At HyHome, we're using hydrogen gas appliances to showcase future energy living.

To learn more about renewable gas

Go online and visit renewable-gas.com.au or scan below

AGN acknowledges that HyHome is situated on the traditional lands of the Wurundjeri People and recognise the Wurundjeri People as the traditional custodians of the land.

Acknowledgement of Country

AGIG acknowledges the Traditional Custodians of the lands upon which we live and operate, and we pay our respects to Elders past, present and emerging.

We recognise Aboriginal and Torres Strait Islander people's historical and ongoing connection to land and waters, and we embrace the spirit of reconciliation.

Welcome to HyHome

Future Energy Living

Hydrogen Home (HyHome) is an Australian-first initiative showcasing 100% hydrogen gas appliances in a residential setting – demonstrating the way of the future for gas in the home.

Australian Gas Networks

HyHome

About HyHome

HyHome is a joint initiative between AGIG and leading residential home builder, Dennis Family Homes, with the support of our technology partners. This Australian-first is an exciting demonstration of the low carbon future of gas supply to our homes in Australia, which allows homeowners to enjoy the benefits of gas as they do today.

Why hydrogen?

Hydrogen is a great replacement for natural gas because it can be used in the same way for heating, hot water and cooking appliances like your oven, cooktop or barbeque. There are many ways to produce hydrogen. The kind we're using in HyHome for demonstration purposes is grey (meaning it is created from natural gas), however the type we are currently and will continue to use to decarbonise the gas networks is renewable gas made from green hydrogen (created from renewable electricity) or biomethane.

Decarbonising the gas networks

By shifting from natural gas to renewable gas (such as green hydrogen), which can be used in the same way natural gas is today, we can deliver clean, reliable and renewable energy to power the appliances Australians use in their homes. For householders, this means no additional carbon emissions are released to the atmosphere simply by living as you already do each day!

Like electronic vehicles, homes featuring hydrogen-ready appliances are expected to become the norm as we move toward our goal of reducing carbon emissions.

Green hydrogen in particular is considered a fuel of the future as it has a low impact on the environment and can be stored in large volumes within the current gas network for when its required – just like a battery.

Serving nearly 1.3 million homes and businesses in South Australia, Victoria, Queensland, New South Wales and the Northern Territory, AGN is proudly leading the Australian energy sector with our renewable gas projects to deliver renewable hydrogen through our existing distribution networks.

A renewable future

Around the world, renewable gas is well on its way to becoming a cost-effective and sustainable reality for homes and businesses, with countries such as New Zealand, Japan, the UK and Canada in various stages of rolling out hydrogen to their networks.

With a target of net zero carbon emissions by 2050, Australia is on the path to reducing energy emissions and creating a cleaner future.

Already in South Australia, 3000 homes receive an up to 5% renewable gas blend through the existing gas network. Similar projects delivering up to 10% renewable gas blends are planned for 700 homes in Queensland and 40,000 households in Victoria. Ultimately AGN aims to supply 10% renewable gas across its networks by 2030 and 100% renewable gas by 2040 (as a stretch target) but no later than 2050. Learn more at www.australiangasnetworks.com.au/hyhome

The appliances

While existing home appliances will work safely, reliably and effectively with up to 10% and potentially higher hydrogen blends, appliance manufacturers are already working on hydrogen-ready appliances that can easily transition from natural gas to hydrogen gas. Here's a snapshot of the hydrogen appliances running on 100% hydrogen featured within HyHome.

Rinnai

Hot water system

The unit has a gas input rating of 70MJ/h and a hot water capacity of 10 litres per minute at a 25 degrees celcius rise. As the uptake of this technology increases, the capacity of the system will be scaled up to match the 32 litres per minute flow rates of current products. Once the product transitions into mass production, the size of the unit will also be reduced.

Rinnai

Heating

A hydrogen powered hot water service is powering a heat exchanger in the roof of HyHome. So the ducted heating in the home is running on hydrogen energy – paving the way for how we can warm your home but not the planet.

HEATLIE BARBECUES

Barbecue

Developed in conjunction with Woodside Energy, the Heatlie Hydrogen BBQ works and cooks the same as any other BBQ, while using hydrogen as a fuel source as an alternative to LPG or natural gas.

Electrolux

Cooktop

Our concept hydrogen gas cooktop offers unparalleled efficiency, delivering swift and precise heat. With a sleek and modern design that exudes elegance, it is the epitome of premium and, when run on renewable hydrogen, eco-conscious living. It offers a refined and responsible cooking option for the discerning home chef.

Hydrogen fast facts

- Hydrogen is the simplest and most abundant molecule in the universe
- Hydrogen is colourless, odourless, non-toxic and an excellent carrier of energy
- Like natural gas, hydrogen can be used to heat buildings and power vehicles
- Research indicates that net zero emissions from gas networks can be reached with hydrogen at half the cost of electrification*
- Our networks are largely hydrogen ready, and existing gas appliances will continue to work safely and reliably on blended renewable gas
- Hydrogen production through electrolysis brings together gas and electricity networks, using the gas networks like a giant battery to store excess renewable energy

*Frontier Economics, 2020

Safe and reliable

Hydrogen has been used throughout Australia for decades and is both a safe and reliable source of clean energy. AGN is working closely with experts in hydrogen, BOC Limited, to ensure international best practice is applied to the design of the hydrogen appliance system you see in HyHome. Working with regulators and industry experts we are ensuring that the hydrogen sector delivers a safe and efficient energy source for generations of households to come.

BOC
A Linde company

Learn more about our journey to 100% renewable gas

How is hydrogen made?

Hydrogen is naturally occurring but is usually found attached to other elements – for example with oxygen as water (H2O) or with carbon as natural gas (CH4). Therefore, if we want to use hydrogen, we must separate it from these other elements.

There are a number of ways to produce hydrogen. The most common are to use electricity to split water into hydrogen and oxygen– a process known as electrolysis. When renewable electricity is used this produces green hydrogen.

This requires production facilities to house the electrolysers which then delivers the renewable gas to households through the existing gas network.