The Belgian Hydrogen Ecosystem

BELGIAN HYDROGEN COUNCIL

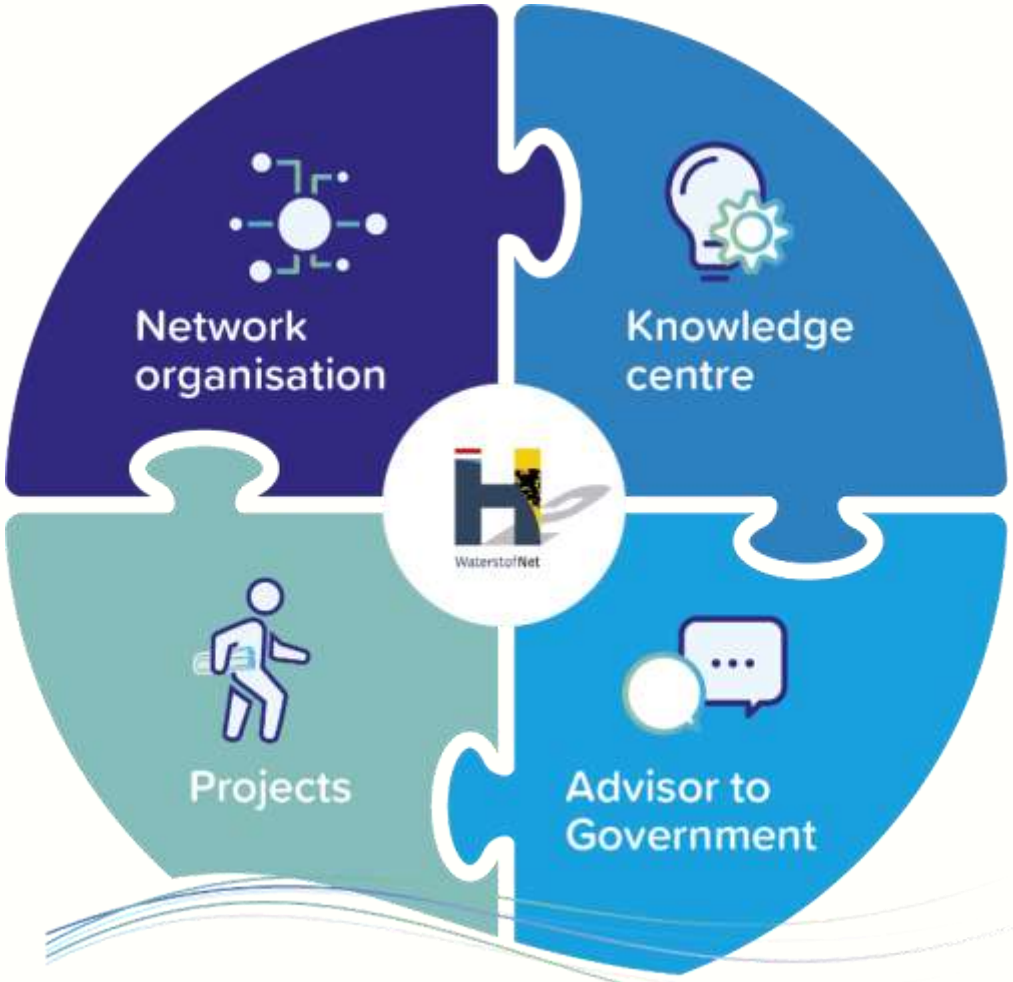
How are we organised?

BELGIAN
HYDROGEN
COUNCIL

WaterstofNet

> 15 years of H2 experience

- Knowledge and collaboration platform on hydrogen
- Focus on Flanders / Belgium / Netherlands / Benelux
- Nonprofit / 13 employees
- Offices in Turnhout (BE) and Helmond (NL)



BELGIAN HYDROGEN COUNCIL

Waterstof Industrie Cluster (WIC)

Network organization: knowledge building, projects

PRODUCTION

INFRASTRUCTURE, DISTRIBUTION AND STORAGE

TECHNOLOGY

ENGINEERING & SERVICES

END USER

RESEARCH

FACILITATORS

Two existing clusters in Belgium work together

Flanders Region

Walloon Region

BELGIAN HYDROGEN COUNCIL

Scope of the Belgian Hydrogen Council

Voice of the
Belgian H_2 ecosystem towards other national organisations

Advising
our policy makers

BELGIAN HYDROGEN COUNCIL

Profiling & promotion
of the Belgian Hydrogen Industry

Connecting existing industrial ecosystems
on H2 in Flanders & Wallonia

BELGIAN HYDROGEN COUNCIL

Voice of the

Belgian H_2 ecosystem towards other national organisations

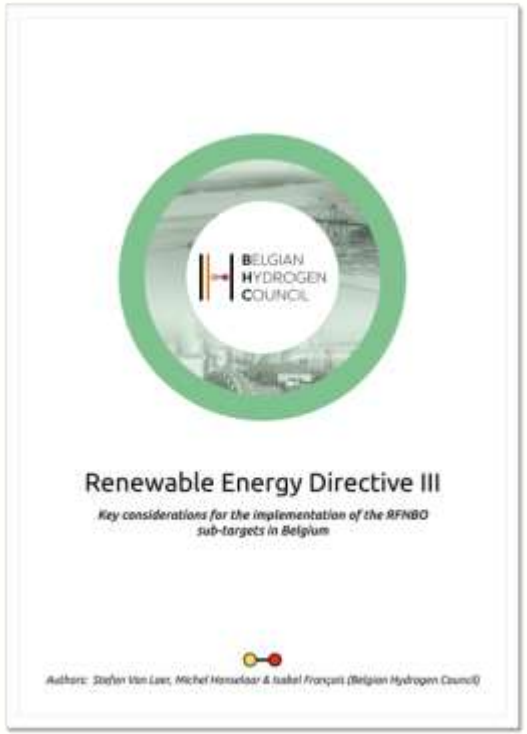
BELGIAN HYDROGEN COUNCIL

Profiling & promotion

of the Belgian Hydrogen Industry

BELGIAN HYDROGEN COUNCIL

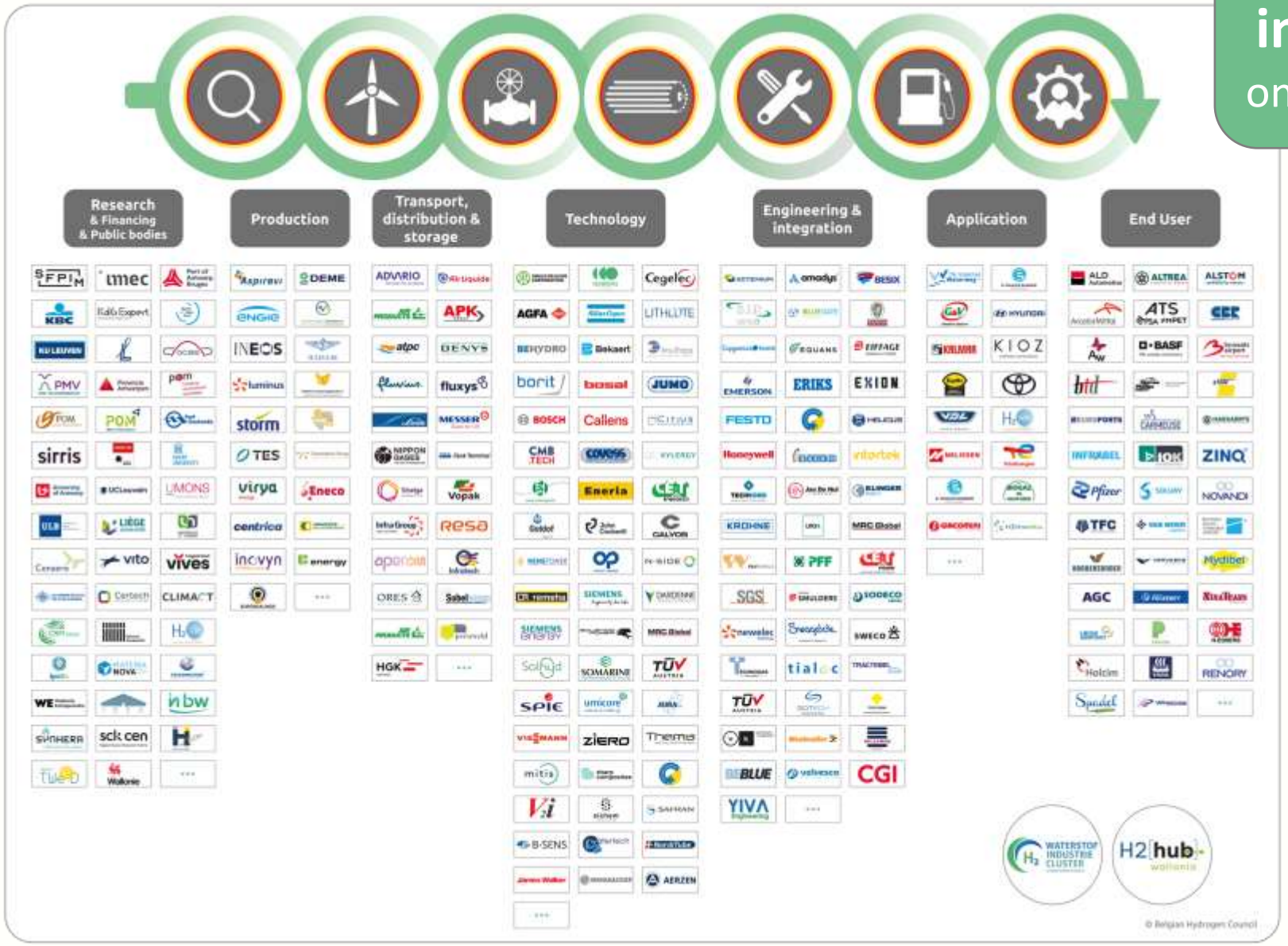
Advising
our policy makers



BELGIAN HYDROGEN COUNCIL

Connecting existing industrial ecosystems

on H2 in Flanders & Wallonia



BELGIAN HYDROGEN COUNCIL

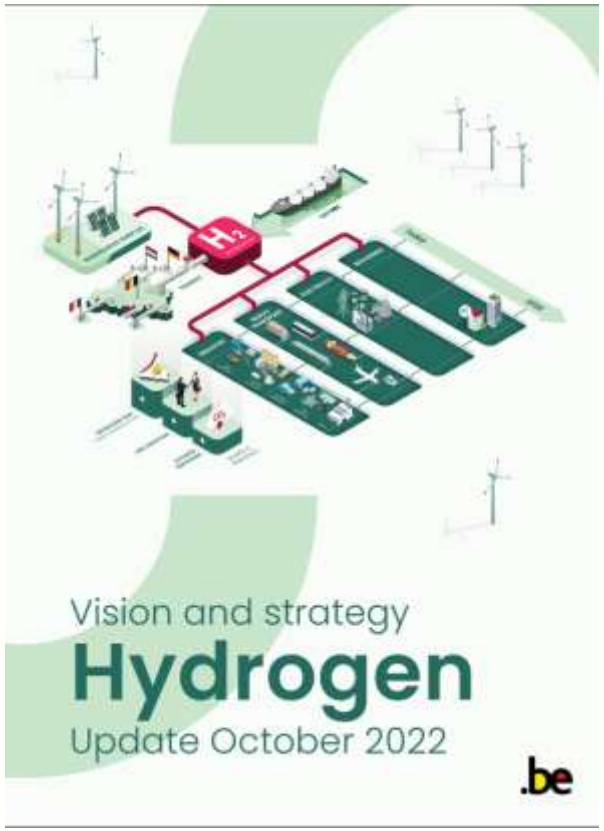
Belgian & regional hydrogen strategies

BELGIAN
HYDROGEN
COUNCIL

Belgian & regional hydrogen strategies

Federal level

Focus on import & infrastructure



Regional level - Flanders

Focus on innovation & production & use (industrial)

Vlaamse Regering

DE VLAAMSE MINISTER VAN ECONOMIE, INNOVATIE, WERK, SOCIALE ECONOMIE EN LANDBOUW

MEDEDELING AAN DE VLAAMSE REGERING

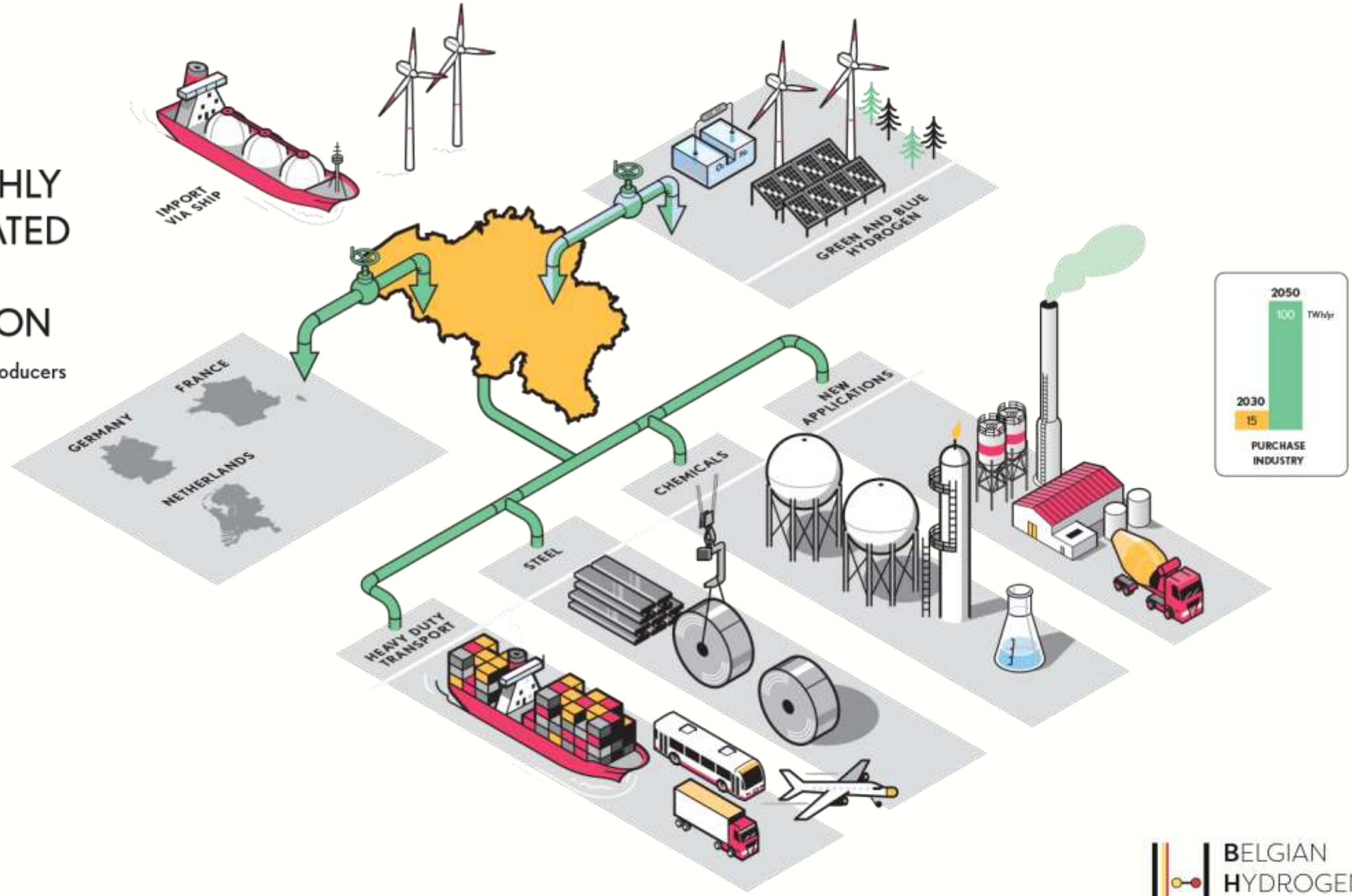
Update in progress

Betreft: Vlaamse Waterstofvisie "Europese koploper via duurzame innovatie"

BELGIAN HYDROGEN COUNCIL

LARGE & HIGHLY CONCENTRATED HYDROGEN CONSUMPTION

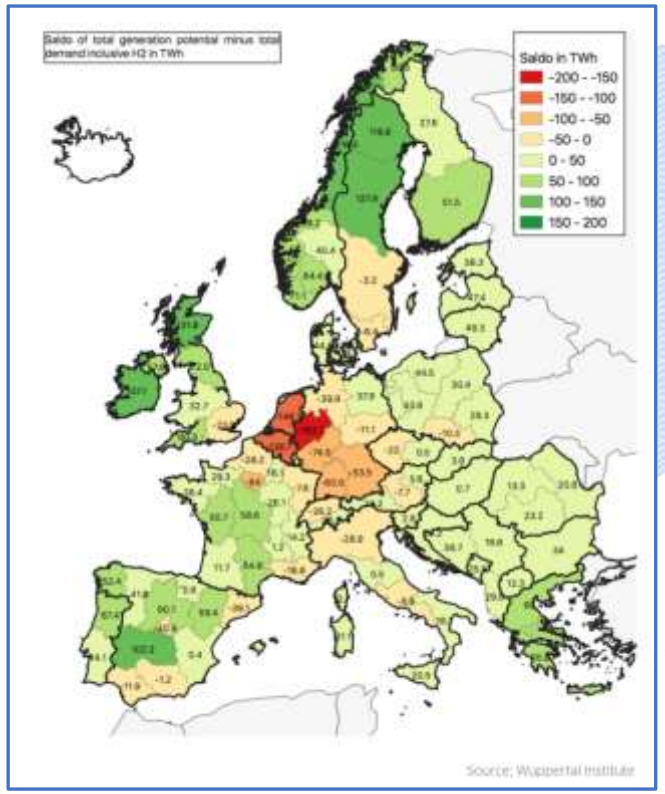
& innovative pioneering producers

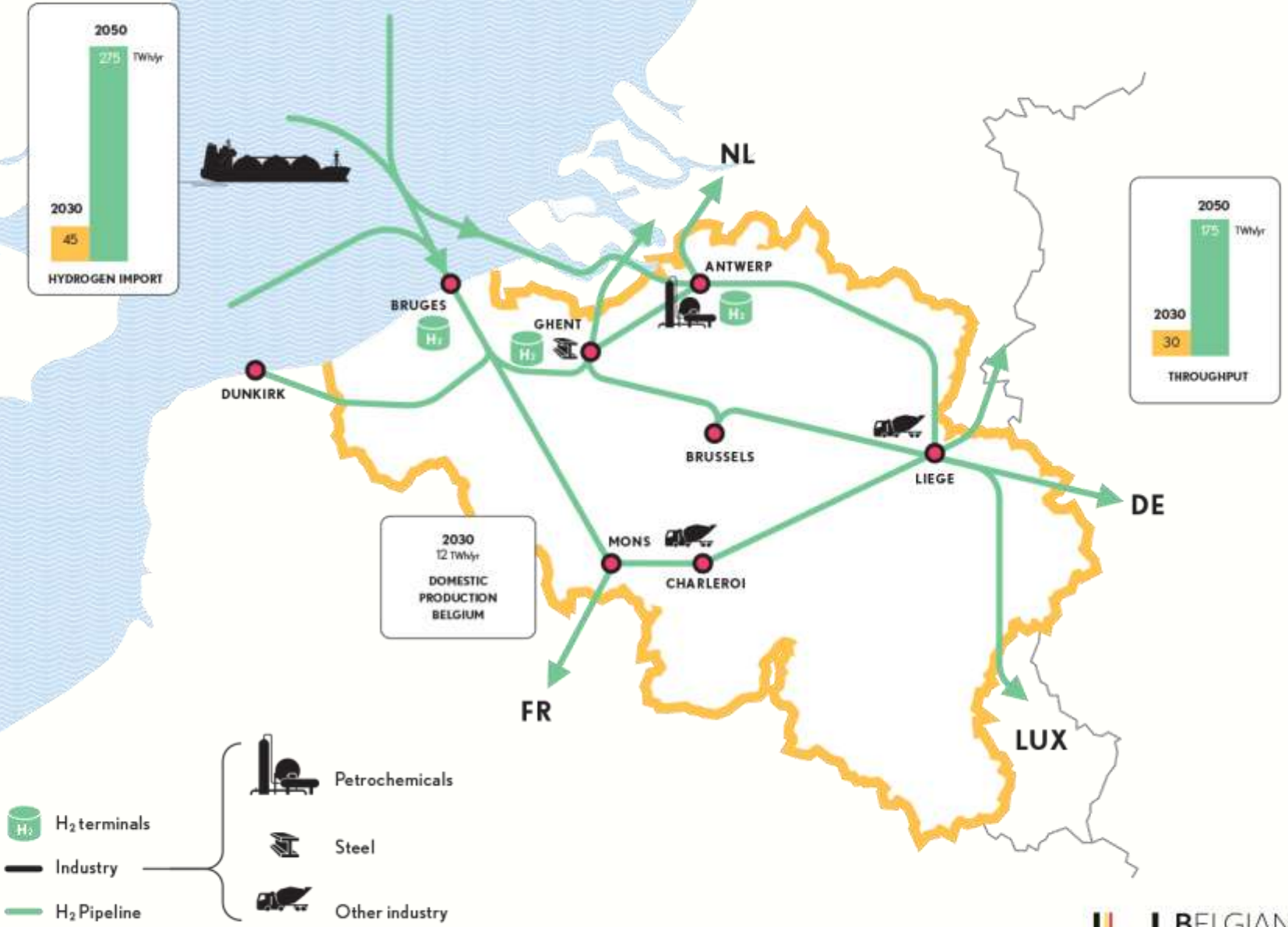


BELGIAN HYDROGEN COUNCIL

HUB FOR IMPORT AND THROUGHPUT OF HYDROGEN

Central location in EU





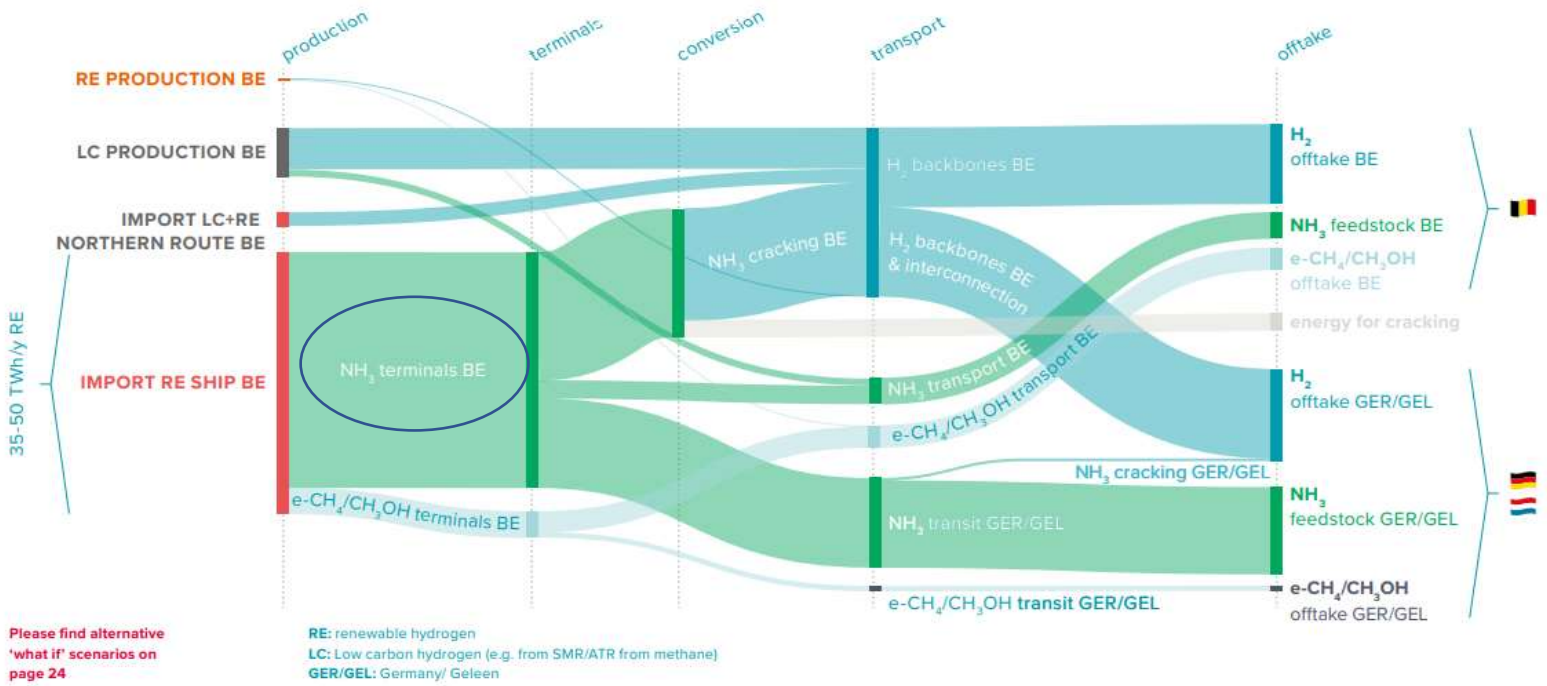
BELGIAN HYDROGEN COUNCIL

Import study – roadmap (2019-2023)

https://www.waterstofnet.eu/_asset/_public/H2Importcoalitie/Belgium-as-a-hydrogen-importhub_web_singlepage-presentation.pdf

Short term focus on ammonia as H2 carrier

Via Port of Antwerp-Bruges



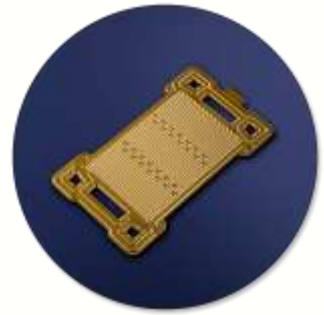
DEME ENGIE EXMAR fluxys Port of Antwerp

BELGIAN HYDROGEN COUNCIL

HYDROGEN TECHNOLOGY CHAMPIONS











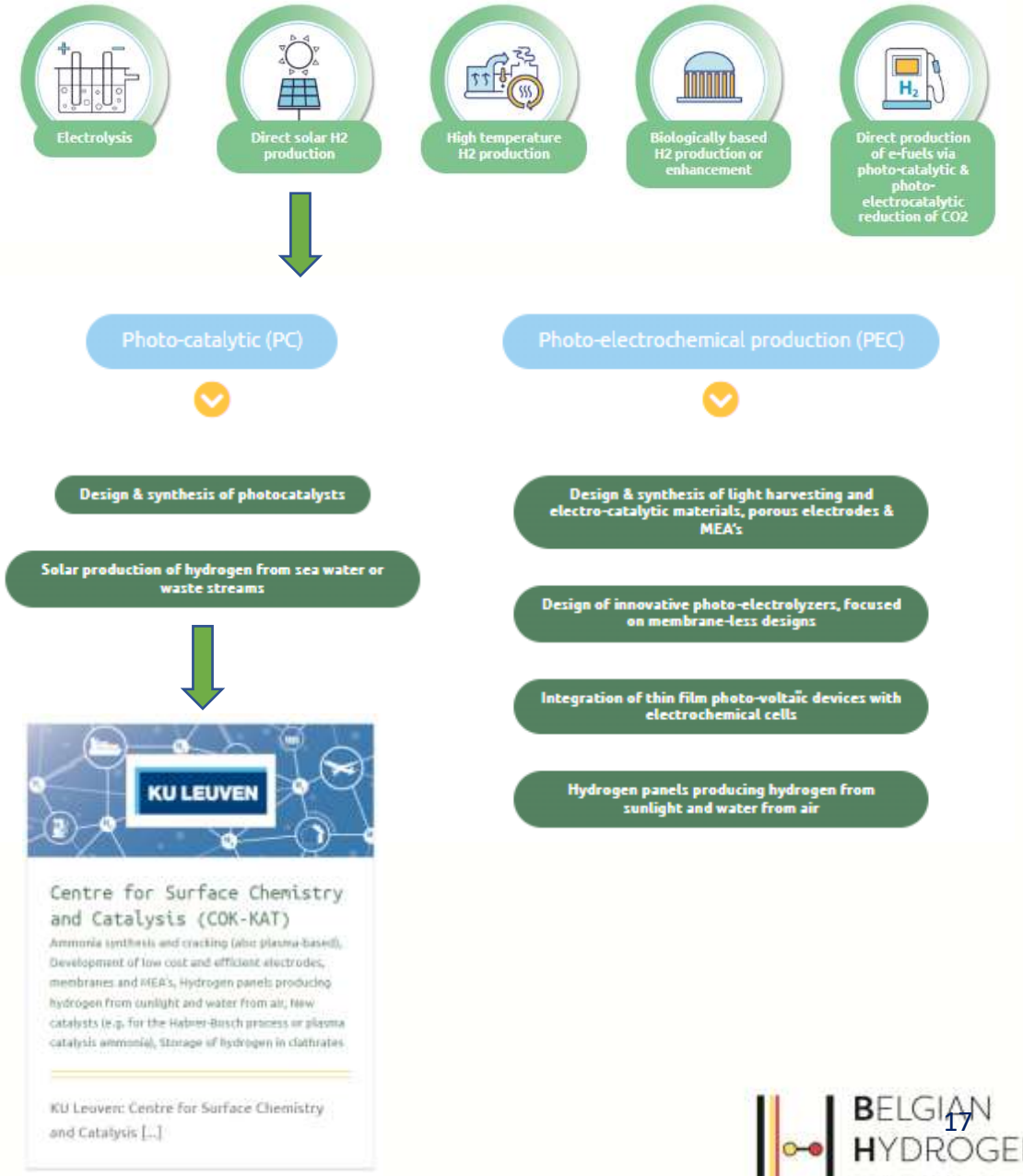




BELGIAN HYDROGEN COUNCIL

Innovation - research

https://www.belgianhydrogencouncil.be/research/

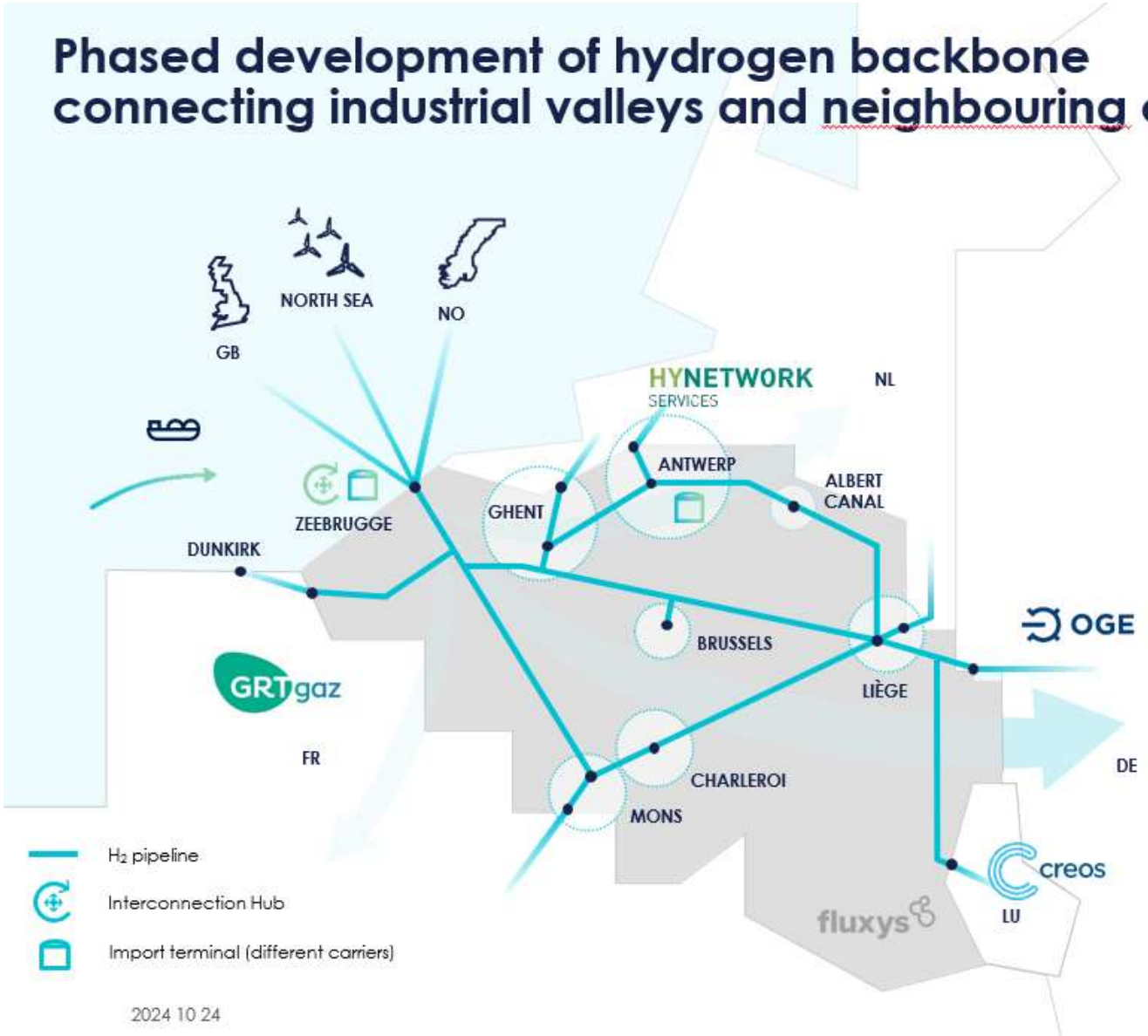


Interactive map BE H2 activities

Plans & realisations

BELGIAN
HYDROGEN
COUNCIL

The hydrogen backbone in Belgium



Ghent-Antwerp part under construction

- Close cooperation with all stakeholders to build capacity in line with market demand
- Ambition to offer 30 TWh/y transmission capacity by 2030
- Aim to have first capacity ready 2026
- Facilitating and developing import facilities
- Working on multiple cross-border connections to achieve economies of scale

Hydrogen roadmap 2030: infrastructure under development

Further expand existing terminal capacity & build-out pipeline and cracking capacities

fluxys **(open-access) hydrogen pipeline in development**
From Antwerp (2026) connecting to Germany (2028)

pipelink **(open-access) ammonia pipeline in development**
In the Antwerp port area (2028)

fluxys ADVARIO Construction of an open access ammonia terminal and cracker in Antwerp (2028)

vtti AmplifHy project for open-access ammonia terminal and cracker in Antwerp (2029)

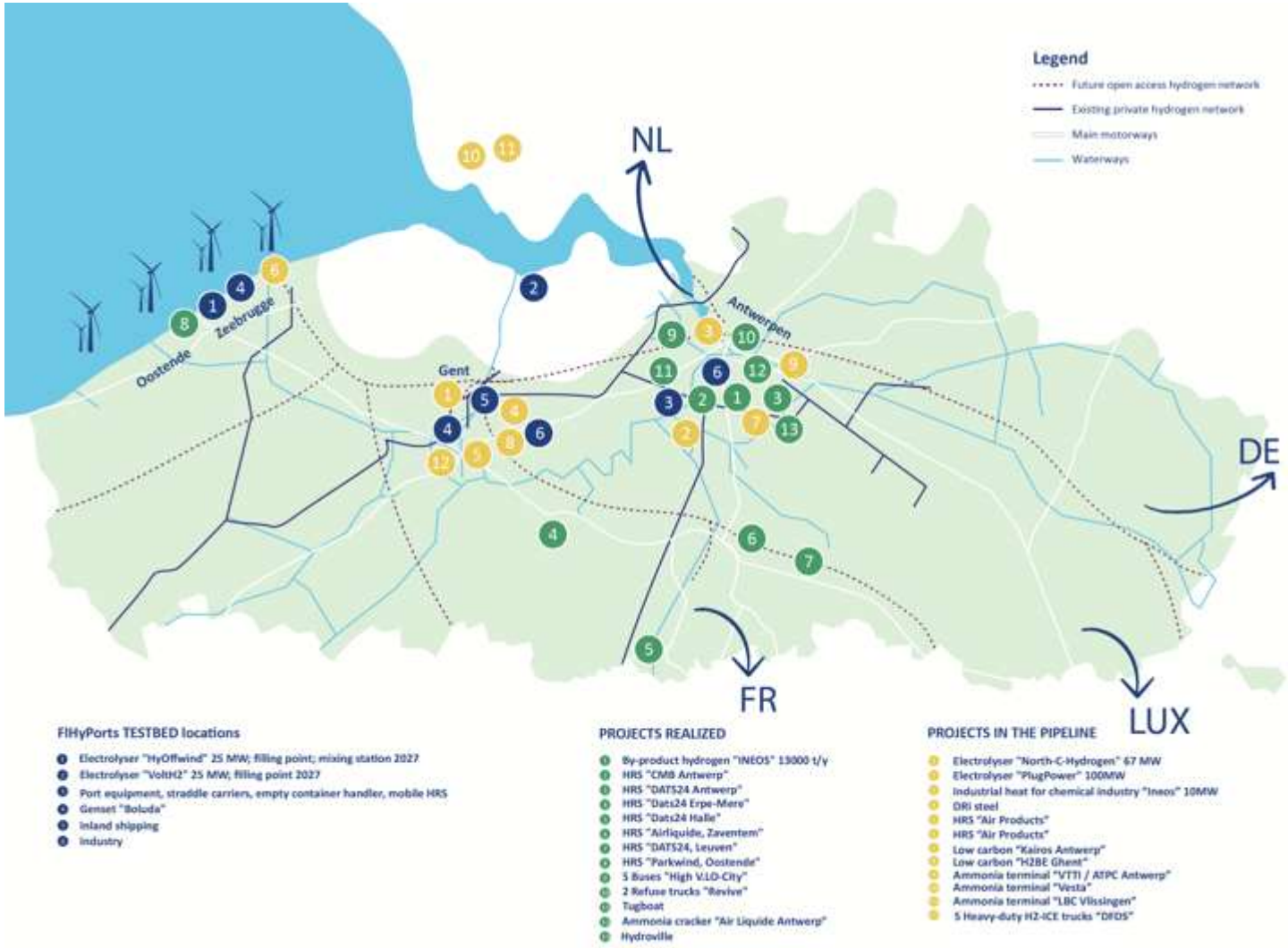
Vopak
Redeveloping a refinery plot into Vopak Energy Park Antwerp, focusing on clean molecules, cracking and industrial processes (2029).

Port of Antwerp Bruges

Air Liquide
Commissioning of a first Ammonia Cracker in Antwerp (2024), First commercial scale cracker by 2028.

Hyoffwind project Zeebruges – 25MW electrolysis under construction

Hydrogen valley: FlHyPorts



Objectives:

- Production of > 500 tons of clean hydrogen using new hydrogen production capacity
- Use of the clean hydrogen produced several applications in several sectors via testbeds, including sector coupling and maximizing integration of renewable energy
- Implementation of certified RFNBO tracing system
- Monitor performance of testbeds during at least 2 years to provide data for technic-economic assessments
- Demonstrate the financial viability after 2 years of operation and provide scalability analysis
- Demonstrate the replication of the results to other port-areas …

Multiplication ports

FREEPORT OF RIGA AUTHORITY
PORT OF TRIESTE
PORT MONTRÉAL
OSLO HAVN PORT OF OSLO
Port of Cartagena
Cartagena Port Authority
GPSN
brussels airport
the heart of Europe

Implementation of EU policy

BELGIAN
HYDROGEN
COUNCIL

Renewable Energy Directive

- RED III targets:

Sub-goals for specific “hard to abate” sectors:
- 42% green H2 in industry by 2030
- 60% green H2 in industry by 2035
- 1% RFNBOs in transport in 2030

Belgium:

Industry obligation:
- Chemical industry struggling
- Cost gap green <-> grey too large
  Preference for low carbon H2

Transport obligation :
- 2 big refineries in BE
- ‘Refinery route’:
  Green H2 to produce fossile fuel

Main pathway in BE (4-8%)

BELGIAN HYDROGEN COUNCIL