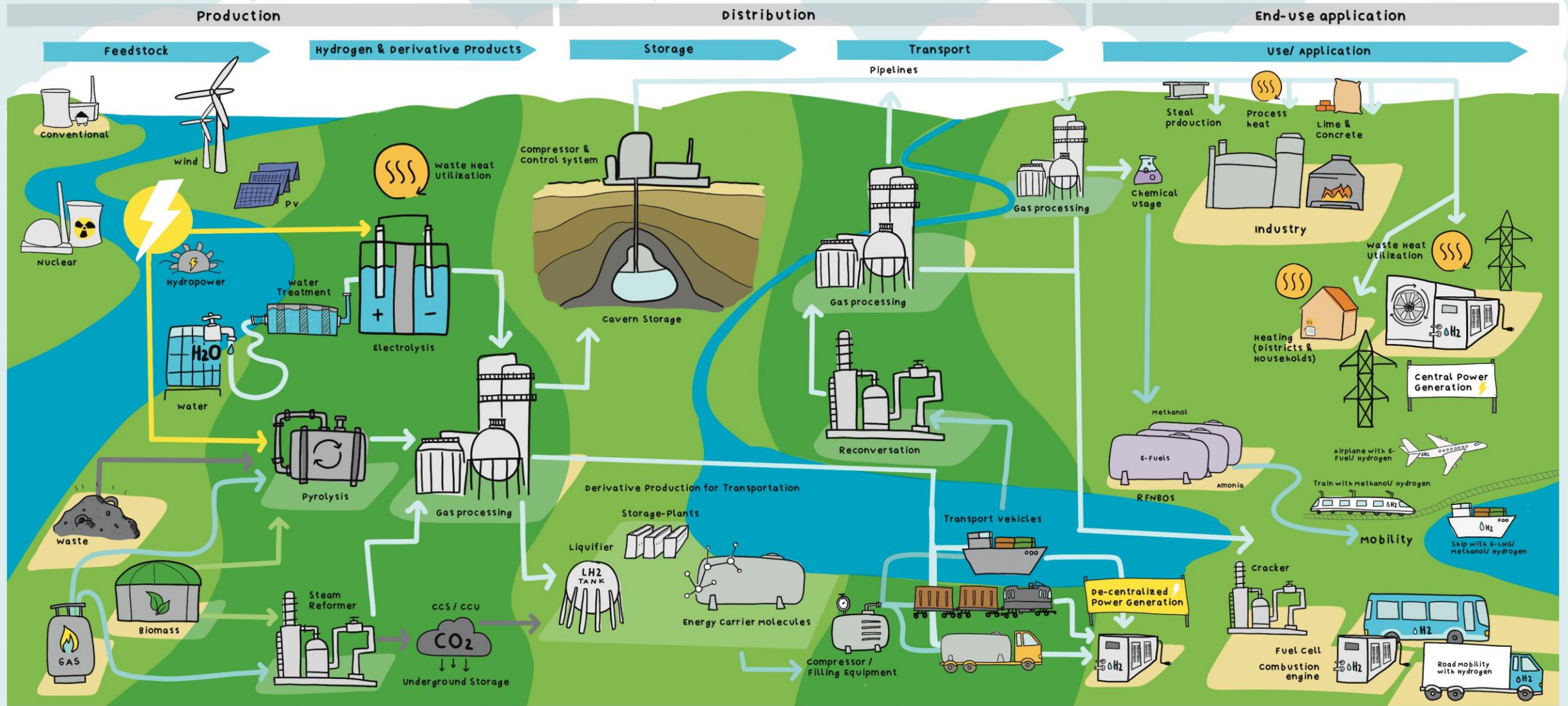


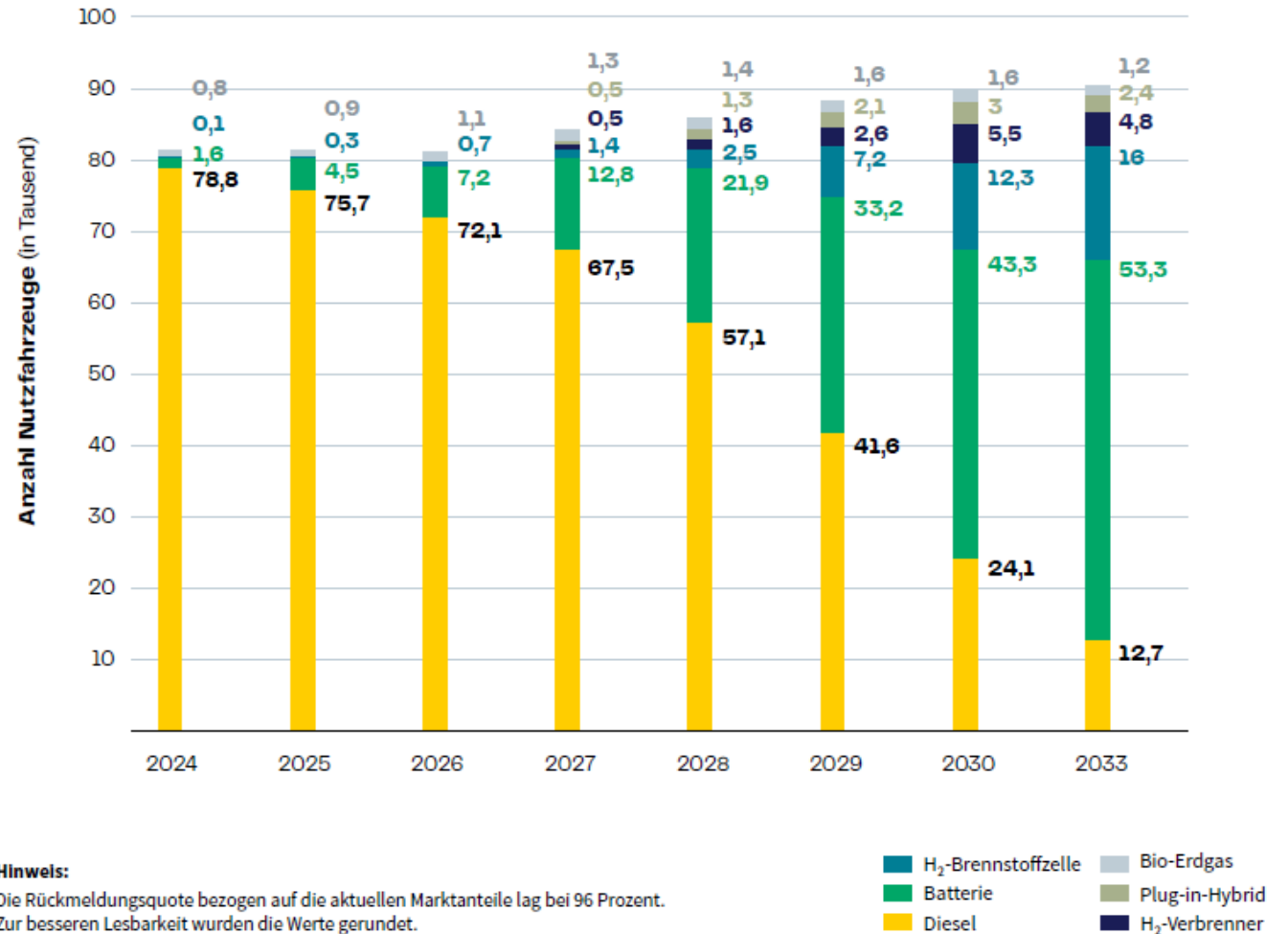
HOW DO WE ACHIEVE COMPLETE VALUE CHAINS?



Hydrogen for heavy-duty vehicles

- Ambitious reduction targets of European heavy-duty vehicles' CO₂ standards for the year 2030
- A range of drive technology options is required
- Use of hydrogen in the conventional combustion engine is the most striking addition
- Which drive technology for which use case?
 - Costs
 - Technological maturity
 - Regulatory aspects
 - Effects on/of the regional value chain (synergy effects vs. competition?)

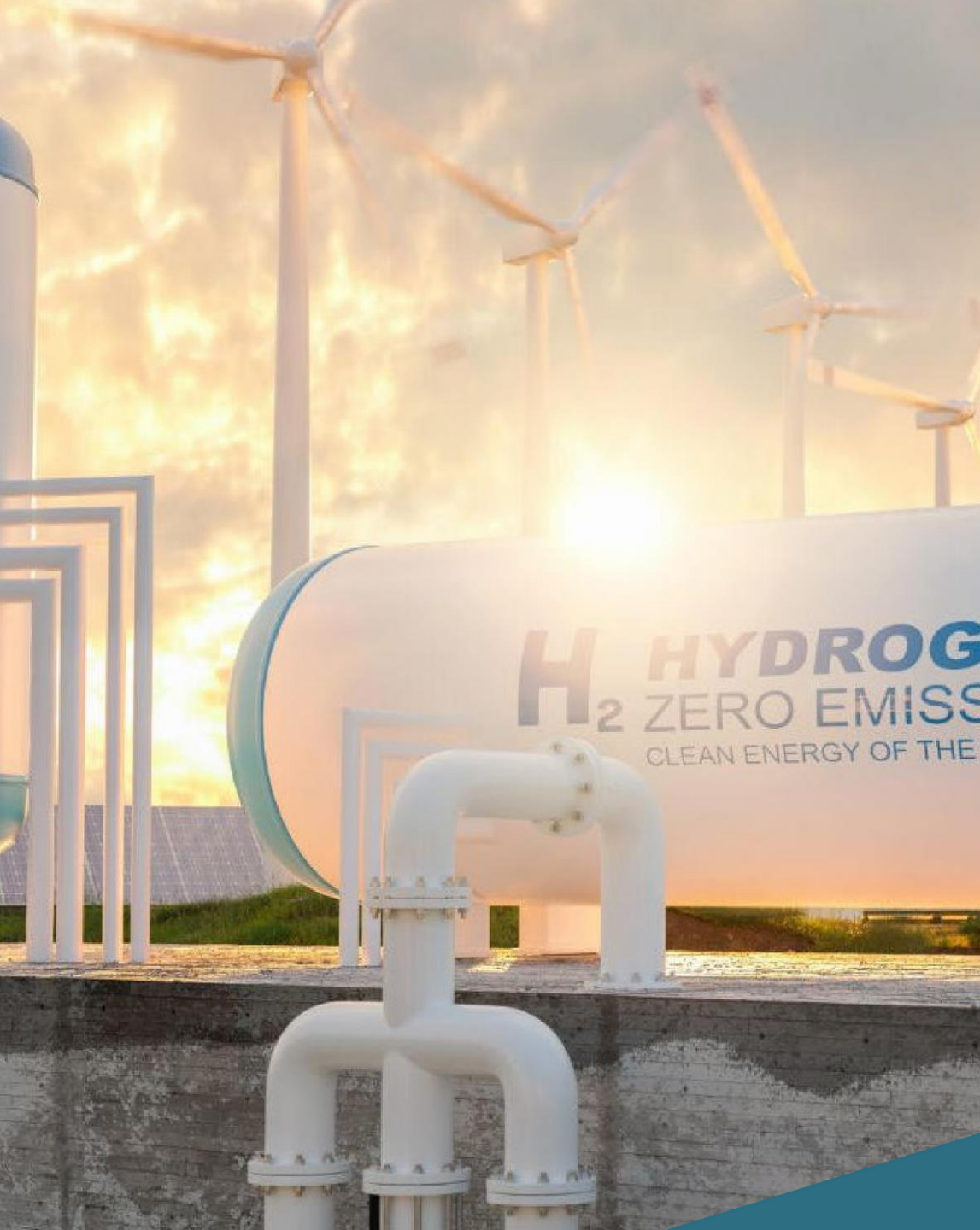
Prognostizierte Absatzzahlen schwerer Nutzfahrzeuge (N3/> 12 t)
In Deutschland laut Herstellerangaben



Hydrogen filling station infrastructure

- Rapid expansion of the public refueling infrastructure is the most important framework
- Financing the expansion of infrastructure (Government funding, private sector initiatives, through additional revenue from the CO2 components of the truck toll?)
- Regular evaluation of AFIR target achievement and comparison with vehicle ramp-up
- “Pipeline-Studie” investigates supply of H2 filling stations via pipelines (H2 hubs can reduce transportation and processing costs)
- Variety of hydrogen storage options being pursued by manufacturers as a challenge for infrastructure development (350 bar, 700 bar or in liquid form)





Interreg
North Sea

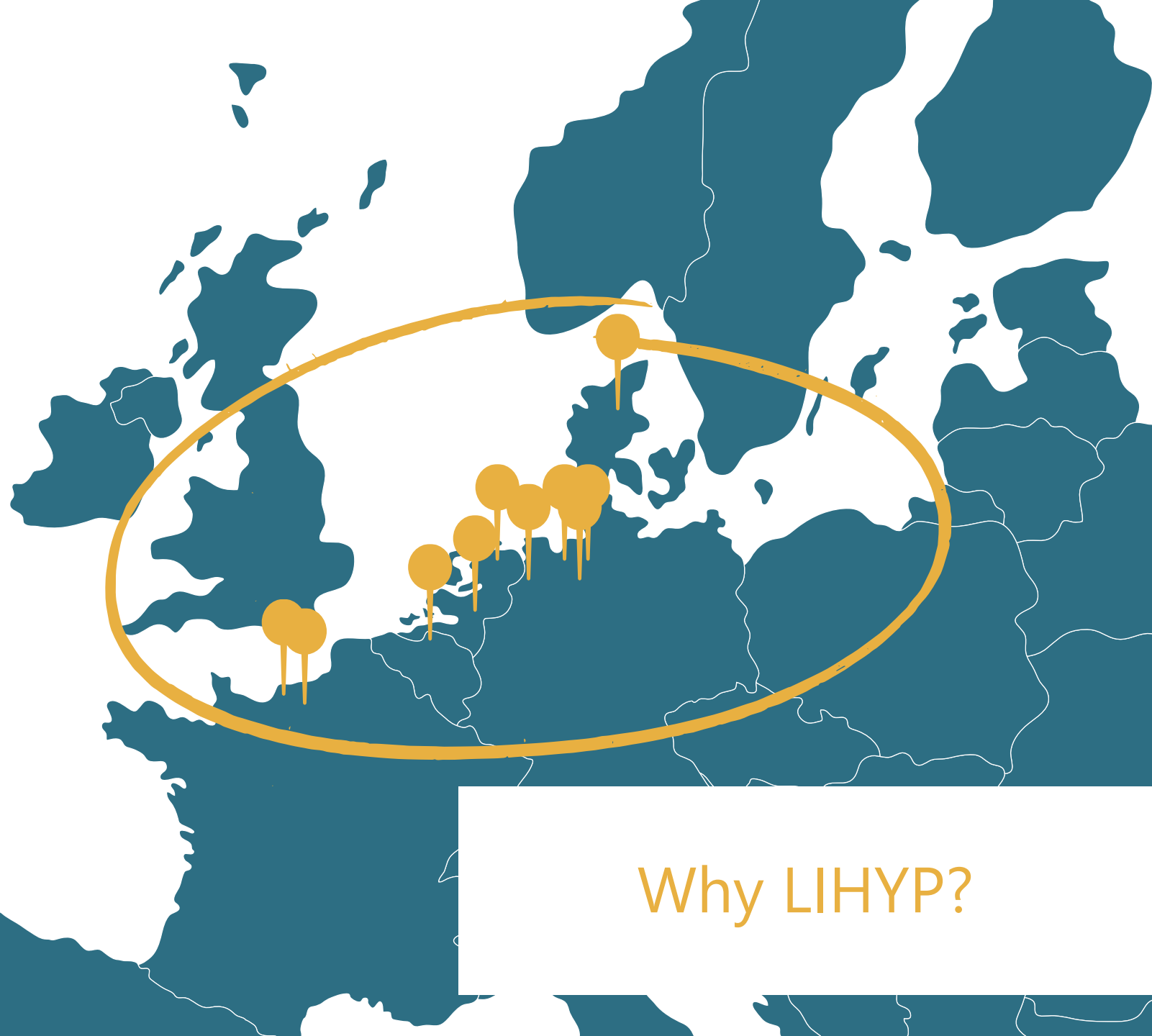


**Co-funded by
the European Union**

LIHYP

Linking Hydrogen Power Potentials

Uniting Stakeholders
to build a regional
hydrogen economy in
the North Sea
Region!



Why LIHYP?

LIHYP Pilots as showcases for solutions

- H2 driven freight train in the cross-border region GER/NL
- Living Lab Belgium – vessel in Ghent
- Hydrogen Valley Airport Goningen Airport Eelde
- Development of a local H2-HUB for city cargo
- H2 refueling station connected directly to a wind-/pv-site
- H2 driven coach in the region of Normandy



Questions for the discussion

- What role can hydrogen play in the commercial vehicle sector compared to the high demand in the industry?
- Is there a future for hydrogen in the mobility sector in general?
- Would the creation of hubs be a solution to support the ramp-up of regional hydrogen applications?