



H₂REFUEL & Renewable Hydrogen Information Sheet

What is renewable hydrogen?

Hydrogen can be produced in many ways, but in order for it to be considered "renewable hydrogen" or "green hydrogen", it must be produced via the well-proven process of electrolysis, using renewable energy.

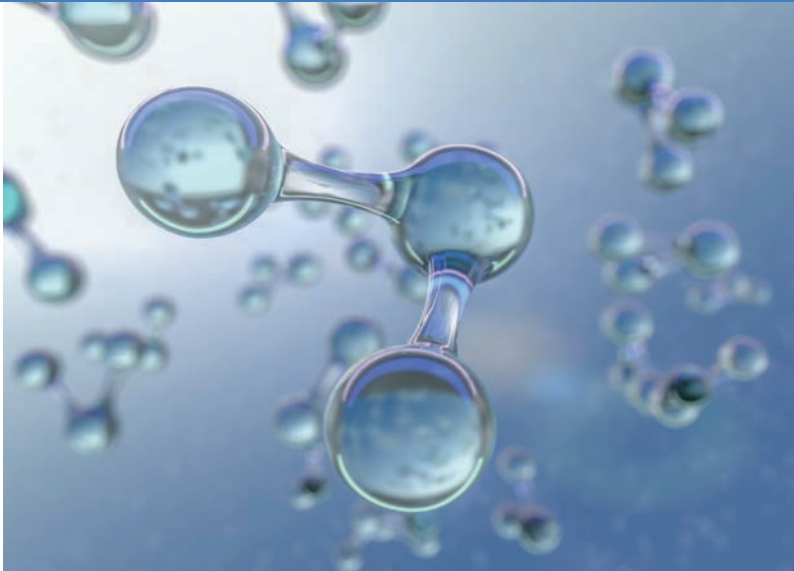
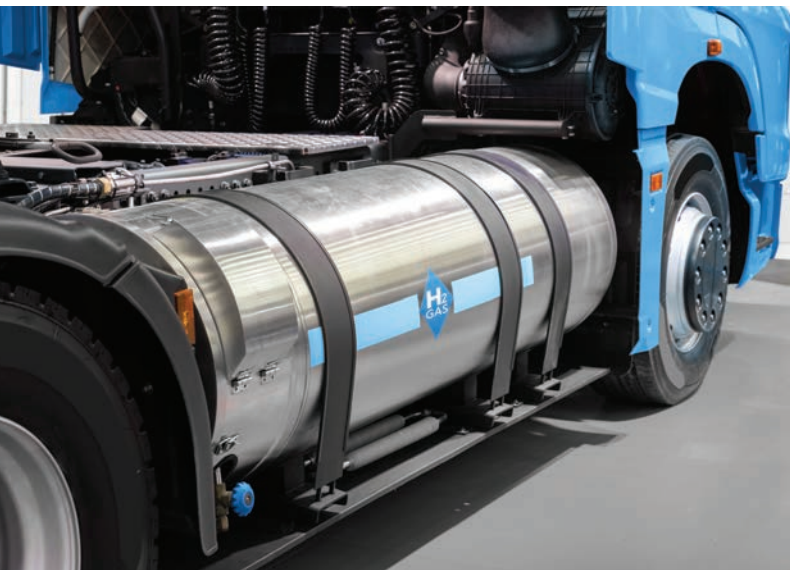
The two inputs necessary in this process are renewable electricity and a sustainable water source. The renewable electricity splits the water molecule inside of the electrolyser, into its constituent hydrogen and oxygen components.

The hydrogen can later be put to work via other technologies (such as a fuel-cell).

As there is no direct carbon emissions generated in the production of the hydrogen (because of the use of renewable energy from wind or solar), the potential energy residing in the hydrogen can be considered as clean, green or renewable.

How is renewable hydrogen then used?

The renewable hydrogen can then be put to work through the well-understood technology of a hydrogen fuel-cell.



A fuel-cell recombines the hydrogen molecules with molecules of oxygen in the air. As the two combine, an electrical current is produced, which is later used to drive the electric motors of a vehicle (in this particular application) and the vehicle emits zero carbon emissions.

The only byproducts of this process are low-grade heat and water clean enough to drink. Provided the hydrogen was created using renewable energy (solar, wind), there are essentially no carbon emissions involved in the fuel making and usage process.

Not just for heavy vehicles

Hydrogen is often described as the fuel of the future as it is seen as a safe and efficient alternative to petrol and diesel. It is simple and cost-effective to manufacture and can be stored as a liquid or gas until it is required for use. Although renewable hydrogen is especially suited to heavy haulage and long distance applications, it is also a viable zero emission fuel source for buses, light vehicles and materials handling equipment.

Winton H2REFUEL will serve heavy vehicles refueling at site and the renewable hydrogen produced can also be supplied to other businesses and satellite refueling stations in other regions (via trailer cartage and storage).



Safe, Reliable & Cost Effective

Lochard Energy are specialists in the development, construction and operation of energy infrastructure in Victoria and are experts in the safe and reliable operation of a major hazardous facility. Our Iona Gas Storage Facility plays a vital role in Australia's east-coast gas market (and indirectly the electricity market), providing Victoria with over 40% of its natural gas needs during peak Winter periods.

Our Major Projects team have expanded Iona's capacity by nearly 40% over the past 5 years and our Operations team have an impeccable safety record and excellent community engagement in and around Port Campbell, where Iona is located.

Members within our Energy Developments team (leading the H2REFUEL initiative) have also been instrumental in the development, delivery and operation of some of Australia's largest and most iconic wind and solar projects. These expertise are being leveraged and showcased in our Winton H2REFUEL project.

Foundational to our business, is safety, reliability and cost-effectiveness. Working together, we can help organisations gain a greater appreciation of the economic, environmental and social benefits, associated with cleaner transport.