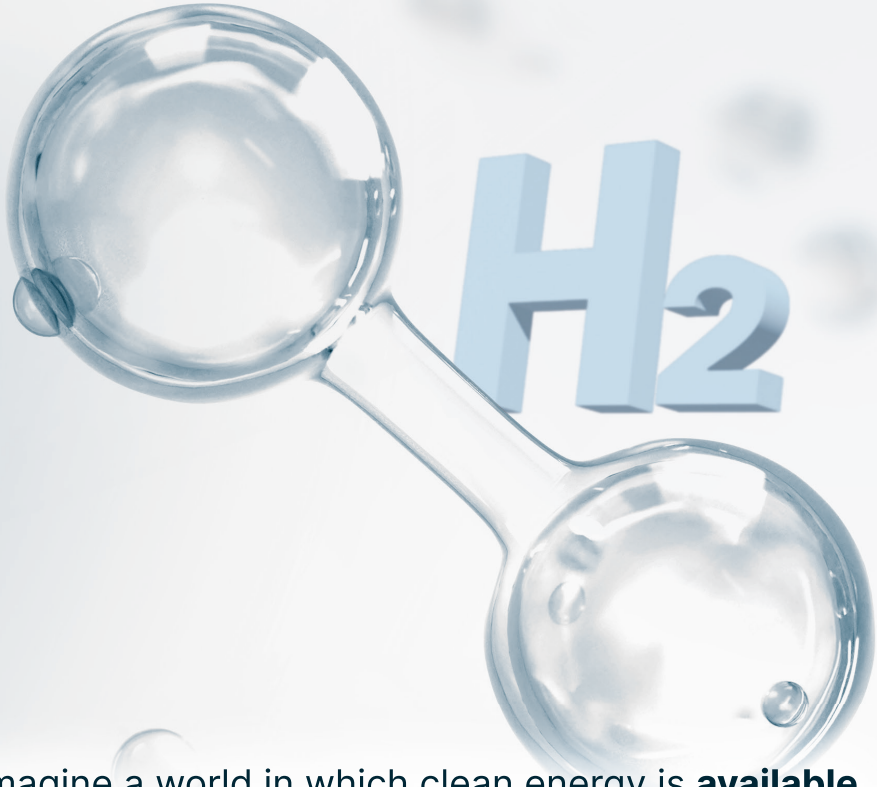
BUILT FOR HYDROGEN

Valves in use at **hydrogen filling stations**

HEROSE

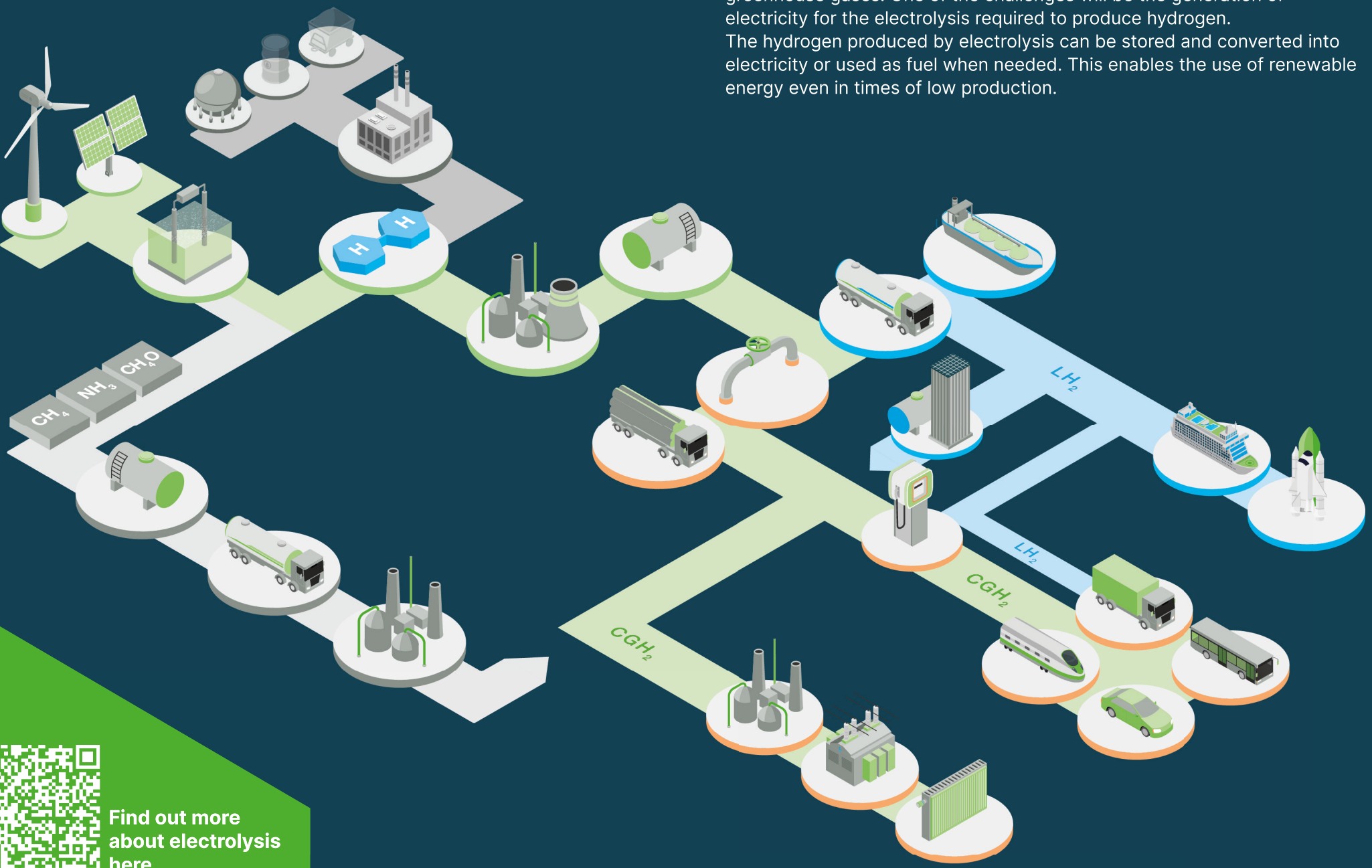


Imagine a world in which clean energy is **available without limits**, in which cars and factories only emit clean water vapor. This future is getting closer and closer.
The key to this? An invisible, light gas that can be produced directly from **renewable energy**: hydrogen.

HYDROGEN

Supply chain

Hydrogen is a flexible energy storage medium that, together with the volatile production of solar and wind energy, is a solution for reducing greenhouse gases. One of the challenges will be the generation of electricity for the electrolysis required to produce hydrogen.
The hydrogen produced by electrolysis can be stored and converted into electricity or used as fuel when needed. This enables the use of renewable energy even in times of low production.



Find out more about electrolysis here.

HYDROGEN FILLING STATION

Reaching your destination with hydrogen

A hydrogen filling station does not differ significantly from a conventional filling stations in terms of its function. However, due to the properties of hydrogen, there are a few important special features:

Production or delivery

At hydrogen filling stations, the required hydrogen can either be produced **directly on site** or be **delivered**.

Some filling stations have an electrolysis plant, which means that the required hydrogen can be produced directly on site. Electricity from renewable energies is usually used. Alternatively, the hydrogen can be delivered in special tank vehicles in liquefied form (LH2) or in gaseous form at high pressure (GH2).

High pressure during transport?

No problem with our new High-pressure Globe Valve.

Please contact us at info@herose.com

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Storage of hydrogen

Hydrogen is stored at the filling station either in gaseous or liquefied form. When storing gaseous hydrogen, it is particularly important to protect against high pressures of up to 500 bar. When stored in liquefied form, the evaporation of hydrogen must be minimized in order to prevent losses.

Type 06810
High-pressure
Safety Valve

Type 11C01
Top Entry Valve
FullX

2

Compression and buffer storage

To refuel the vehicle, the hydrogen pressure must be increased and buffered. The pressure can rise up to over 1,000 bar in order to be able to refuel several vehicles in a short period of time.

Type 06820
High-pressure
Safety Valve

3

Cooling and refuelling

Cooling using a heat exchanger is necessary to prevent the tank from overheating. The hydrogen is cooled down to –40 °C before refuelling and then pumped into the tank at high pressure. In the vehicle system itself, the hydrogen is stored in special tanks at up to 700 bar. This is then converted into electrical energy via a fuel cell to power the vehicle.

Type 06810
High-pressure
Safety Valve

Type 06820
High-pressure
Safety Valve

An alternative with advantages

Fast refuelling

Refuelling with hydrogen only takes a few minutes.

High range

Hydrogen-powered vehicles, especially fuel cell vehicles (FCEVs), already offer ranges of 500 to 700 km. This makes hydrogen an ideal fuel, especially for long-distance vehicles such as trucks.

Climate-friendly

When hydrogen is used, one thing is created: water vapor. If the hydrogen is produced using electricity from renewable energies, the entire process is considered CO2-neutral.

Easy to integrate

Hydrogen filling stations can be easily integrated into the existing filling station network. In addition, the use of hydrogen vehicles is similar to that of conventional diesel or petrol-powered vehicles.

Safe

Hydrogen tanks and filling stations are considered extremely safe. If a tank has a leak, the hydrogen diffuses.

Contact

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