



Higher energy density than batteries when compressed



Can be stored, transported & exported



Can be made cleanly using water + renewables



Can provide energy to all parts of the economy



Produced from many energy sources



Can be stored as a liquid, gas or metal hydride

Hydrogen Colour Codes



Green

Green hydrogen is produced through water electrolysis process by employing renewable electricity.



Blue

Blue hydrogen is sourced from fossil fuel, however, the CO2 is captured and stored underground (carbon sequestration). As no CO2 is emitted, the blue hydrogen production process is categorised as carbon neutral.



Grey

Grey hydrogen is produced from fossil fuel and commonly uses steam methane reforming (SMR) method.



Black or Brown

Black or brown hydrogen is produced from coal. The black and brown colours refer to the type bituminous (black) and lignite (brown) coal.



Turquoise

Turquoise hydrogen can be extracted by using the thermal splitting of methane via methane pyrolysis.



Purple

Purple hydrogen is made though using nuclear power and heat through combined chemo thermal electrolysis splitting of water.



Pink

Pink hydrogen is generated through electrolysis of water by using electricity from a nuclear power plant.



Red

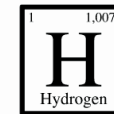
Red hydrogen is produced through the high-temperature catalytic splitting of water using nuclear power thermal as an energy source.



White

White hydrogen refers to naturally occurring hydrogen.

Hydrogen Facts



As interest in renewable energy grows worldwide, Queensland is at an important stage in developing the hydrogen industry due to our abundant renewable energy resources, quality infrastructure, and experience as a global energy supplier. Hydrogen is a clean, renewable fuel that can be used in transport, power supply, and a range of industrial processes. In the future, green hydrogen—made using renewable energy—will support the decarbonisation of transport and industry.



Most of the hydrogen on earth is found in the Oceans.



60mls of Hydrogen is in a 600ml bottle of water.



Green hydrogen is produced using renewable energy.



For the purposes of effective storage and transportation, Hydrogen may be converted to Ammonia.



Hydrogen is flammable, lighter than air and leaks easily.

Electrolysis

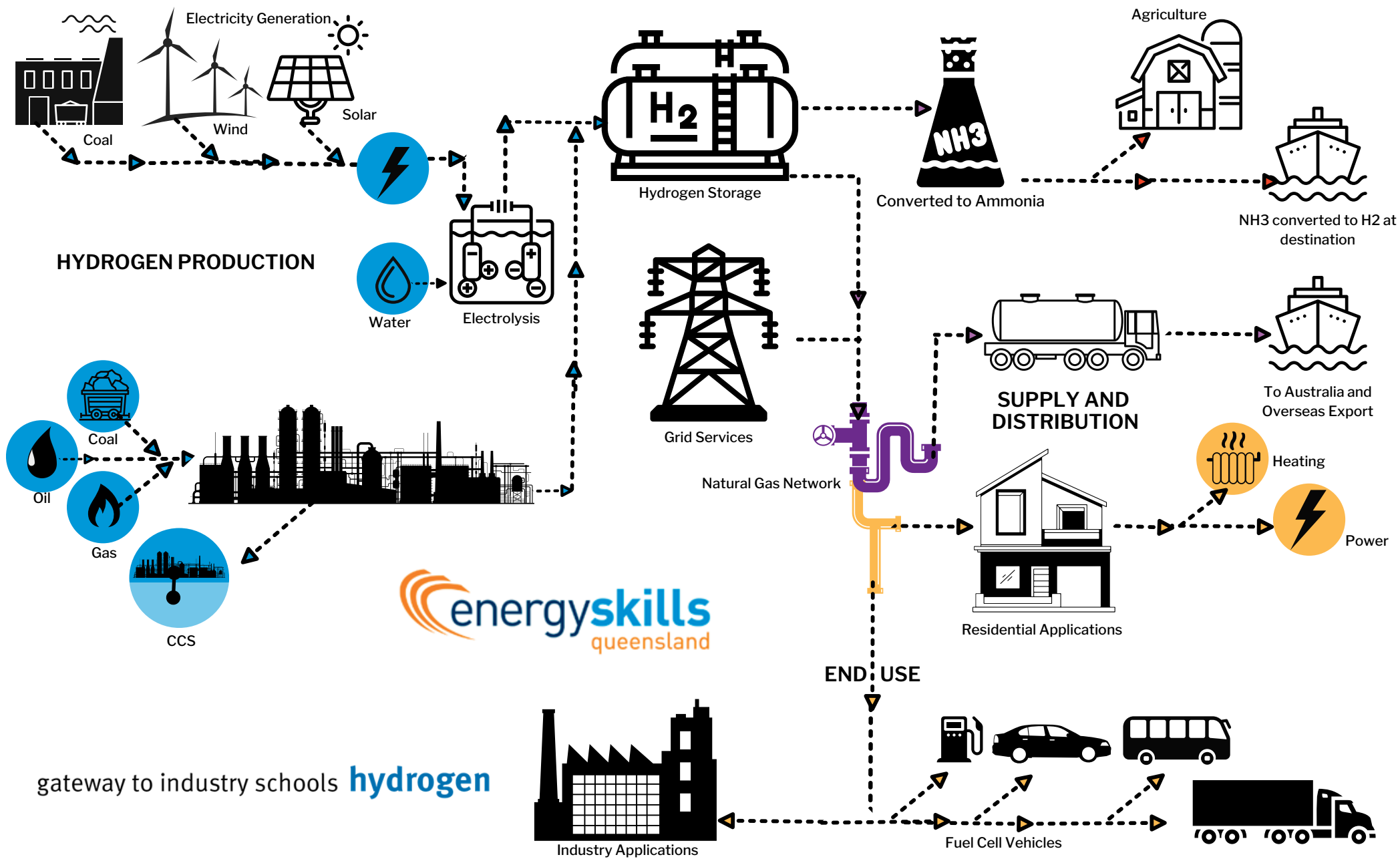
On-site hydrogen production through water electrolysis is a reliable, cost-effective and sustainable alternative to gas reformation. Energy is fed into the electrolyser which splits the water molecules to create hydrogen and oxygen.



Fuel Cell

A fuel cell is an electrochemical energy conversion device that creates a chemical reaction between hydrogen and oxygen from the atmosphere to generate electricity. It does not burn or compress hydrogen, the catalyst within the fuel cell generates the electricity to drive the vehicle. After the chemical reaction creates electricity, the only emissions are water vapour.





The Gateway to industry Schools Program for Hydrogen (GISPH2) is an initiative of the Queensland Government.