

What you need to know

Why change?

The gas we use to heat our homes now – methane – releases carbon dioxide into the atmosphere when we burn it, which is contributing to climate change. 30% of carbon dioxide emissions in the UK come from the methane we burn to heat our homes and cook.

Hydrogen doesn't contain any carbon and when burnt it does not produce any carbon dioxide – but simply water and heat so using hydrogen will stop these emissions.

Switching to hydrogen will allow us to carry on heating and cooking with gas in a cleaner, more environmentally friendly way.

Hydrogen appliances

The gas appliances in your home use a gas called methane. If we change the gas supply, you will need different appliances that can use hydrogen. Hydrogen appliances look exactly the same but they have a few different parts inside them that allow them to burn hydrogen – such as a new burner. Burners are designed to allow the flame to be held in place and depending on the fuel, different burners are used.

Switching to hydrogen

The Government is deciding whether the gas network can be converted to hydrogen. If it is, hydrogen will reach your home through the same network of underground pipes that currently supplies methane. A few older pipes will need to be replaced and you'll be notified of any road works in your area. But it won't be necessary to dig up all the roads.

Once the switch is made, everyone's supply will be changed to hydrogen, regardless of which energy supplier you use. You won't be able to choose between hydrogen and methane. That's because there is only one network of pipes, so only one type of gas can be supplied. And we can't continue to use methane as we need to meet the NetZero target.

You'll still be able to choose which supplier you buy your hydrogen from. And you'll also still have the choice of using electricity instead of gas or using any other sources of energy available such as solar power.

How is hydrogen produced?

Hydrogen is all around you, as it is the most abundant element in the universe – but, it's usually combined with other elements. For example, water is hydrogen combined with oxygen. Hydrogen is the H in H₂O.

Natural Gas (which is primarily made of methane), the gas we currently use, is a combination of hydrogen and carbon. The methane we use comes from underground deposits that have been there for millions of years, like the ones found under the North Sea. When we burn it the carbon in the gas combines with oxygen in the atmosphere to form carbon dioxide. And its carbon dioxide that is damaging the climate.

One way to produce hydrogen for you to use in your home is to take the carbon out of the methane, leaving just hydrogen gas. The carbon can then be safely captured and stored – such as by being put back into depleted underground reservoirs such as those the methane came from.

It is known as blue hydrogen and it's likely to be how most hydrogen is produced to start with. There are other ways to make hydrogen as well. It can be made from water by splitting it into hydrogen and oxygen using energy from renewable sources, such as solar power. The technology to do this already exists, but not on a scale that can meet the needs of the whole country. In the future, once the process is cheap enough and can work with plentiful water supplies, this is where your hydrogen will come from and is known as green hydrogen.

Your choices

When hydrogen comes to your local area, you will decide if you want to continue using gas appliances or if you switch to electricity. Here are some of the questions you might want answers to.