

# Safety and gas appliances



## HYDROGEN'S TIME HAS COME

Australia's Chief Scientist Dr Alan Finkel has declared 'hydrogen's time has come', with changes in technology making it an economic, safe and convenient zero emissions fuel for households and businesses throughout Australia.

Hydrogen, like all other fuels, is flammable. It is this property which makes it useful by providing heat and energy to our homes and businesses. Just like natural gas, when proper guidelines are followed, hydrogen can be used safely, as it already is now both in Australia and overseas.

For us, safety is a non-negotiable and we are experts in building and operating infrastructure to deliver gas safely and reliably to thousands of customers across Australia every day. The work we are doing to deliver a 5% renewable hydrogen blend will have all the necessary approvals in place prior to first delivery and the characteristics of the blended 5% renewable gas will be consistent with the Australian Standards for natural gas supply.

## BLENDED GAS - WHAT WORK HAS OCCURED?

There has been extensive research in Australia and overseas in relation to the blending of hydrogen with natural gas and its use in networks and appliances. This work indicates that 10-20% hydrogen could be added to natural gas supply now with no impact to consumers.

For example, a report for the Council of Australian Governments (COAG) noted that hydrogen can be safely added to natural gas supplies at 10% by volume without changes to pipelines, appliances or regulations. Our project will only blend 5% renewable hydrogen with natural gas.

In further support of this, we are part of an appliance testing program with an Australian certified laboratory testing appliances with various percentages of hydrogen. Initial test results have indicated that appliances will work safely and reliably with a 10% hydrogen blend. The full results will be available before we begin supplying blended gas.

Elsewhere in the world, hydrogen is already blended with natural gas and used in homes and businesses. For example, in the UK, the Health and Safety Laboratory and Kiwa (an autonomous global organisation in testing, inspection and certification) have successfully tested hydrogen blends of up to 20% on a range of common household gas appliances and will begin supplying a 20% hydrogen blend in 2020.

With this in mind, we're confident that the blending of 5% hydrogen with natural gas will operate in the same way as supplying 100% natural gas through the networks.

## A pathway to cleaner energy Blended 5% renewable gas in Mitchell Park

**For more information**  
[blendedgas.agn.com.au](http://blendedgas.agn.com.au)

## PRODUCTION AND STORAGE OF HYDROGEN

We have extensive experience in operating gas infrastructure safely and will ensure the safety of the hydrogen production and storage facility at the Tonsley Innovation District through:

- Safety systems installed to monitor the plant's operating parameters
- Continuous monitoring of the plant from our operations control room, with the ability for remote shut-down in the unlikely event this is required
- Emergency systems in place to ensure the plant shuts down safely if a problem is identified
- Leak detection and response systems will be fitted at the facility at the Tonsley Innovation District

A Development Application has been submitted for the HyP SA facility.

## TRANSPORTING BLENDED GAS

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.

On occasion gas pipes do leak for other reasons. This might include damage from tree roots or damage caused by someone hitting the main.

Should the mains in the project area leak, our response and safety procedures remain the same. In this circumstance you should call 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.

## USING BLENDED GAS

The characteristics of blended 5% renewable gas are consistent with those set out for natural gas within the Australian Standard. As such, there will be no impact in the way gas is used in the home. Furthermore, the project will not directly impact on any existing arrangements that residents have in place with their gas retailers - the amount you pay for blended gas will be no different to the cost of 100% natural gas.

Whilst similar to natural gas, hydrogen is colourless when burned and has a wider flammability range. However, these properties will not have an impact when blended at the small volumes (5%) outlined in this project.

Neither hydrogen nor natural gas smell in their normal state. Natural gas supplied via the gas network has a special odorant added to it to give it its distinctive smell. Adding 5% hydrogen to natural gas will not change the effectiveness of the odourising system. If there is a leak, you will still detect the 'natural gas' smell.

If you do smell natural gas you should report the leak immediately and our crews will respond. The number you call remains the same and if you have a leak call 1800 GAS LEAK (1800 427 532). Our lines are open 24 hours a day.

## WE'VE BEEN HERE BEFORE

From 1861 until 1969, South Australians relied upon Towns Gas to meet demand. Towns Gas was gas manufactured from coal and consisted of 50-60% hydrogen. Some places such as Hong Kong still rely on Towns Gas.

South Australia switched from Towns Gas upon the discovery of natural gas, because natural gas was considered more reliable and economic. Today we know that blended renewable gas is the first step on our journey to lowering greenhouse gas emissions for the gas industry and that the cost of producing hydrogen is decreasing.