

Safety and gas appliances



WHAT IS HYDROGEN AND RENEWABLE BLENDED GAS?

Hydrogen is the simplest and most abundant molecule in the universe. It is colourless, odourless, non-toxic and an excellent carrier of energy. Like natural gas, hydrogen can be used to heat buildings, power vehicles and produce electricity. Unlike natural gas, when burned, hydrogen produces only heat and water vapour - no carbon emissions.

In nature, hydrogen is found attached to other elements, which means we need to separate it before use. If we do this in a renewable way the hydrogen is renewable hydrogen.

Renewable blended gas is the term used to describe gas supply that is part renewable gas and part natural gas.

Blending renewable gas with the natural gas already being supplied to customers means we can start to decarbonise energy supply using our existing infrastructure and with minimal impact to customers. It also means customers retain their choice of energy supply, and those industries relying on gas can continue to access it.

IS RENEWABLE BLENDED GAS SAFE?

We are experts in developing and operating gas infrastructure safely and reliably. Our commitment to safety underpins everything we do, and we must be satisfied that our renewable gas projects are safe before first production.

Hydrogen, like other fuels, is flammable and this is a key reason it can provide us with energy. It also means we need to treat hydrogen and renewable blended gas with respect, as we do natural gas, electricity, petrol and other energy carriers.

The properties of hydrogen are well known and there is a significant body of evidence on its safe handling, including from industries that have produced, transported and used hydrogen for more than 100 years.

While hydrogen is odourless and burns with an invisible flame, odorants and colourants will be added for use in the home, such that flames can be seen and leaks can be detected by smell - just like natural gas. Our networks are also predominately polyethylene (plastic), which is suitable for 100% renewable gas.

As long-term owners of the gas networks, we are satisfied that we can adapt to the safety requirements for managing renewable gases. We are further subject to regulation by government bodies, which are designed to ensure our commitment to safety, reliability and service continue.

A pathway to cleaner energy
Delivering blended renewable gas across Australia

For more information
blendedgas.agn.com.au

CAN THE EXISTING GAS NETWORKS SAFELY ACCOMMODATE THE BLENDED GAS?

Yes. The areas to which we are supplying blended renewable gas, as well as the majority of our networks across the country, are new generation polyethylene (plastic pipes) and are suitable for transporting hydrogen.

The introduction of hydrogen into our network does not cause our gas pipes to leak. On occasion gas pipes do leak for other reasons though, such as damage from tree roots or damage by someone hitting the main.

Should a leak occur in the project area, our response and safety procedures remain the same.

HYDROGEN IS INVISIBLE AND DOESN'T SMELL, HOW WILL WE KNOW IF THERE IS A LEAK?

The introduction of hydrogen blended with natural gas into our network will not cause our gas network to leak. In fact, our polyethylene (plastic) gas networks are suitable to transport 100% hydrogen. Neither hydrogen nor natural gas smell in their normal state. Natural gas supplied via the gas network contains a special odorant to give it its distinctive smell, so that leaks can be detected. Blending up to 10% hydrogen with natural gas will not bring the odorant outside of acceptable levels. If there is a leak, you will still detect the 'natural gas' smell.

If you smell natural gas, report the leak immediately by calling the 24-hour 1800 GAS LEAK (1800 427 532).

There are also other routine gas safety measures in place on the gas network, including regular leak detection surveys, which use specialist equipment. These surveys will continue in the project zone as is normal in the rest of the network.

WILL I HAVE TO BUY NEW APPLIANCES?

The appliances sold in Australia are designed to operate efficiently and effectively with natural gas. They are tested with varying gas compositions to account for the varying sources of natural gas supplied around Australia. One such "limit" gas contains 13% hydrogen, and therefore all certified household gas appliances sold in Australia have undergone a range of safety tests with this level of hydrogen.

Consistent with this and with our own appliance testing program, we are confident that your existing home appliances will work safely, reliably and effectively with up to 10% hydrogen blends and potentially even higher - with international projects supplying up to 20% hydrogen blends.

When receiving 100% renewable hydrogen gas – which is being targeted for post-2030 - new appliances or burner parts may be required.

100% hydrogen appliances are in use throughout Australia and the world today – we have hydrogen barbecues that we use at community events – but at the moment they are niche product whilst the market establishes itself. Appliance manufacturers are already working on hydrogen ready appliances that will easily transition from natural gas to hydrogen gas. Hydrogen cars, trucks and forklifts are also available.

Our Low Carbon Strategy outlines our plans to supply 10% renewable gas by 2030 before starting the conversion to 100% renewable gas. The timing of 100% conversion (post-2030) is aligned with when many appliances will be able to be replaced as part of their natural retirement cycle which will also contribute to a smooth transition.

WE'VE BEEN HERE BEFORE

Historically, Australians relied upon Towns Gas to meet demand. Towns Gas was manufactured from coal and consisted of 50-60% hydrogen. Some places such as Hong Kong and Singapore still rely on Towns Gas.

Australia switched from Towns Gas upon the discovery of natural gas, because natural gas was considered more reliable and economic. This started in the late 1960s in South Australia and Queensland, whilst some places, including parts of Queensland relied on Towns Gas until the late 1990s.

Today we know that cost of producing hydrogen is decreasing and that blending renewable hydrogen with natural gas is the first step towards lowering carbon emissions.