



Lhyfe

Caso de éxito de los micro valles en la producción del hidrógeno renovable

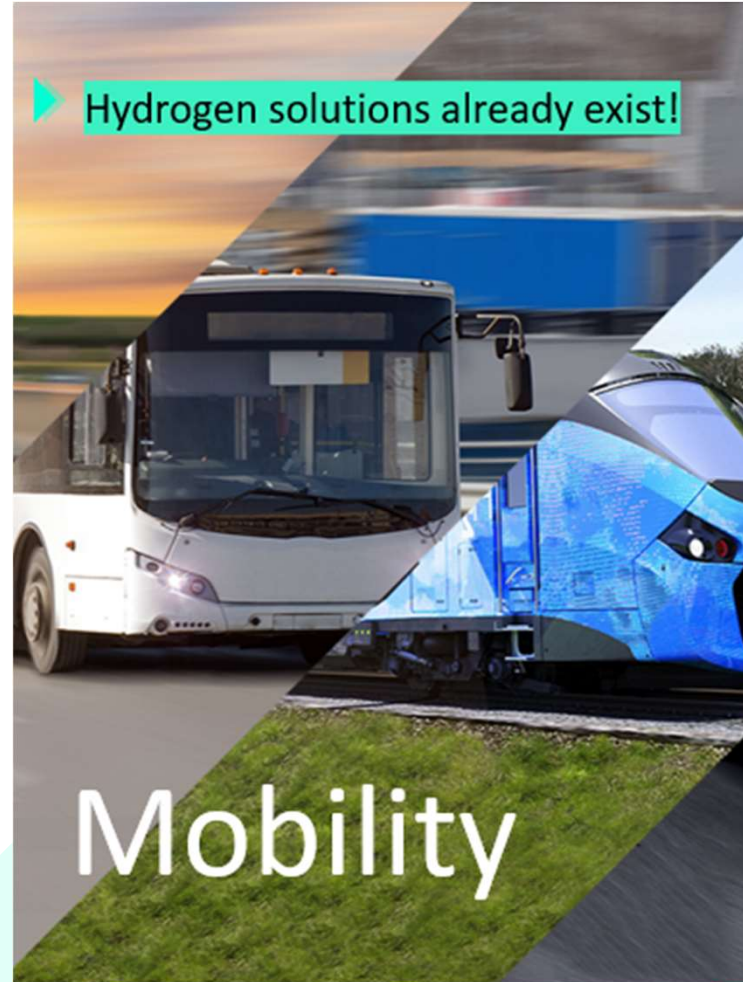




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Algunas personas creen que el hidrógeno renovable es el Fututo. Nosotros pensamos que es aquí y ahora.

Matthieu Guesné - CEO



▶ Different types of hydrogen



Carbon Hydrogen

Produced by

- ▶ Steam Methane
- ▶ Reforming (SMR)
- ▶ Coal gasification ...



Low-Carbon Hydrogen

Produced by

- ▶ An electrolyser, powered by the energy grid mix (potentially gas-fired power stations depending on demand)
- ▶ or by SMR with CO₂ capture (CCS)

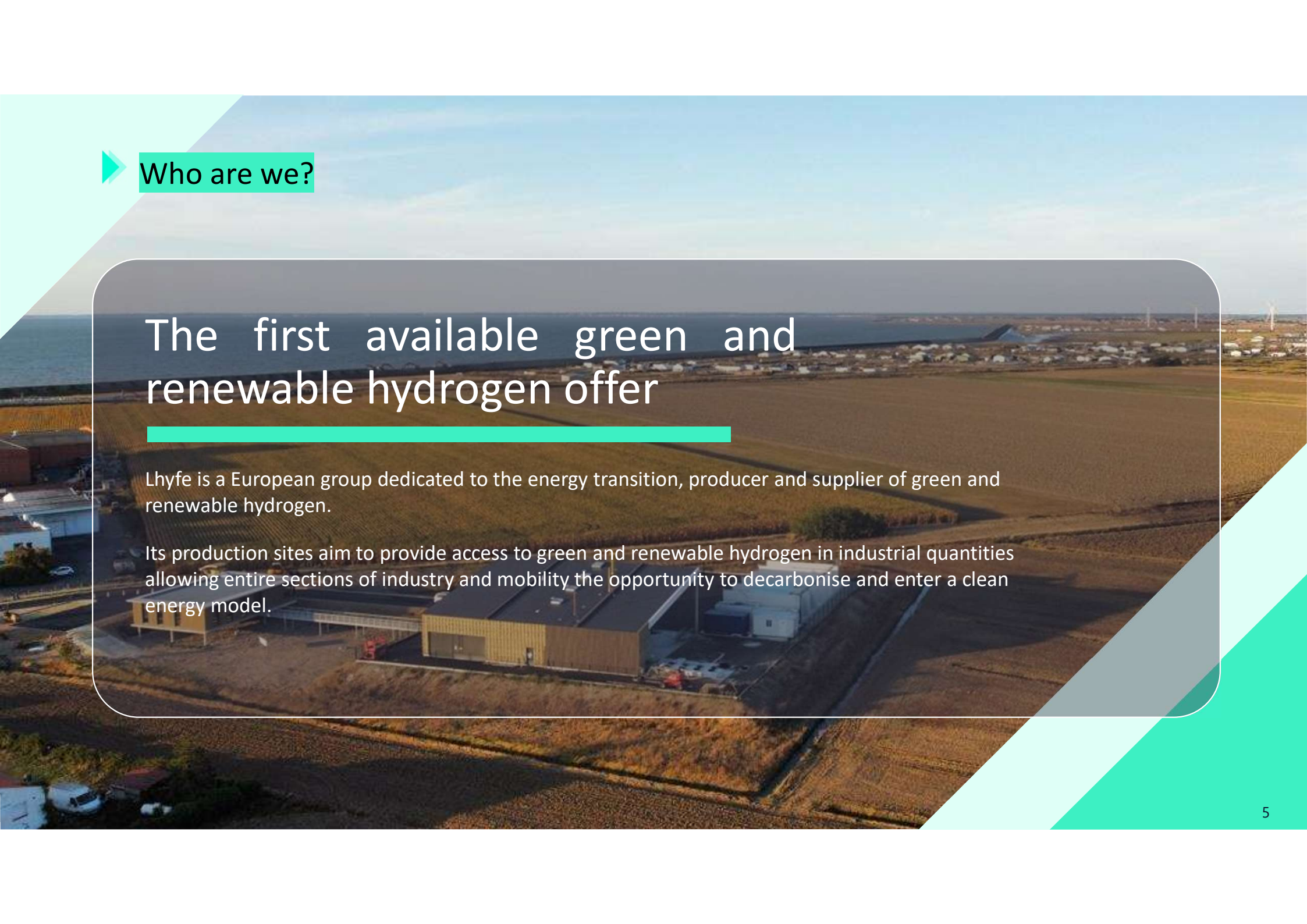


Renewable Hydrogen

Produced by

- ▶ An electrolyser powered by wind, solar or hydro, with guarantees of origin (European certificate market)

Lhyfe



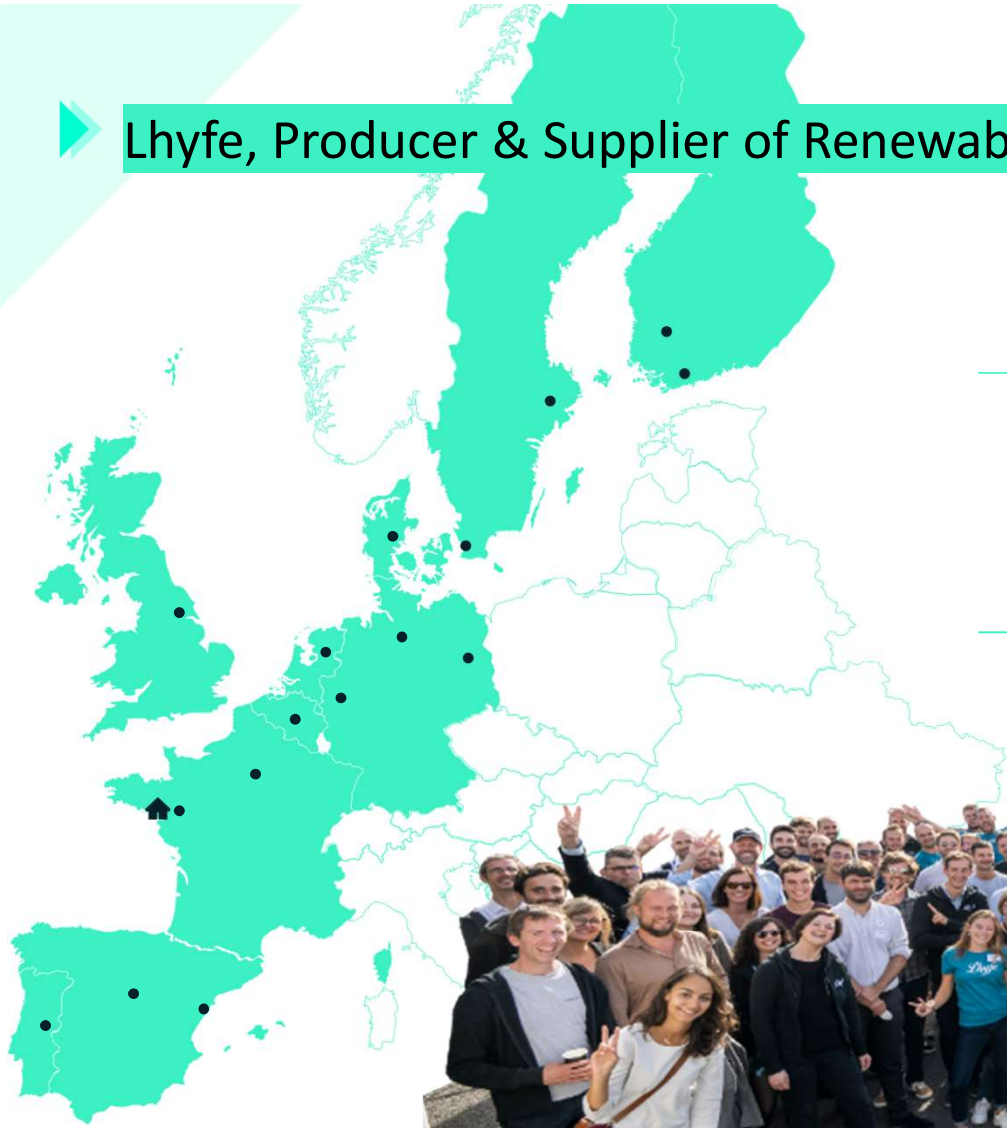
▶ Who are we?

The first available green and renewable hydrogen offer

Lhyfe is a European group dedicated to the energy transition, producer and supplier of green and renewable hydrogen.

Its production sites aim to provide access to green and renewable hydrogen in industrial quantities allowing entire sections of industry and mobility the opportunity to decarbonise and enter a clean energy model.

▶ Lhyfe, Producer & Supplier of Renewable Hydrogen



● Offices 🏠 R&D Center

200
Talented people (2023)

10
Countries



▶ **Our purpose**

Building a more breathable world

▶ **Our vision**

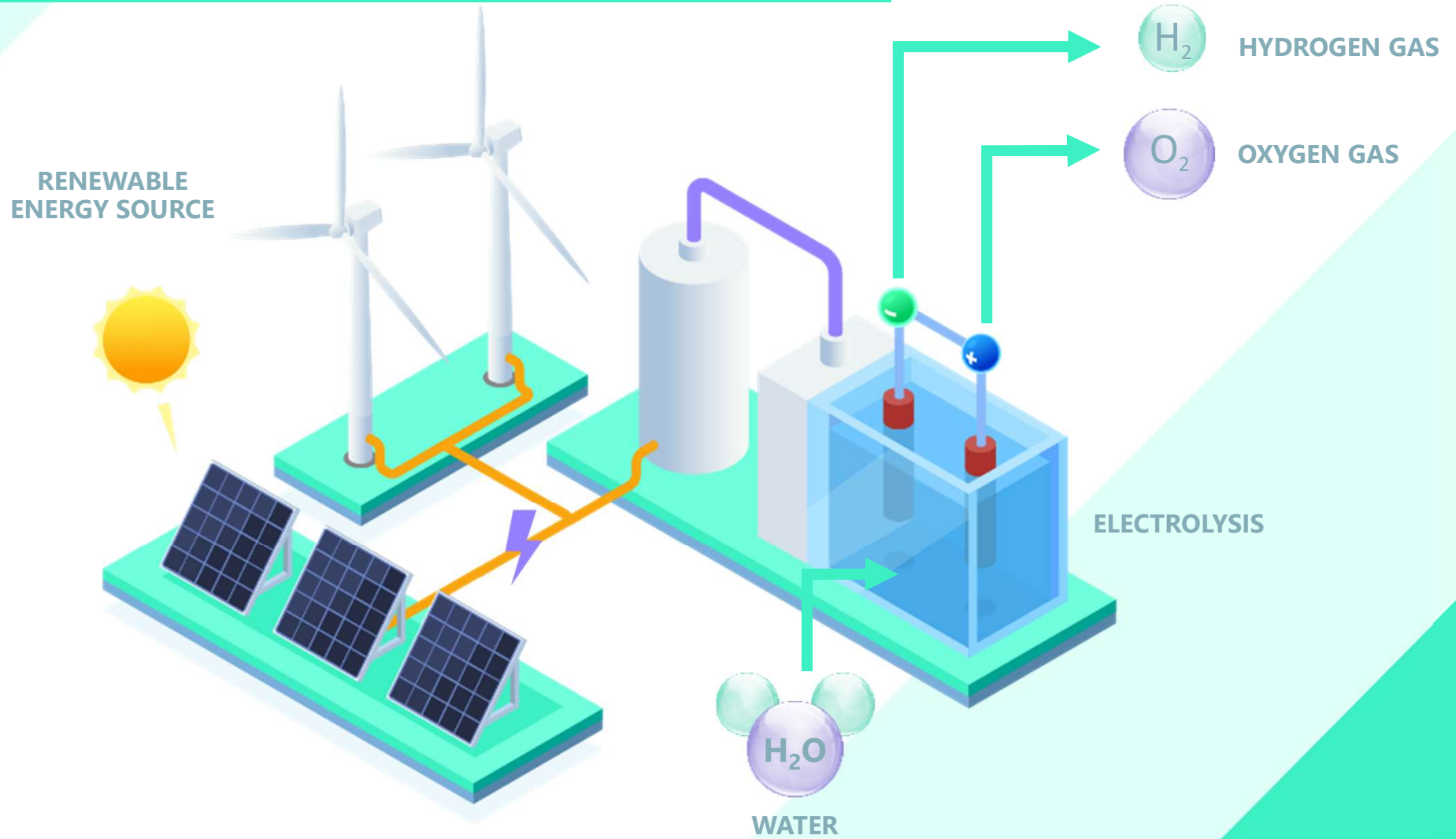
Replacing fossil fuels

▶ **Our ambition**

Lhyfe aims to become a green unicorn by avoiding the emission of 1 billion tons of CO₂.



How to Produce Renewable Hydrogen



► Our production sites



Onshore hydrogen

Buléon – 5MW
2023

Offshore hydrogen



Sealhyfe – 1MW
2023

Onshore hydrogen



Bouin – 1MW
2021

Plant under construction

Plant in operation

Onshore hydrogen

Botnia – 1,5MW
2023

Brake – 10MW
2024

Onshore hydrogen

Schwäbisch Gmünd – 10MW
2024

Onshore hydrogen



DB Tübingen – 1MW
2023

Onsite hydrogen



Onshore hydrogen



Bessières – 5MW
2023

▶ Bouin (France)



Opening:
H2 2021

Key figures:
1 MW
300 kg H₂/day


Plant upgrade:
IBN 2024/1.HJ 2,5 MW
1,000 kg H₂/day

Power source:
Onshore wind (direct connection)

Water supply:
Sea water

Applications:





► **First Offshore pilot plant : LE CROISIC (France)**

Opening:
September 2022

Key figures:
1 MW
400 kg H₂/day

Power source:
Offshore wind (direct connection)

Water supply:
Sea water

from May 2023:
12-month operational test of the floating electrolyzer, which is supplied with electricity directly from the floating wind turbine.

► VHyGO, Buléon (France)



Opening:
2023

Key figures:
5 MW
2,000 kg H₂/day

Power source:
Wind farm

Applications:



► Corridor H₂ Occitanie, Bessières (France)

Opening:
2023

Key figures:
5 MW
2,000 kg H₂/day

Power source:
Wind farm

Applications:



▶ DB Project H2goesRail, Tübingen (Germany)

Opening:
2023

Key figures:
1 MW
400 kg H₂/day

Power source:
Wind

Water supply:
Drinking water (network)

Applications:



▶ H₂ Aspen: SCHWÄBISCH GMÜND

Opening:
2024

Key figures:
10 MW (2x5MW)
2,500- 4,000 kg H₂/day

Power source:
Solar and wind farm

Water supply:
Drinking water (network)

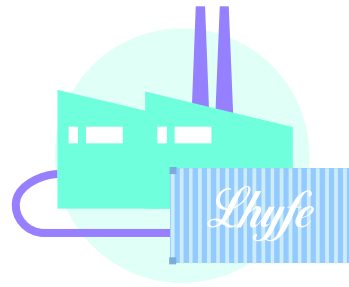
Applications:



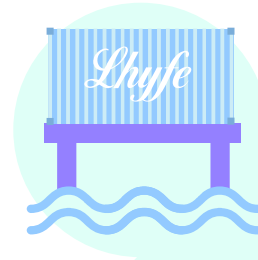
▶ Hydrogen solution adapted to your needs



Onshore unit



Onsite unit
Directly connected to your asset



Offshore unit



▶ Hydrogen solution adapted to your needs



Bulk delivery

We deliver hydrogen with our containers specially designed to safely transport high-capacity compressed gas right to your station, employing advanced technologies and materials to maintain integrity and purity during transit.

Plug & play connexion

- ▶ **Dedicated interface on your refuelling station**
- ▶ **Seamless integration and facilitating convenient hydrogen transfer between our transportation system and your facility.**

Uninterrupted service

- ▶ **Real-time monitoring of hydrogen consumption and container stock**
- ▶ **Connected to our central platform**
- ▶ **Automated container delivery scheduling based on your consumption**

Data monitoring

- Our dedicated platform:
- ▶ **Offers comprehensive monitoring of operational parameters**
 - ▶ **Provides transparent access to your hydrogen activity for informed decision-making.**

▶ Hydrogen solution adapted to your needs

Pipeline supply

For large volumes of hydrogen, from 2 tons per day, Lhyfe develops and installs a hydrogen production unit on your site or close to your company, coupled with a reliable supply system through pipelines.

On-site Projects

- ▶ End-to-end solutions for your hydrogen needs
- ▶ Customized site development near your facility
- ▶ Dedicated pipeline for reliable hydrogen supply tailored to your operations



▶ Industry



Chemical

- ▶ Numerous potential applications in the chemical industry.
- ▶ Serves as a sustainable feedstock to produce various chemicals, including ammonia, methanol, and other important compounds.



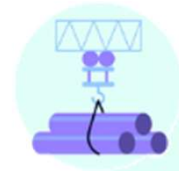
Cement

- ▶ Replaces traditional fossil fuels like coal or natural gas.
- ▶ Enables a substantial reduction in carbon emissions
- ▶ Mitigates environmental impact



Glass

- ▶ Enhances glass manufacturing sustainability
- ▶ Reduces carbon emissions
- ▶ Hydrogen combined with oxygen maximizes energy efficiency, greatly reducing nitrogen oxide (NOx) emissions
- ▶ Improving air quality



Metallurgy

- ▶ Serves as a reducing agent in iron and steel production
- ▶ Enables the production of high-quality metals
- ▶ Reduces the carbon footprint.



► Mobility



Refuelling station operators

- Significant emissions reductions
- Contribution to a greener planet
 - Long-term cost savings
- Enhances the reputation of your refuelling station as an eco-friendly choice



Passenger transport companies

- Significant emissions reductions and promote a cleaner, more efficient transportation industry for cars, buses, coaches, trains, ships, and planes
 - Improved air quality,
 - Enhanced passenger experience
 - Increased economic growth.



Building & Civil works companies

- Revolutionizes construction activities
- Enables carbon-neutral practices and paving the way for a more sustainable future.
- Convenient and abundant energy source for all of their operations by incorporating hydrogen vehicles



► Mobility



Local authorities

- ▶ Reduce carbon emissions with a hydrogen infrastructure
 - ▶ Enhance air quality,
 - ▶ Foster local job creation
- ▶ A cleaner and more sustainable environment for your residents.



Logistics operators

- ▶ Significant emissions reductions
- ▶ Promote a cleaner, more efficient transportation industry
 - ▶ Improved air quality,
- ▶ Enhanced passenger experience
- ▶ Increased economic growth.



Freight transport companies

- ▶ Reduce carbon emissions in the transportation sector
- ▶ A promising pathway to revolutionize goods transport, encompassing LCVs, heavy-duty trucks, and garbage fleets.



▶ From Projects to H₂ Delivery

01

Project Development

With our unparalleled expertise, we bring together a team of skilled professionals who excel in designing and implementing cutting-edge solutions.



02

Plant Construction

The construction of a hydrogen plant involves several key elements to ensure safety, efficiency, and successful project completion.



03

Production

Our hydrogen is produced from renewable energies (wind, photovoltaic, hydraulic, etc.) based on the water electrolysis technology.



04

Operation

The operation of a hydrogen production site involves rigorous safety measures to ensure the well-being of personnel and the integrity of the facility.

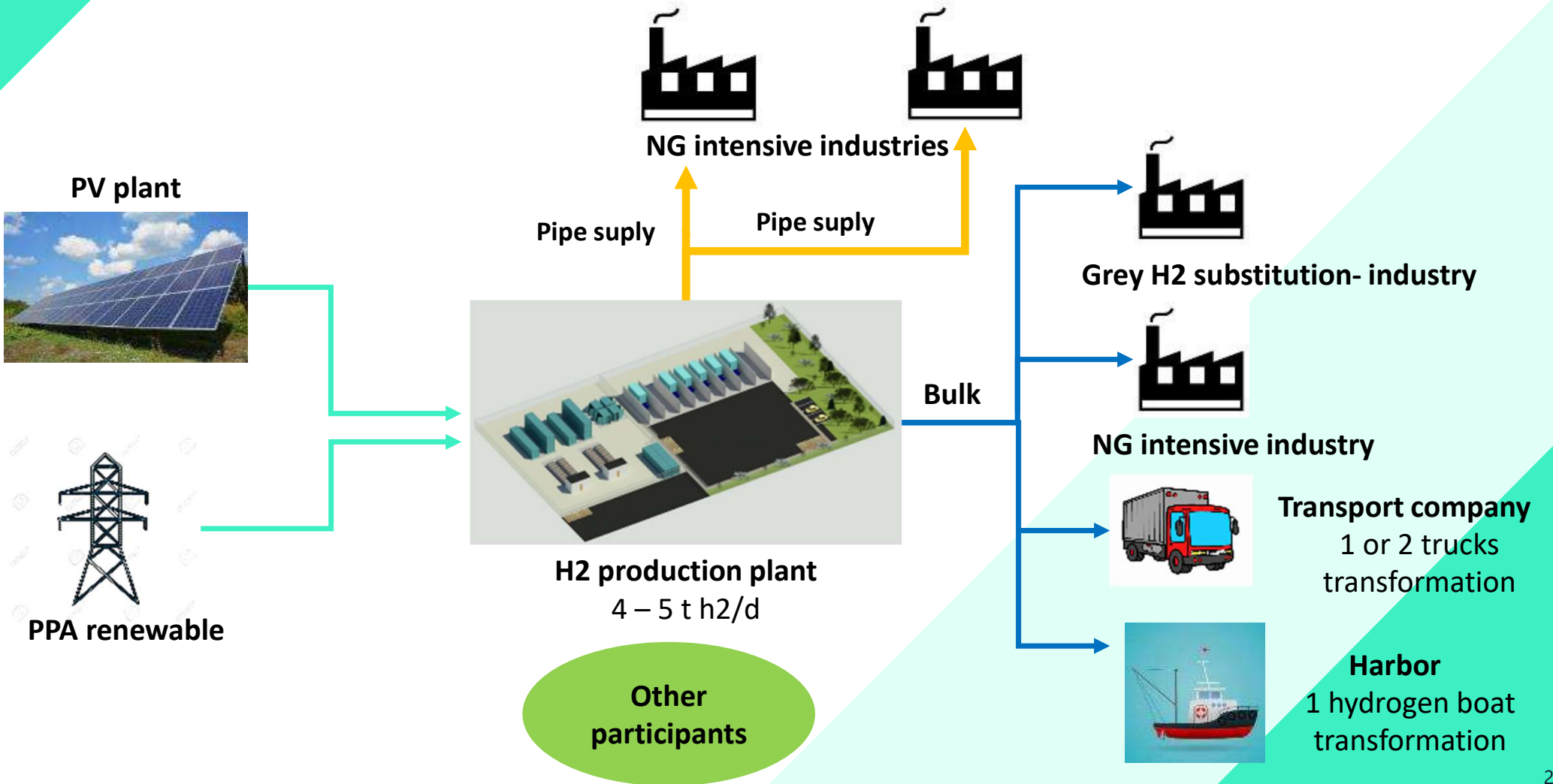
05

Delivery

As a supply chain expert, we bring you the most efficient and reliable solution through our mobile H₂ containers. We ensure continuous delivery of hydrogen, allowing you to focus on your operations without worrying about downtime.



▶ Caso de éxito: planta de Vallmoll





Contact us

Franz Bechtold Gabarró
Sales Director

699 429 309
franz.bechtold@lhyfe.com

Lhyjfe

**FOR SOME, RENEWABLE
HYDROGEN IS THE FUTURE.
FOR US, IT IS NOW.**

Lhyfe