FACT SHEET

Green hydrogen

FORTESCUE FUTURE INDUSTRIES

What is hydrogen?

- The most abundant element on Earth
- The lightest and smallest element, 14 times lighter than air
- Colourless, odourless and tasteless
- Non-toxic and non-poisonous
- Able to be released without contributing to atmospheric or water pollution
- Can be stored in large quantities for long periods of time

What is green hydrogen?

Although its supply is infinite, hydrogen is not commonly found in its pure form in nature.

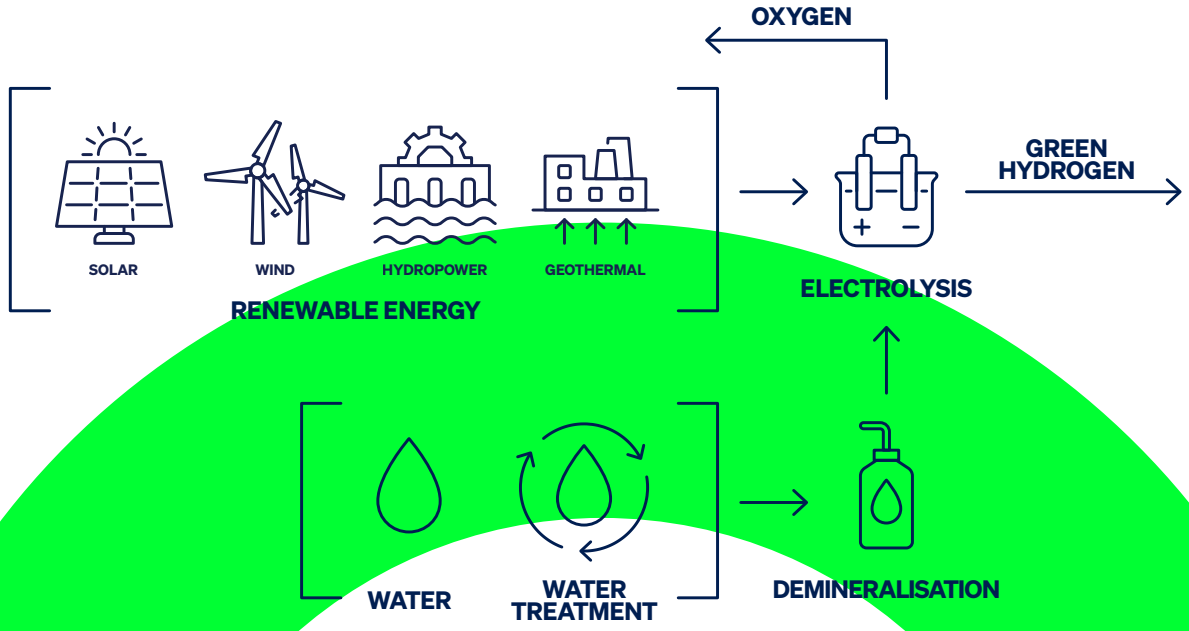
It can be manually produced through a process called electrolysis. This process requires electricity and when achieved using renewable energy resources like solar, wind, hydropower or geothermal energy with zero carbon dioxide emissions, the result is green hydrogen.

How is it made?

Electrolysis is achieved by running electricity through demineralised water, to split the water into green hydrogen and oxygen.

The resulting oxygen is released back into the atmosphere, and the green hydrogen is able to be used domestically or exported for uses around the globe.

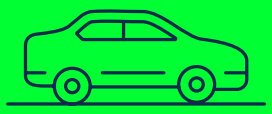
Green hydrogen production process



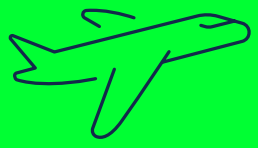
How is green hydrogen used?

Green hydrogen is the practical and implementable solution that will revolutionise the way we power our planet, while decarbonising heavy industry and creating jobs globally.

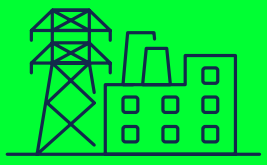
Green hydrogen is the fastest way to decarbonise hard to abate sectors such as heavy haulage, shipping and industry. It can be:



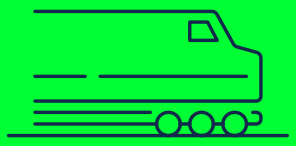
Used to power hydrogen fuel-cell electric vehicles including trucks and drill rigs – particularly for long distances and heavy haulage



Used to create synthetic aviation fuels to replace aviation kerosene, or as hydrogen in fuel-cells, helping decarbonise the aviation industry



Used to replace fossil fuel based hydrogen in industrial processes



Made into green ammonia for use as a fuel for shipping and rail and to create green fertilisers for the agriculture industry

Is green hydrogen safe?

Many of green hydrogen's properties make it safer to handle and use than other commonly used fuels. Hydrogen is:

- Non-toxic
- Unable to combust without an oxidiser such as oxygen
- Able to dissipate rapidly, because it is much lighter than air
- Hydrogen flames have a lower radiant heat than other typical fuel sources. This makes them less likely to spread and create secondary fires.

The requirements for the safe production, storage and use of hydrogen are widely understood. FFI's hydrogen processing infrastructure follows the principle of inherently safer design; ensuring hazards are eliminated where possible, reduced through substitution or controlled through engineering solutions.

How is green hydrogen transported?

Green hydrogen can be safely transported:

- As a compressed gas and sent by pipelines, truck or rail transport
- Liquefied at a very low temperature and sent as liquid green hydrogen in marine tankers, trucks or rail
- Converted into ammonia, synthetic hydrocarbons or liquid organic hydrogen carriers (LOHCs) or methyl cyclohexane (MCH) and sent by chemical tanker ship.

Through FFI, Fortescue Metals Group (Fortescue) will use green hydrogen to decarbonise the company's mining fleet including light vehicles, trucks and trains. Fortescue has announced an ambitious emissions reduction goal to achieve carbon neutrality by 2030, positioning the company as a leader in addressing the global climate change challenge. Producing green hydrogen is key to achieving this goal.