

# Discovery of natural hydrogen

Cheap, vast, and potentially renewable sources of natural hydrogen sit underground.



All hydrogen is colourless, odourless gas, but it is named after different colours depending on how it is manufactured.

- **Gray hydrogen** Made from fossil fuels, which release carbon dioxide and add to global warming.
- **Blue hydrogen** Same as gray hydrogen, but the carbon is captured and sequestered.
- **Green hydrogen** Made without carbon emissions by using renewable electricity to split water.
- **Gold, White and Natural hydrogen** are all the same thing. Tapped from natural subsurface accumulations.
- **Orange hydrogen** Stimulated by pumping water into deep source rocks.



It's the **most common element** in the universe



**75%** of all mass in the Universe is hydrogen



**90%** of all the atoms in the universe are hydrogen



The Olympic flame is thought to be sourced from constantly burning natural hydrogen found in Turkey



The only product of the combustion is water vapour.

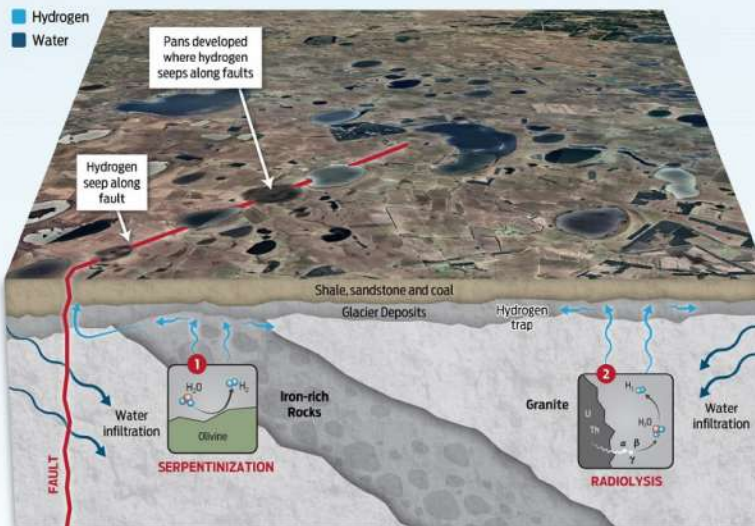
Hydrogen burns explosively in air (like methane or petrol), but does not produce any greenhouse gases, like CO<sub>2</sub>.



Natural hydrogen reaches the surface of the Earth at Yanartas in southwestern Turkey, where **flames have been burning continuously for at least 2 500 years.**

These burning gases contain **7.5 -11% hydrogen.**

Natural hydrogen found in Mpumalanga is formed continuously by geological processes - the energy to split hydrogen from water is provided by **1** geothermal heat (serpentinization of iron-rich rocks) or **2** naturally occurring radioactivity.



Natural hydrogen has been exploited from a **180m deep borehole in Mali**. The hydrogen is used to power a piston engine which produces electricity via a 30 kilowatt generator supplying electricity to the nearby village.



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