumers and they will never be a viable option for most everyday Australians – and the gas industry knows it.

The Masterchef sponsorship is just the latest attempt by the gas lobby to greenwash its industry. In this report we look deeper into the recent history of the ‘downstream’ gas lobby – representing the pipeline owners and appliance manufacturers – and how they have done everything in their power to keep Australians shackled to gas.

Introduction

Increasingly, methane gas is being recognised as a problem in Victoria, and all over Australia. So much so, that the Victorian government has recently released its Gas Substitution Roadmap to wean Australia's southern state off its gas addiction.

Five decades of cheap gas has left Victoria with an expensive problem. Millions of homes have been built with poor insulation and inefficient gas heaters. Now that the state's once abundant reserves are running out and imported alternatives are vastly more expensive, the cost of keeping people warm through Victoria's notoriously chilly winters is no longer affordable.

Meanwhile, attitudes to electricity are shifting as we shut down dirty coal power stations and Victorians install rooftop solar on a massive scale. People are now increasingly trying out and switching to clean, modern electric technologies like induction cooking, reverse cycle air conditioning and heat pump hot water. The Victorian government has recognised these changes and started responding – by ruling out gas connections in new homes and promoting the electrification of existing homes.

Meanwhile, the gas lobby, representing interests from extraction, through the pipelines and to the appliances, is making a last-ditch attempt to confuse and delay change, all in the name of protecting their profits. And it's all to our detriment.

The Gas Appliance Manufacturers Association of Australia (GAMAA) was formed in 1957 to provide a 'voice for the natural gas & ancillary industries.' But as the climate crisis worsens and more evidence comes to light about the harms caused by methane gas, widespread gas usage is losing community support. Meanwhile, GAMAA has failed to keep up with the times.

Not only has GAMAA failed to adapt, but over decades it has actively campaigned against moves to electrify and reduce pollution in Victoria's energy system, or even provide Victorians with accurate information about the impacts and energy ratings of their products. The gas industry has resisted transparency and regulation at every turn, denying customers the opportunity to make informed choices about their products, which we now know can increase the risk of childhood asthma by 42%.¹

Working in lockstep with Australian Gas Networks (AGN), the Australian Pipelines and Gas Association (APGA) and the Australian Gas infrastructure Group (AGIG) – the gas lobby have formed a dangerous cabal resisting Victoria's efforts to reduce climate pollution by breaking free from methane gas, which is harmful to the climate and to Victorians' health.

The gas lobby is also spruiking hydrogen as a transition fuel away from gas, but this follows a familiar fossil fuel industry routine of creating a smokescreen to confuse consumers and delay moves away from their polluting fuels.

Previously the coal industry tried to dupe us with the idea of 'clean coal', now the gas industry is doing the same thing to distract Australians from the only viable long-term solution – electrification with affordable, clean and reliable energy.



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How the gas lobby operates to the detriment of Victorians

How the gas lobby blocked regulation of its damaging products

For decades gas appliance lobbyists have resisted any move towards improved energy efficiency. We are all familiar with energy rating stars from electrical household items including refrigerators, TVs and washing machines. These exist to help people compare and choose products with lower running costs.

Over time, manufacturers must make sure their products meet a minimum standard of efficiency; while also clearly labelling them so people are informed and can choose the best in class.

In Australia electric appliances, but not gas appliances, are subject to a continually improving efficiency program.

It's extremely effective – the latest review of the program found that it saves the average Australian household between \$140 and \$220 off their energy bill each year and contributes between 9% and 15% toward our national emissions reduction targets.² The cost to run a household refrigerator/freezer has plummeted by nearly half since Australia decided to follow US efficiency standards for these products back in 1999.³

But for gas appliances, it's a very different story. The reality is energy standards, health impacts and emissions remain barely regulated because the gas industry have successfully resisted moves to regulate them.

The gas appliance industry has never been willing to work constructively with government and it is their customers who lose out. Unfortunately, successive governments have been all too compliant in giving the industry what it wants.

Instead, the gas industry created their own labelling scheme in the 1980s and have barely updated it since. This scheme has provided a useful tool for them to hide behind and oppose new energy standards that would improve over time and allow direct comparison with their electric competition.

We all pay for the consequences. The lack of up-to-date, binding efficiency standards on gas appliances have cost households \$191 million annually and caused an extra 600 kilotonnes of greenhouse gas emissions every year since then, because we have been stuck with less efficient appliances.⁴

The gas industry hides behind their own standards to avoid having to keep pace with international developments, and demand excessively long consultation processes and lead-in times to delay progress.⁵ This tactic works because every time there's a change of federal government, progress on gas appliance energy efficiency goes back to square one and the gas industry is again given free rein by all too compliant governments.

In doing so, the gas industry is hurting both their members and their customers. Strong, long-standing efficiency programs have been shown to drive innovation and create employment – around 300,000 extra jobs each year in the United States alone – and significantly bring down the price of appliances.⁶

Now that gas prices are sky-high and households are saving with solar, GAMAA has backed itself into a corner. In the process it has done its own members a great disservice.

For the last 20 years, the gas industry could have been championing high standards, better building insulation, and helping Victorians spend less on gas. First and foremost, they should have been preparing for inevitable electrification. Instead, they allied with the gas suppliers and lobbyists, ignored skyrocketing gas prices and technological advances, and tried to keep us hooked.

Gas appliances can't keep up with efficient electric alternatives

Even today, there is minimal regulation of the energy used by gas ducted and space heaters, and decorative gas heaters don't have any efficiency standards at all.⁷ This is why the average ducted gas heater converts only 80 percent of its gas energy into heat energy, before even considering the significant losses from the ducts. Ductwork in good condition causes losses of around 17%, and poor ductwork, which is common, causes losses of around 35%.⁸ Room heaters have even worse efficiency.⁹

Meanwhile the average ducted reverse cycle system in Victoria uses less than a quarter of the energy a gas heater uses per unit of room heat delivered¹⁰ because it uses the super-efficient heat pump cycle. This translates to much lower running costs, saving up to 75% on winter heating bills.¹¹ Reverse cycle also runs on electricity that is increasingly renewable, saving money and causing fewer emissions, especially when combined with rooftop solar.

It's no accident that gas appliance efficiency has atrophied - ducted gas heater standards have not been updated for 20 years.¹² It seems that the last thing the lobbyists want is for people to choose the best product - they think energy efficiency is "superfluous" (despite the spiralling costs of gas) and that it is better to install the same old "like for like" when appliances break down.¹³

Gas water heaters are slightly better - they must comply with proper minimum energy performance standards, but labelling has yet to be implemented. Ultimately, however, gas water heaters compare poorly with electric alternatives – even the most efficient gas water heaters can use more than four times the energy that an efficient heat pump system uses to produce hot water, at three times the running cost.¹⁴

As a result, replacing a gas storage or instantaneous hot water system with a heat pump can save up to \$200 per year.¹⁵ When combined with rooftop solar, electric water heaters can produce hot water for free – something gas models will never be able to do.

Some local manufacturers are taking the opportunity – Earthworker Energy manufactures high quality hot water tanks in the Latrobe Valley. They assemble and sell their own heat pump hot water products, and supply tanks for other heat pump manufacturers.

The health impacts of gas stoves and cooktops

Although most of us have been using gas products for many years, the true health consequences of naked gas flames in our homes are only now coming to light.

Despite a growing body of evidence spanning decades, the health impacts of gas have only recently been reported widely.

According to the Climate Council's 2021 report *Kicking the Gas Habit - How gas is harming our health* gas cookers can be harmful to children's health - it is estimated to be responsible for 12 percent of all childhood asthma cases in Australia.¹⁶ Studies show that a child living in a home with a gas cooktop has a 42 percent increased risk of developing asthma – something no parent wants.¹⁷

Children from lower income households face a greater risk of being exposed to the harmful impacts of gas cooking, as those households are often less able to afford proper maintenance and ventilation. This is especially the case for those renting or living in public and community housing.¹⁸

The dangers of gas heaters are well known. Open-flue gas space heaters, of which there are still around 200,000 installed in Victorian homes, have caused at least three deaths by carbon monoxide poisoning in Victoria in recent years.¹⁹ And unflued gas heaters which release dangerous pollutants directly into rooms are still widely used in other states including in thousands of classrooms.²⁰

Despite high gas prices now being here to stay and the Victorian government moving to end the state's gas addiction, instead of supporting their members to pivot business models to efficient electric, GAMAA have doubled down. Just like the gas pipeline operators, GAMAA are advocating for a future where Australian energy consumers will all be burning hydrogen at home.²¹



While green hydrogen made from renewable electricity may be an important industrial fuel in the future, the idea that Victoria's homes will be connected to a hydrogen network is a gas lobby fantasy designed to protect their profits.

The Australia Institute explains the gas lobbyists' strategy in their recent report 'Why are gas companies trying to sell us hydrogen?' It follows a familiar industry songbook:²²

THEIR STRATEGY FOR GREENWASHING

1. Boost the idea that hydrogen is a miracle future fuel that will power Australia and the world
2. Promise the hydrogen will soon come from renewables
3. Funnel subsidies toward fossil-fuelled hydrogen projects, as "proofs of concept"
4. Lock in "hydrogen infrastructure", which also happens to be gas infrastructure – like gas connections to homes, pipelines, shipping terminals and tankers
5. Make profit

Deceptively, GAMAA claims that “the costs to change from natural [fossil] gas appliances to hydrogen gas appliances is much lower than the costs to convert natural gas appliances to equivalent electric (heat pump) appliances.”²³

What they don't tell you is that they have only tested a hand-picked range of new appliances for compatibility with methane gas blended with a small amount of hydrogen – not 100 percent hydrogen – and have not made the results of this testing public.²⁴

In reality, GAMAA have not publicly identified any in-use appliances for compatibility with hydrogen, blended or 100 percent. Even the gas industry – led Australian Hydrogen Centre – has admitted that a 100 percent hydrogen gas network will need everybody to purchase new gas appliances.²⁵ The actual safe level of hydrogen blending has not been transparently disclosed.

So GAMAA's modelling is based on the false, impossible scenario that everyone will buy new hydrogen appliances – that do not yet exist – at the same time, so that the network can switch to 100 percent hydrogen. That means that unless we pay to replace every single gas appliance in our homes all at once – even the appliances that are only a couple of years old – then any single non-hydrogen appliance in the network becomes a potential bomb waiting to explode.

Factoring in the energy required to make hydrogen and the massive efficiency difference between gas and electric appliances, heating a home with renewable hydrogen would take five times as much energy – five times as many wind and solar farms – as it would to use efficient reverse cycle heating.²⁶

Hydrogen blending is a similarly ludicrous idea. Even if hydrogen was made using renewable energy, and even if a 10 percent blend was achievable, it would barely make a difference to emissions. This is because hydrogen contains less energy than methane, meaning that more blended gas overall must be run through the pipes.

For instance, a 10 percent hydrogen blend by volume will only reduce emissions by 3 percent,²⁷ using a great deal of hydrogen that could be put to good use elsewhere and locking in

huge methane pollution. Therefore, the idea of blended gas is a distraction that can't reduce emissions and is designed to keep us using gas.

We pay for gas infrastructure while the gas industry gets guaranteed profits

A hydrogen network won't just require new appliances – it would require the entire gas network to be replaced.²⁸

The gas industry-led Australian Hydrogen Centre has estimated that the cost of upgrading the Victorian gas network for 100 percent hydrogen would be \$416 million for components, \$12 million for electrical control systems and \$602 million for diaphragm metres.²⁹

These figures underestimate the true costs. They ignore the pipes themselves, assume that the gas network owners have full knowledge of every underground component, and omit the costs of assessing and replacing joins, gaskets and other components. Their excavation costs ignore the many roads and footpaths that would need to be patched up.

In reality, the costs are far higher. An analysis of the German national pipeline network found that converting gas pipelines to 100 percent hydrogen would cost between 40 and 80 percent of building an entirely new hydrogen network³⁰ – and hydrogen pipelines can cost 68 percent more than methane gas pipelines.³¹

This is great news for the privately-owned gas networks because new infrastructure could increase both the value of their company and shareholder returns. And ultimately, we all pay for the gas network via our energy bills.

These costs are completely unnecessary – switching to efficient electric appliances doesn't require any major overhaul of the transmission and distribution network.

We pay for the gas industry's self-serving PR

While the gas industry continues to spin its dubious claims and resist any attempt to regulate its own climate wrecking activities, the public foots their public relations bill.

The Australian Hydrogen Centre has been given \$500,000 by the Victorian Government and \$1.26 million from the Australian Renewable Energy Agency (ARENA) to study hydrogen blending.³²

AGIG's Hydrogen Park Murray Valley, which is blending “up to 10 percent” hydrogen was funded by \$36.1 million from ARENA, \$12.315 million from the Victorian Government and backing from the Clean Energy Finance Corporation.³³

The Future Fuels CRC, which counts APGA, AGIG and GAMAA among its partners, along with several universities and government agencies, received \$26.25 million in funding from the Australian Government. And it isn't making any of its results public.³⁴

In fact, Multinet and Australian Gas Networks tried in their most recent proposals to the Australian Energy Regulator (AER) to get \$3 million for “renewable gas communications”.³⁵ Thankfully, the AER rejected this idea, which would have taken money straight from consumers' pockets into the gas lobby PR machine.

Conclusion

Efficient electrification fixes all the problems with methane gas – getting off gas will save money, clear our air and move us towards renewable energy. It is in the public interest, and it can be done now.

It seems the gas industry is having its own Kodak moment – public expectations for clean energy are moving on but the industry is betting on the status quo.

In contrast, the automotive industry realised years ago that the shift off fossil fuels was inevitable, and one by one the big brands are announcing end dates for manufacturing petrol and diesel passenger vehicles.

Yet it seems that the gas lobby is simply unable to move with the times or see past their own potential profits. It's time they were called out because these tactics have proven an effective way of confusing the public – to the detriment of consumers hip pockets, our kids' health and our climate.

Hiding behind false claims of renewable gas or green hydrogen won't fool a public who want to reduce power bills, live in safe clean homes and care deeply about reducing emissions to protect their children's future.

It's time the gas industry steps aside and allows the public to enjoy the benefits of a clean, renewably powered electric future.

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