

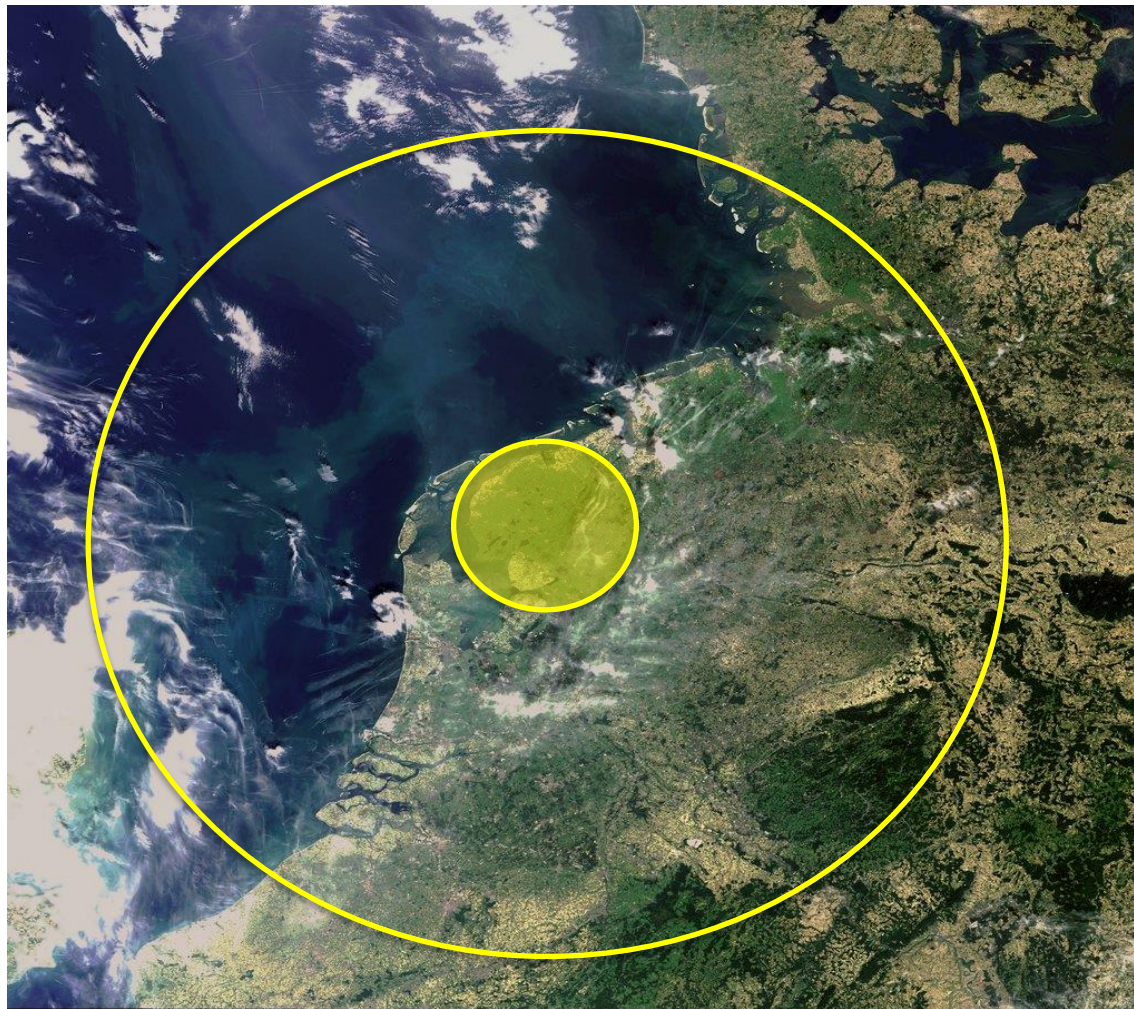
From HEAVENN to Hydrogen Valleys

Transition to a Hydrogen Economy

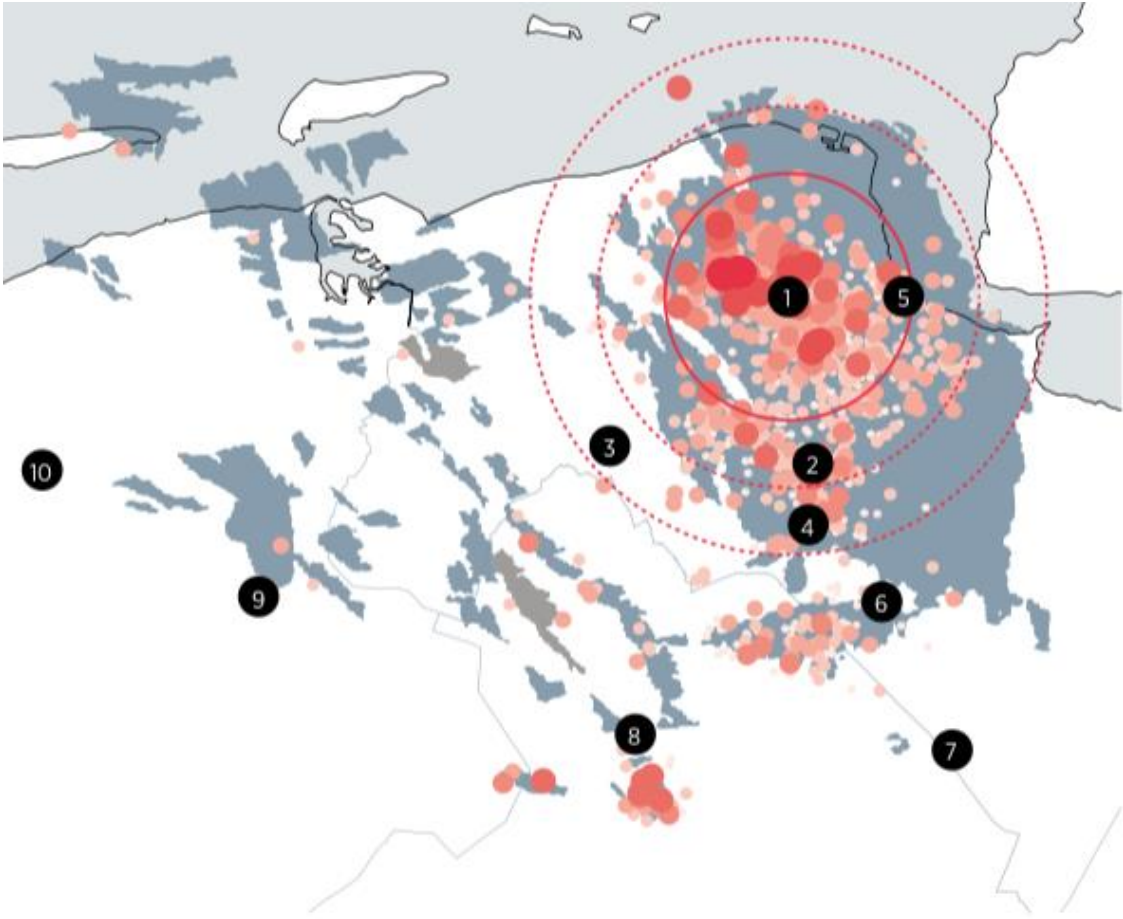
Patrick Cnubben

New Energy Coalition

Where are we located?



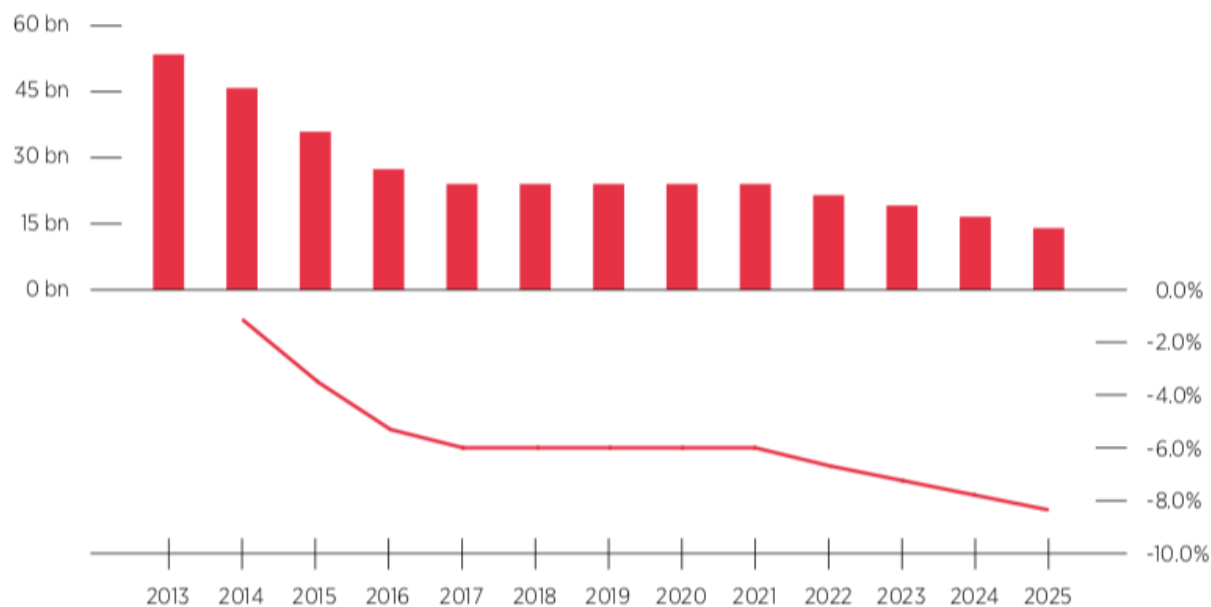
Situation in the Northern Netherlands




Situation in the Northern Netherlands



Gas production and cumulative economic impact - **baseline**



 Historic gas production + base scenario (in bn m³, left)

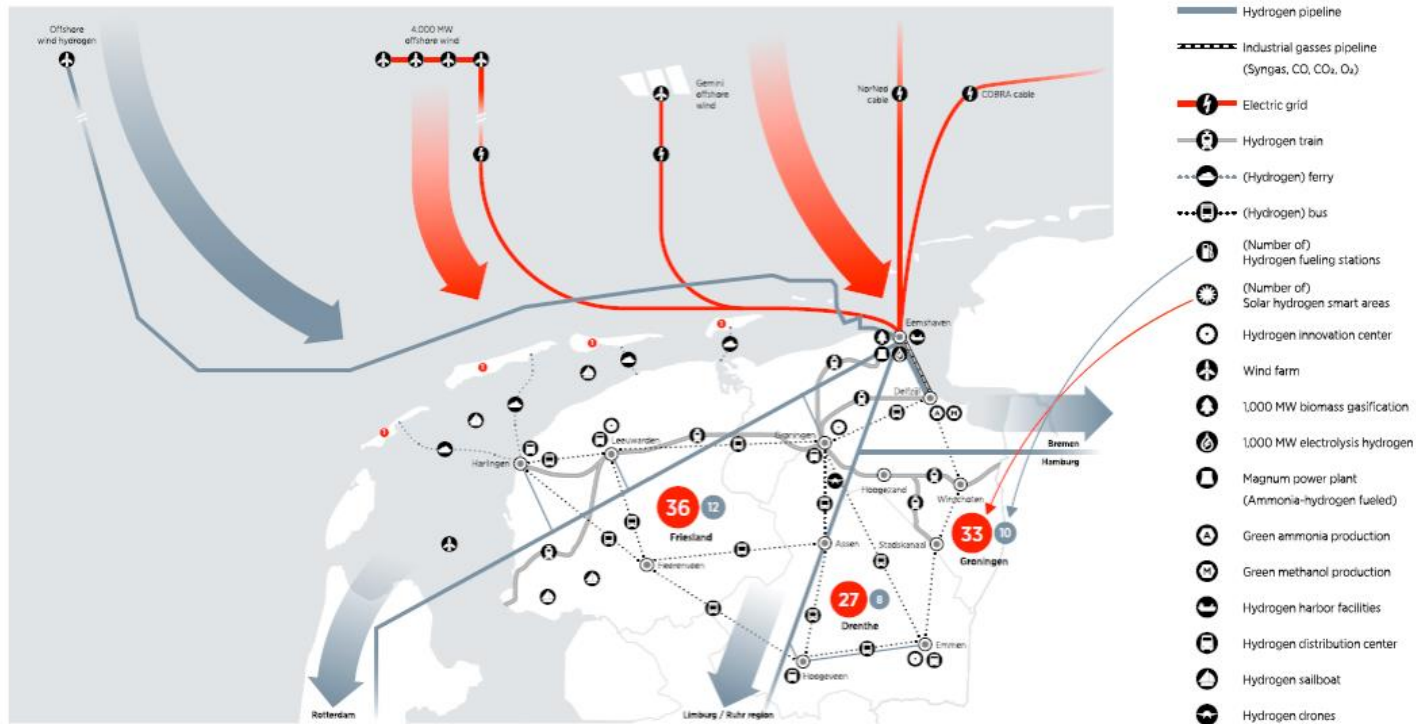
 Cumulative impact on economic growth in Northern Netherlands (in %, right)

We have a plan

**Green Hydrogen
Economy in the
Northern Netherlands**

A region needs a business H2 fits as a glove!

Green Hydrogen Economy in the Northern Netherlands



Green Hydrogen Economy In the Northern Netherlands

Priorities

Infrastructure

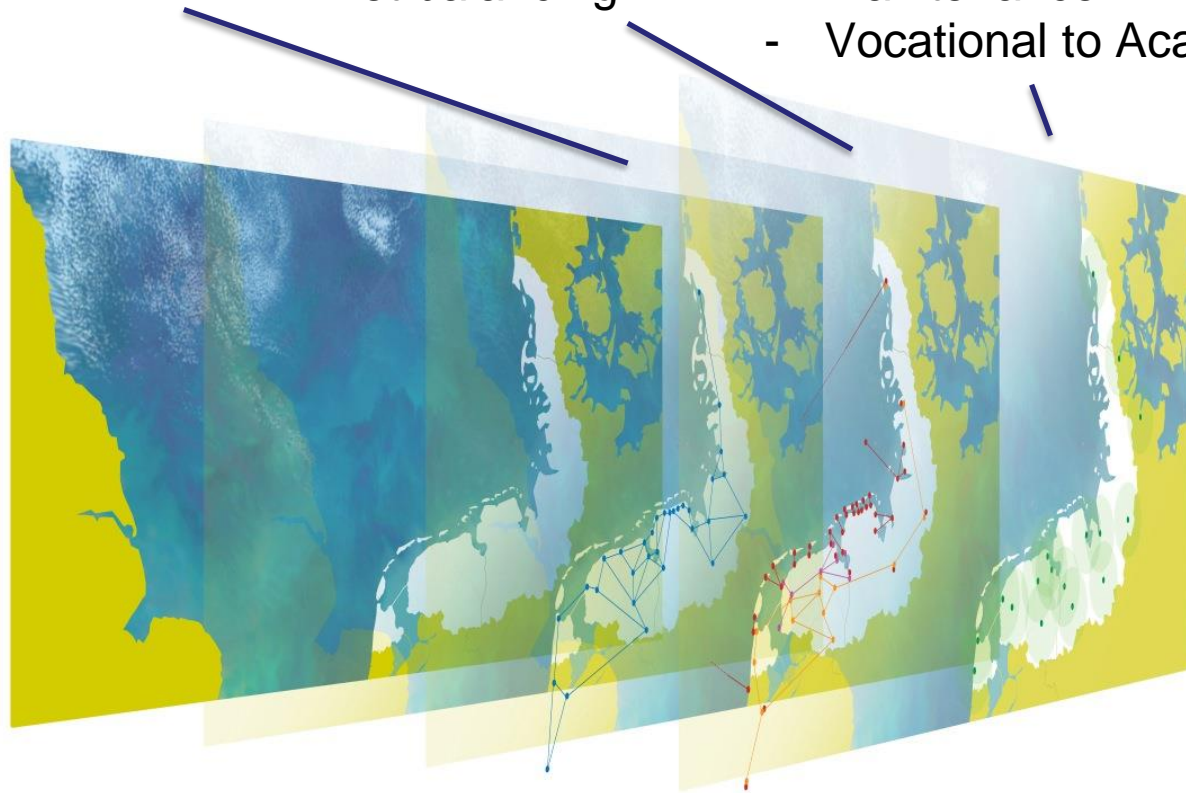
- Harbours!!
- Energy
- Transport

Sectors

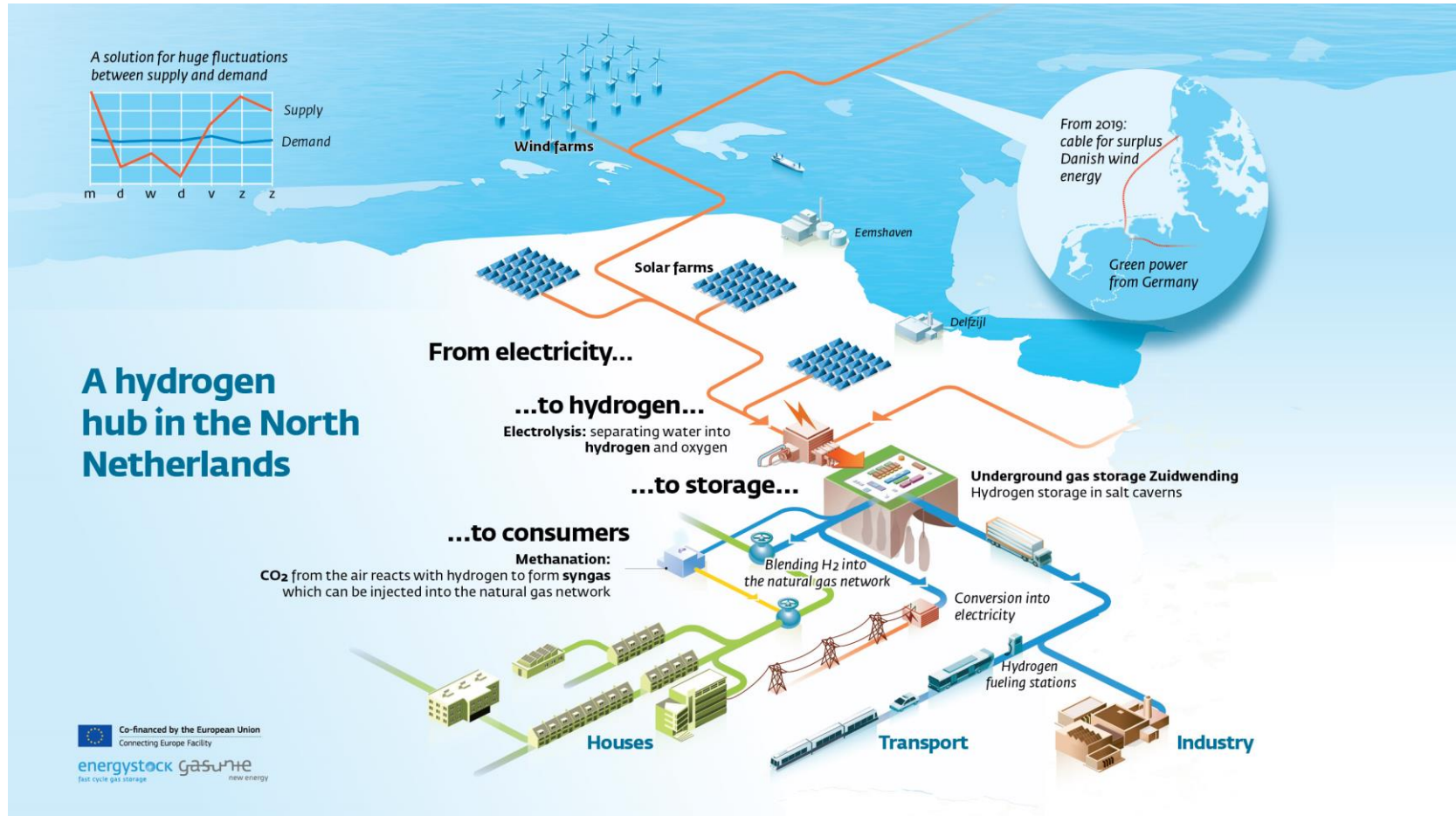
- Industry
- Mobility
- Built environment
- Net balancing

Human Capital & Innovation

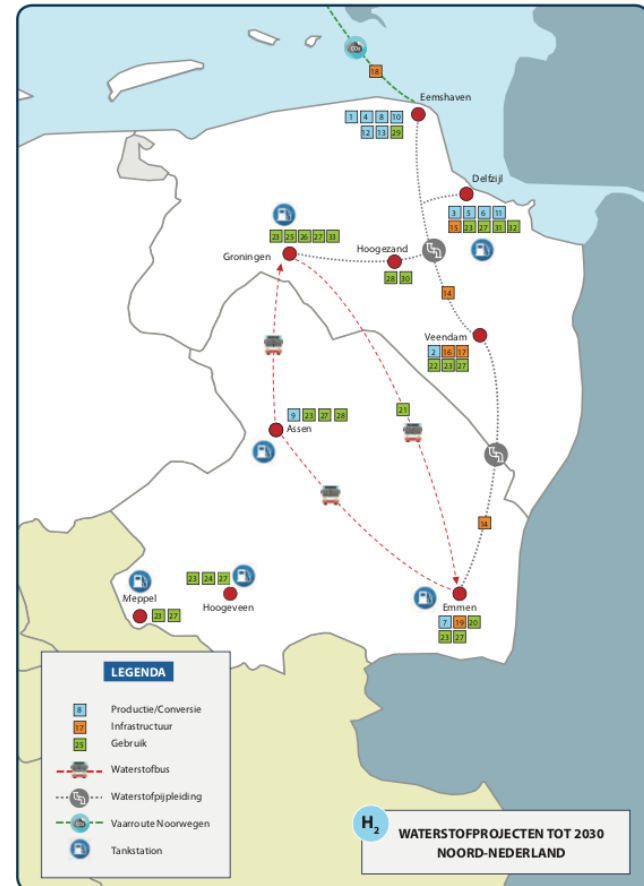
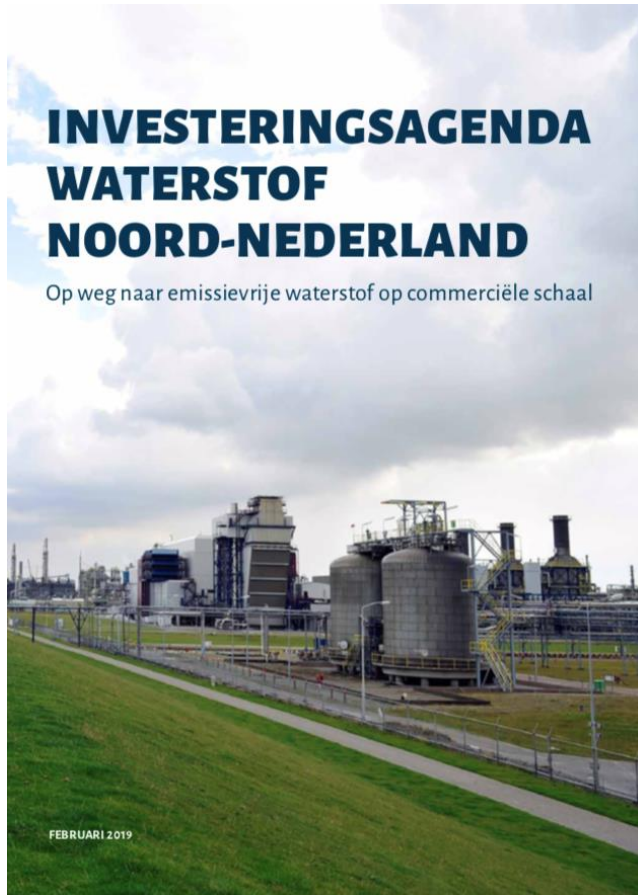
- Design
- Construction
- Maintenance
- Vocational to Academic



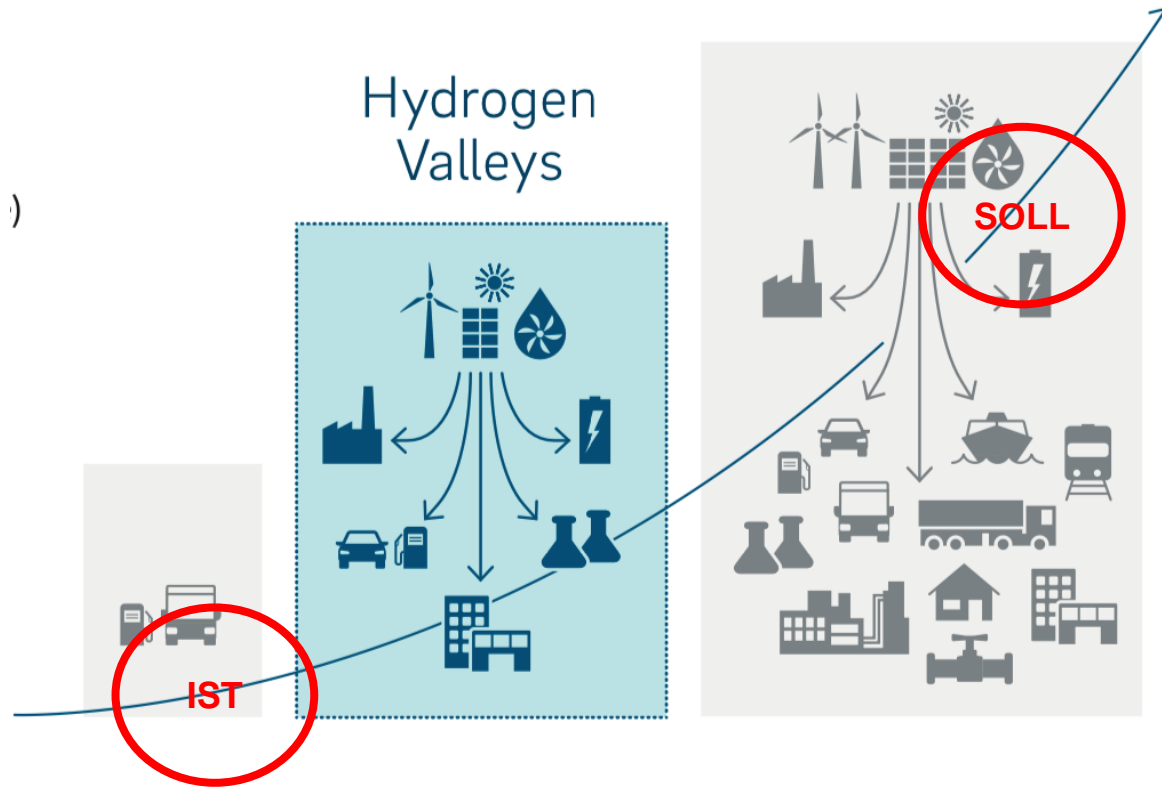
The Region as Green Hydrogen Hub



Hydrogen Investment Plan 1.0



Becoming a Integrated Hydrogen Economy



The North: Perfect match

- **The region is perfectly positioned and willing to develop an integrated green H2 economy, due to:**
 - The large-scale existing and planned supply of renewable electricity (RES), including onshore and offshore wind as well as solar, as well as strong interconnections with larger wind-based areas in Denmark and Germany
 - The existing large-scale chemical industry already experienced in production and handling of H2
 - The existing gas transmission and large-scale underground storage infrastructure

The North: Perfect match

- The potential to scale-up and export green H2 to other EU regions by land and sea
- The ongoing decarbonization of mobility in urban areas
- The strong knowledge and industry-led innovation infrastructure. The political support at local and regional level, e.g. through the three northern provinces (Groningen, Drenthe and Friesland), also support at national level
- A region needs a business



HYDROGEN VALLEY
NORTHERN NETHERLANDS

ENERGY FOR EUROPE

HEAVENN

The consortium

- New Energy Coalition
- 30 entities from 7 EU countries (NL, D, DK, B, UK, ES and E)
- Parties from business: large, mid-sized and SME, associations, knowledge institutions, expert advisories, regional development institutions

Broad national and international support

- Over 60 parties from over 12 countries have given their support to the project via the means of a Letter of Support
- The project also can rely on broad political support covering the whole political spectrum – nationally and EU level

IS SUPPORTED BY:



BILL ELLRICK & NICO BOUWKAMP
 Executive Director & Technical Programme Manager of the California Fuel Cell Partnership & Frontier Energy California USA



WILLIAM VAN NIEKERK
 Chairman of Dutch Hydrogen & Fuel Cell Association (NWBA)



ERIC WIEBES
 Minister of Economic Affairs and Climate Policy of the Ministry of Economic Affairs on behalf of the Dutch Government




MAGNUS ENGELBREKTSSON
 Executive Secretary of CPMR North Sea Commission




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 Head International Projects Senatskanzlei Hamburg Germany



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 Head Division Energy Management of the Catalan Energy Institute Catalonia



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JAN BOEVE
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FRIES HEINIS
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 CEO of RENDO



J.F.M. AARTSEN
 Chairman of the University Medical Center Groningen (UMCG)



GERRIT SPIJK SMA
 Director of Qbuzz (Dutch public transport organisation)



JONATHAN PALACIOS-AVILA
 CEO of StratosFuel California USA (hydrogen station developer, producer and retailer of renewable hydrogen)



EIJI OHIRA
 Director General of the New Energy and Industrial Technology Development Organisation (NEDO) Japan



JAMES BARNEY CROCKETT
 President of HYER



JUSTINE GILLILAND
 CEO of Venture Taranaki Trust New Zealand (regional development agency)



LUUK BLOM
 SG Benelux Union



NIEK JAN VAN KESTEREN
 President of the Economic Board North Netherlands



HERMANN WESSELS
 Mayor of the City Papenburg Germany



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W. DE VREEZE
 Director of Aedes (association of social housing agencies)



PIERRE MIDROUILLET
 Managing Director of Renault Vehicle Innovation



J. PRINS
 General Director of Sent Waninge (truckdealer for DAF, GINAF and TATRA)



JAN-JAAP AUÉ
 Director of the Energy Expertise Centre Hanze Hogeschool Groningen



STEFAN HOLTHAUSEN
 Holthausen (Dutch company in hydrogen technology, safety solutions and energy)

IS SUPPORTED BY:



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 Business Development Manager Hydrogen of Resato (manufacturer of high-pressure technology)



ANDRÉ BEUKERS
 CEO of E-trucks Europe (sustainable transport solutions)



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 Regional Minister for Economy, Industry and Employment, Aragón, Spain



EDWARD DOORTEN
 Founder of GreenPlanet (state-of-the-art fuel station for traditional and sustainable fuels)



SØREN JACOBSEN
 Managing Director of BiomCN (one of Europe's largest methanol producers)



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WILKO MOL
 Director of OV Bureau Groningen/Drenthe (Public transport organisation)

IS SUPPORTED BY:



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the Province of Groningen



NIENKE HOMAN

Regional Minister for Climate and Energy
of the Province of Groningen



TJISSE STELPSTRA

Regional Minister for Climate and Energy
of the Province of Drenthe



HENK BRINK

Regional Minister for Economic Affairs and
Transport of the Province of Drenthe



NIGEL HOLMES

CEO of the Scottish Hydrogen & Fuel Cell
Association (SHFCA)



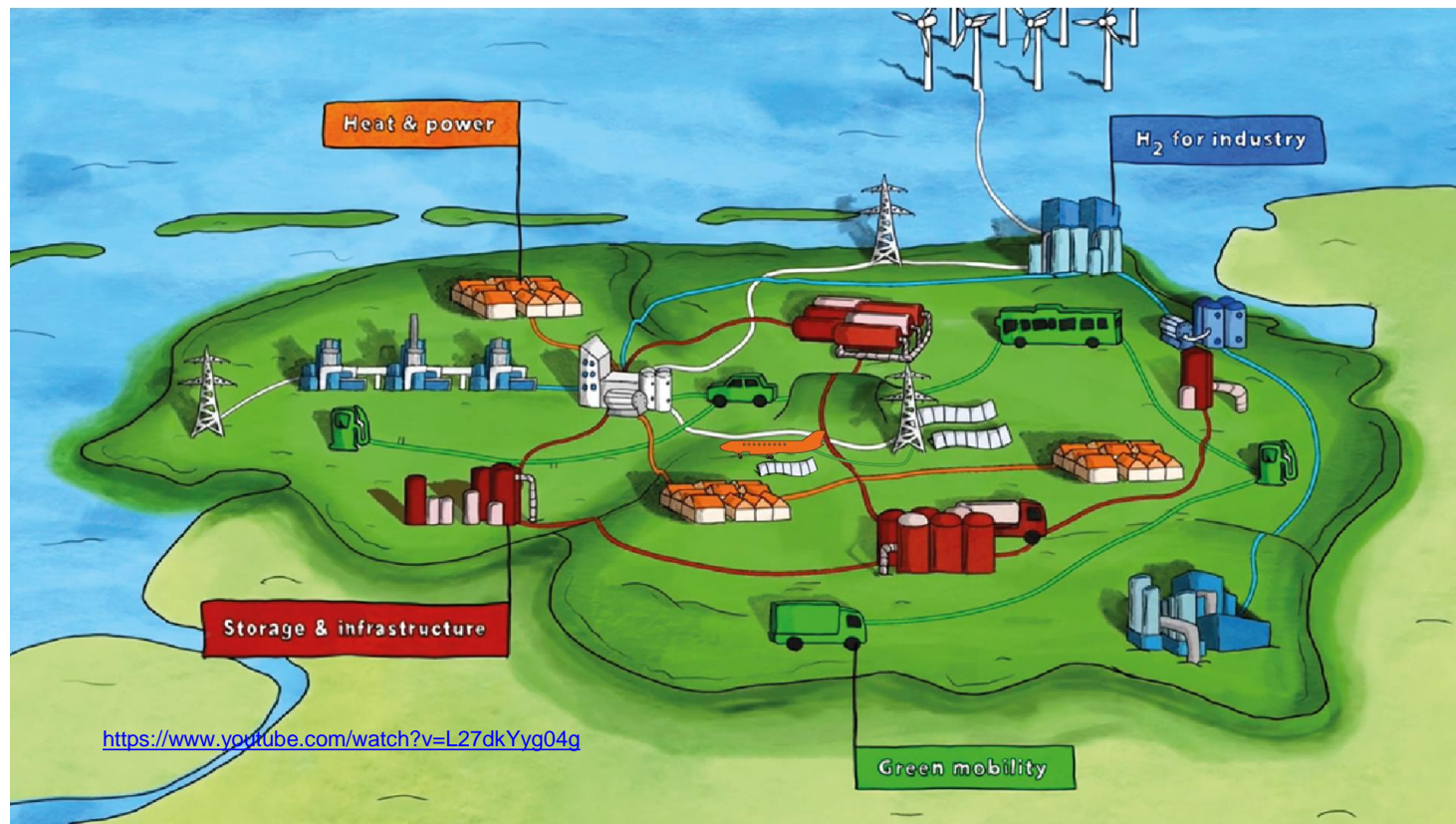
**MANFRED PACHERNEGG &
FRANZ STREMPFL**

Managing directors of Energienetze
Steiermark GmbH, on behalf of the
member associations of the European
Research Institute for Gas and Energy
Innovation (DVGW, DCC, SVGW/VSG, KVGW
and ÖVGW)



HEAVENN

The first Hydrogen Valley of Europe



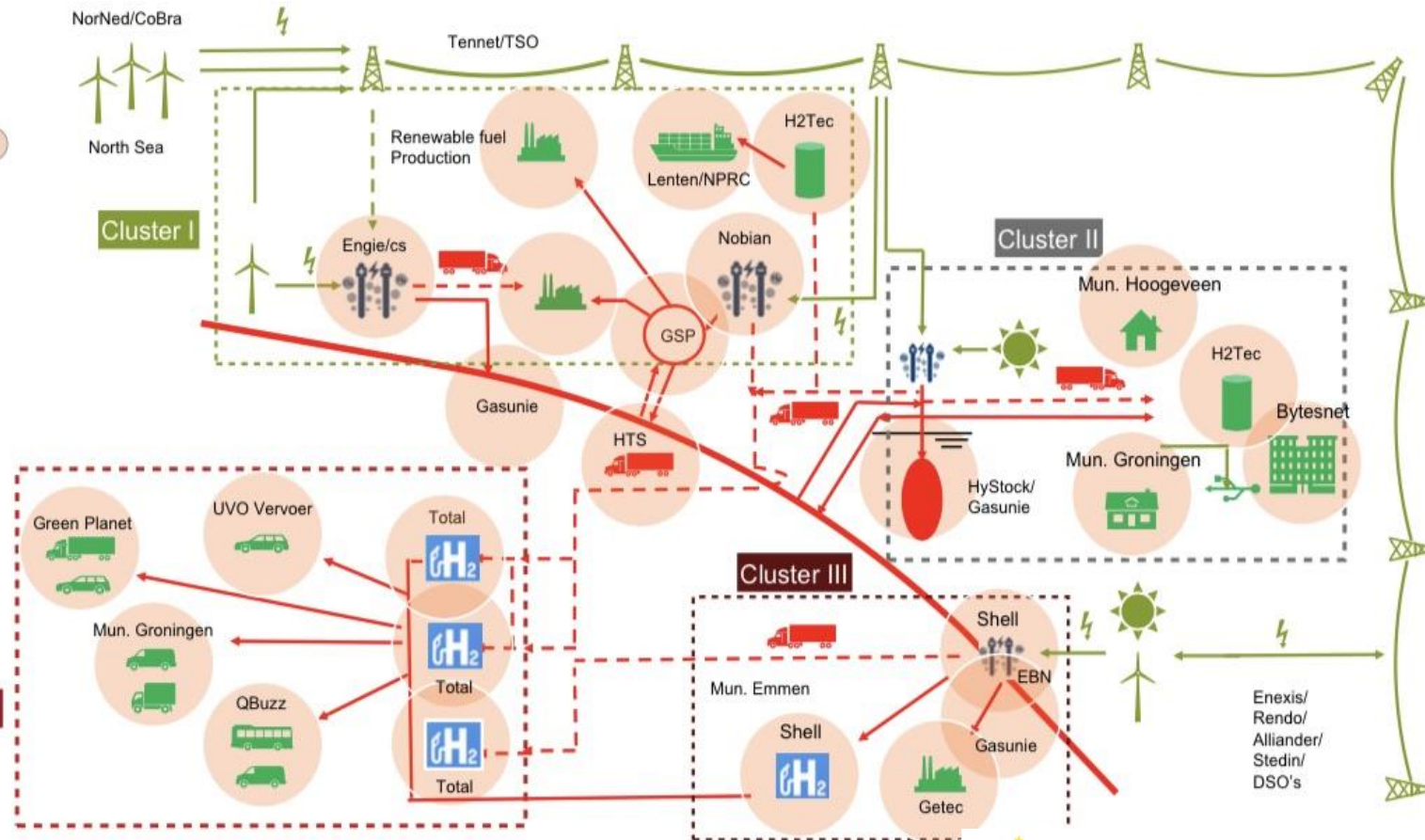
Supported by:



Studies & Replication



RUG, Energy, Hincio, Aragon Foundation, EMEC, EWE, Hydrogen Valley DK, Ireland HA, ERIG



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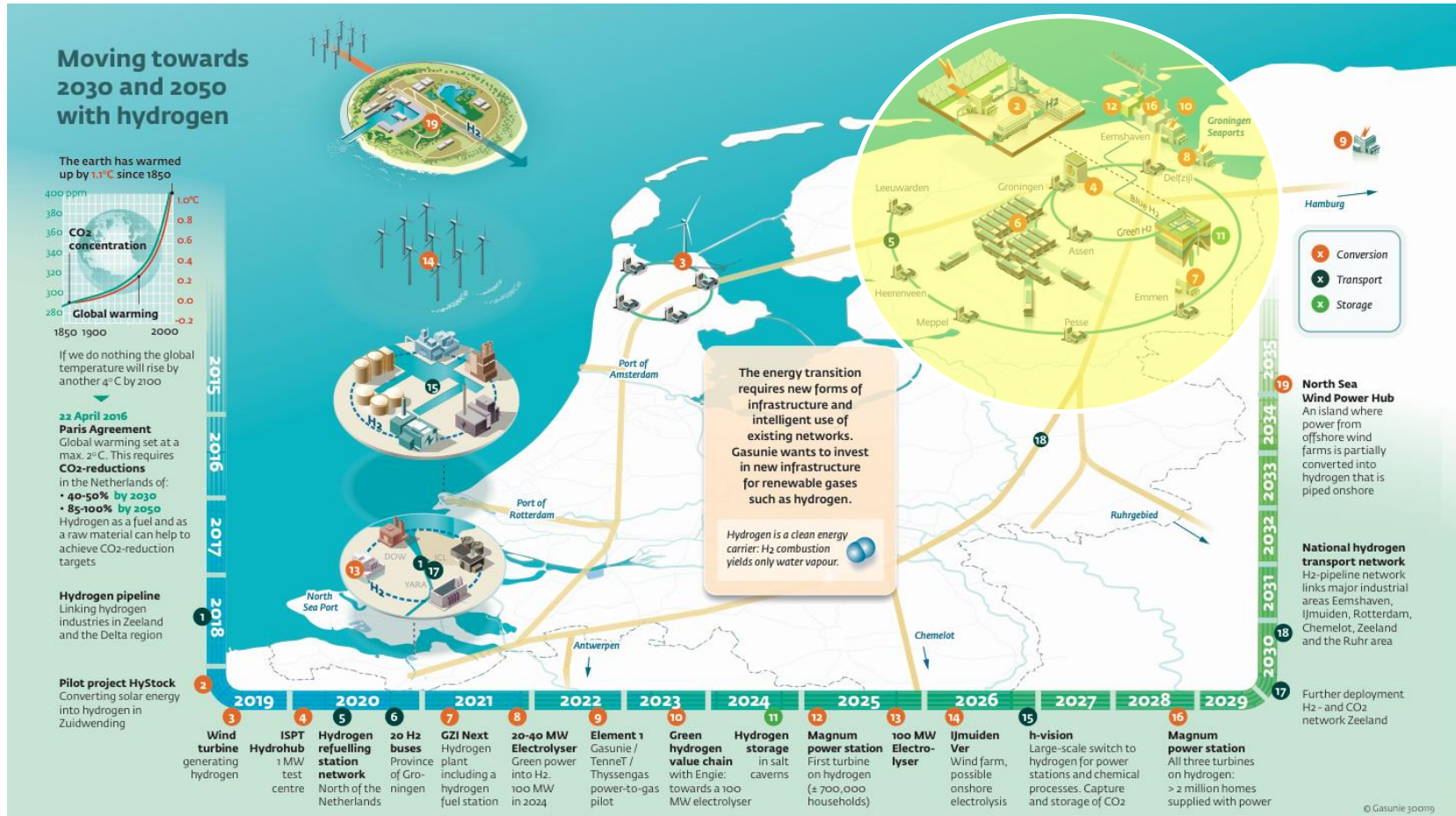
New Energy Coalition



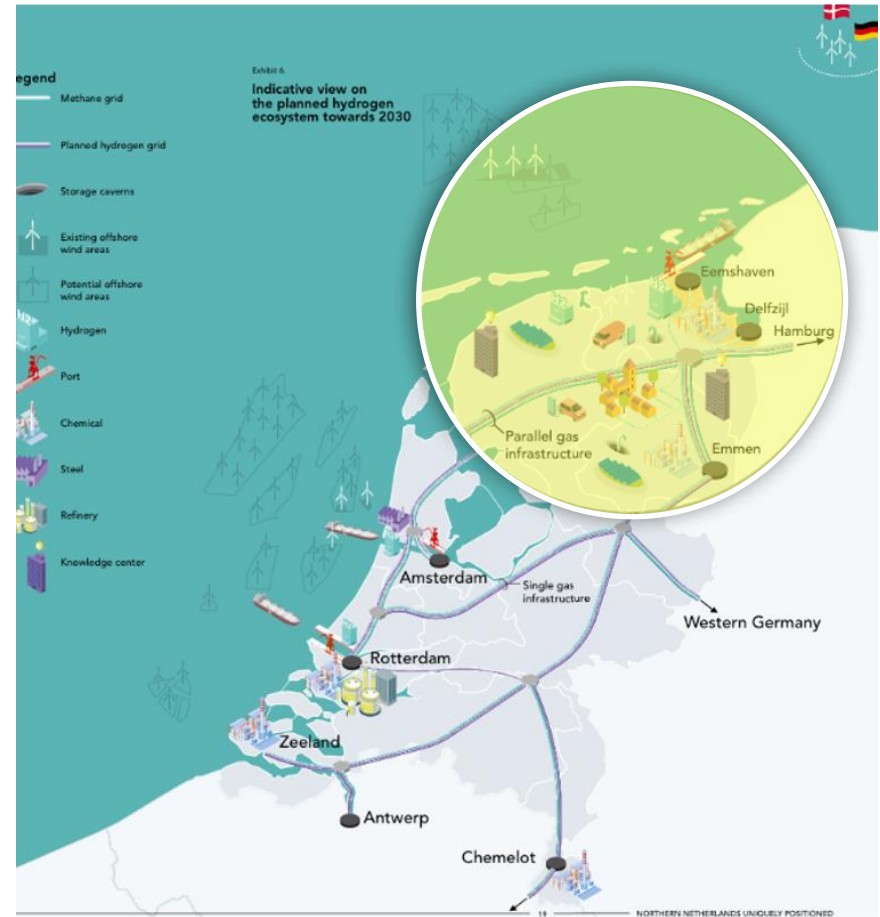
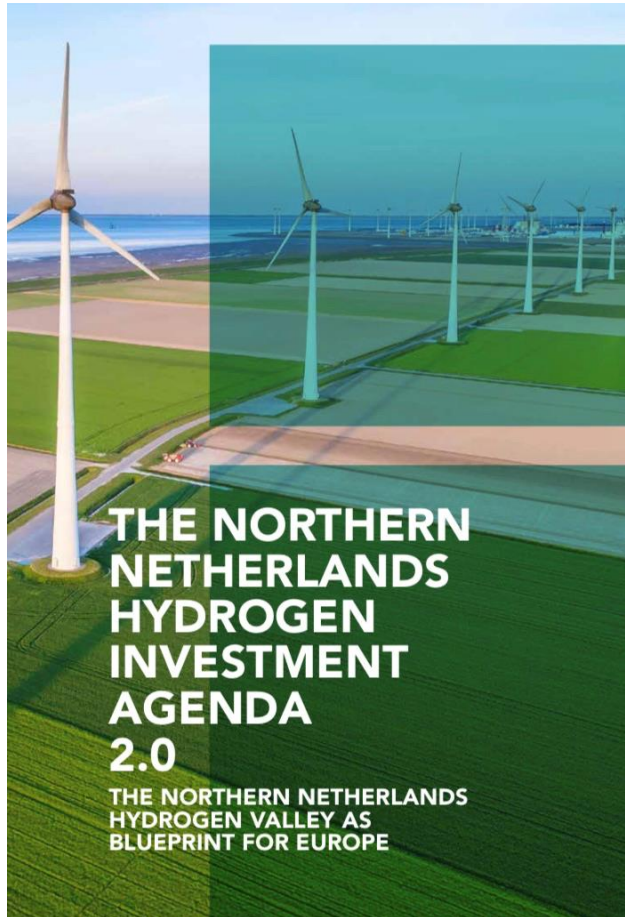
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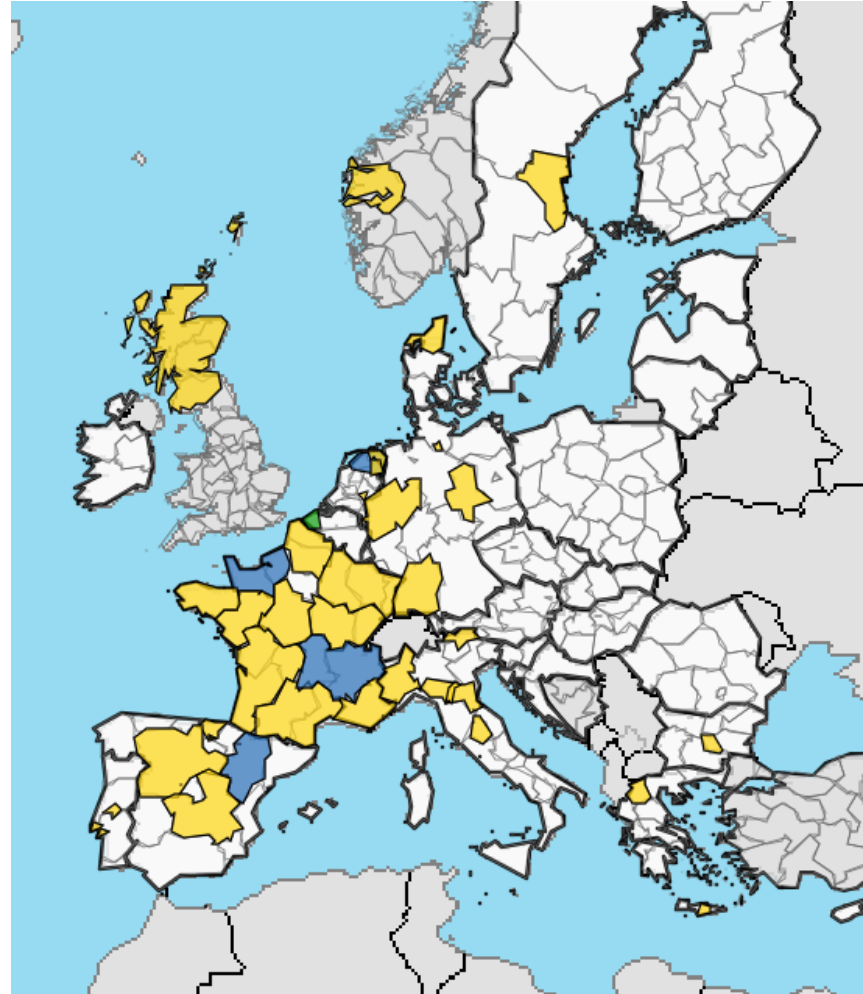
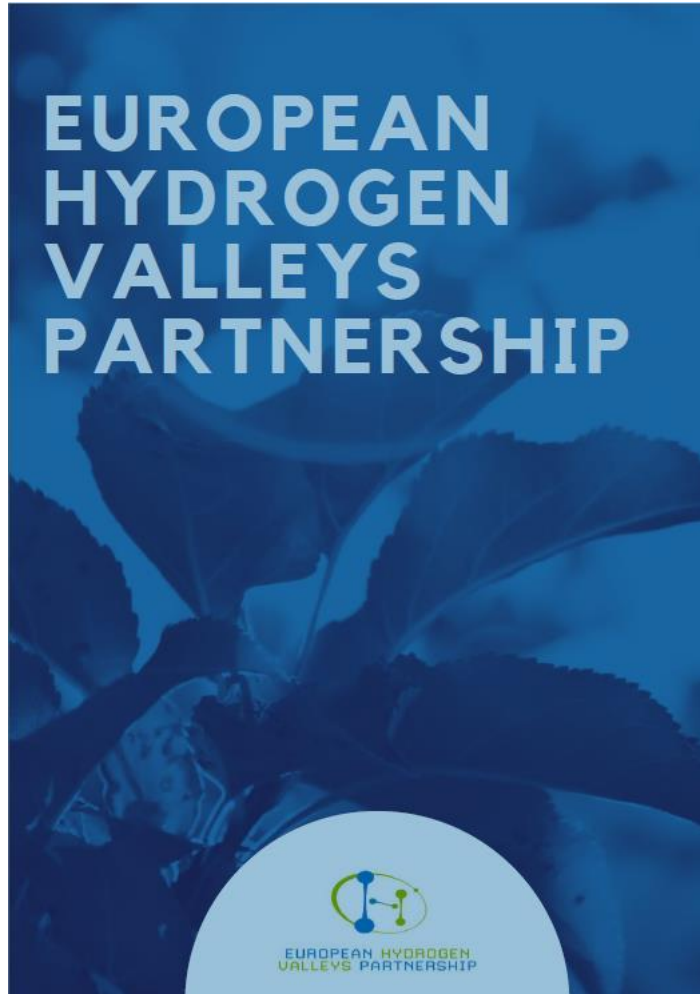
Roll out to mass application



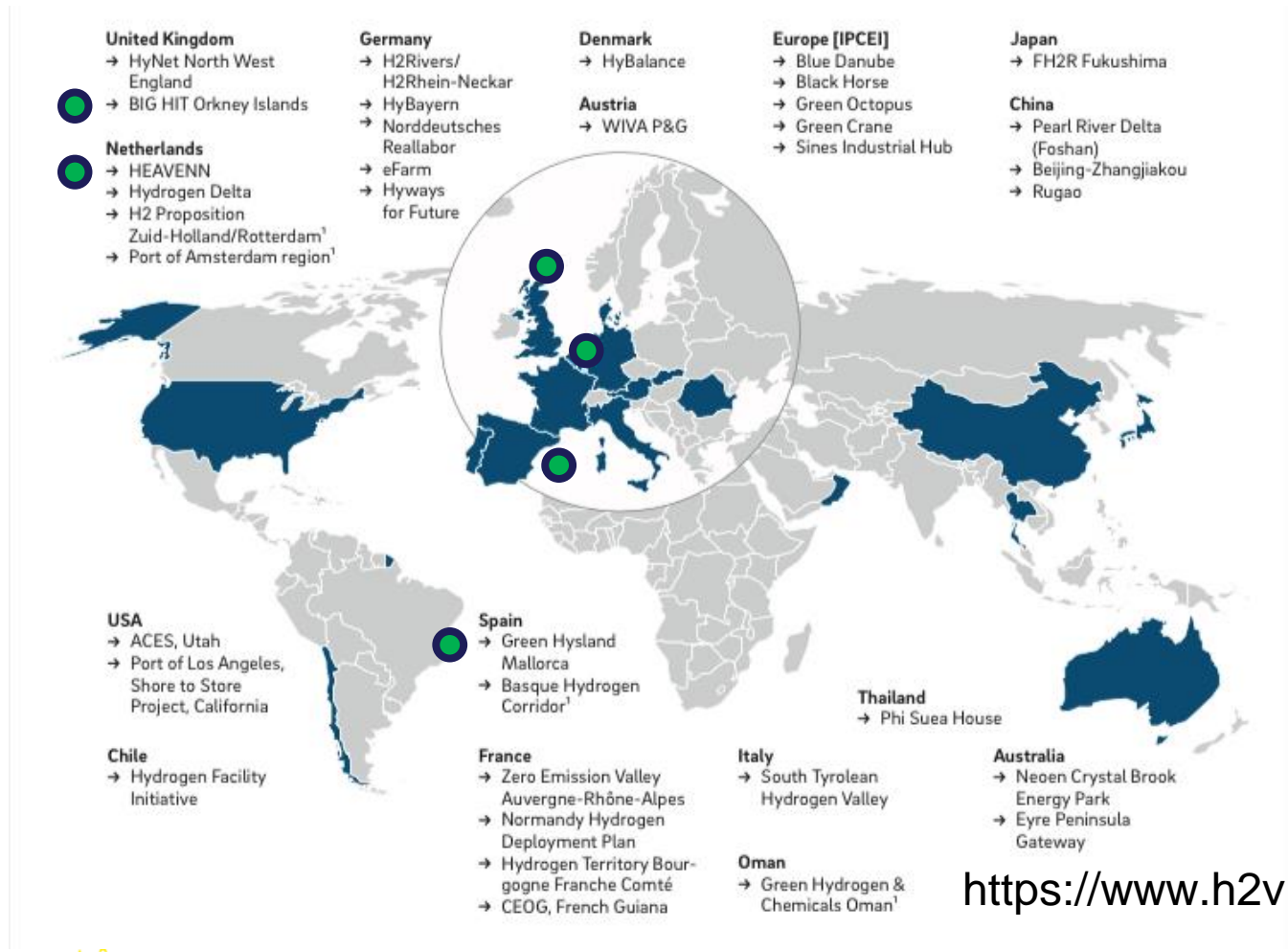
Hydrogen Investment Plan 2.0



European Hydrogen Valley's Platform



Mission Innovation Hydrogen Valley Platform



<https://www.h2v.eu/>



FUEL CELLS AND HYDROGEN
 JOINT UNDERTAKING

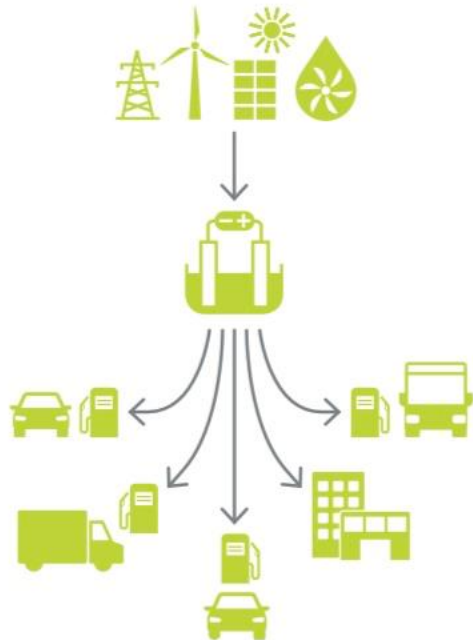


MISSION INNOVATION
 accelerating the clean energy revolution

Types of Hydrogen Valley's

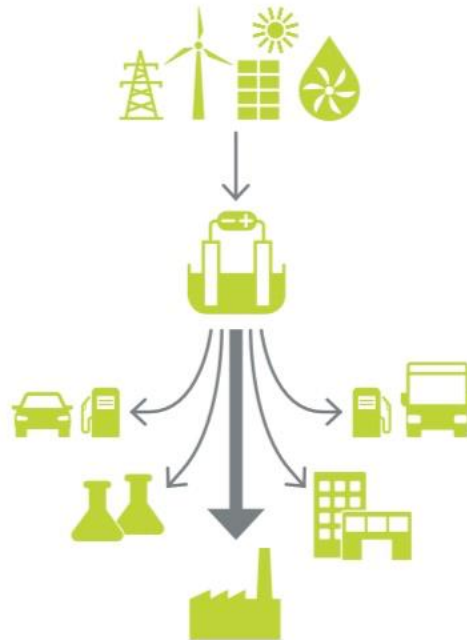
Archetype 1:

Local, small-scale & mobility-focused



Archetype 2:

Local, medium-scale & industry-focused



Archetype 3:

Larger-scale, international and export-focused



Hydrogen Valley's perspective



"More of the same"

Hydrogen Valleys can help develop first H₂ projects in new markets and geographies



Connected Valleys

Connecting existing Hydrogen Valleys (e.g., NL and DE) can enable the market



Towards a commodity

Pioneering more mature and innovative de-risking and financing models

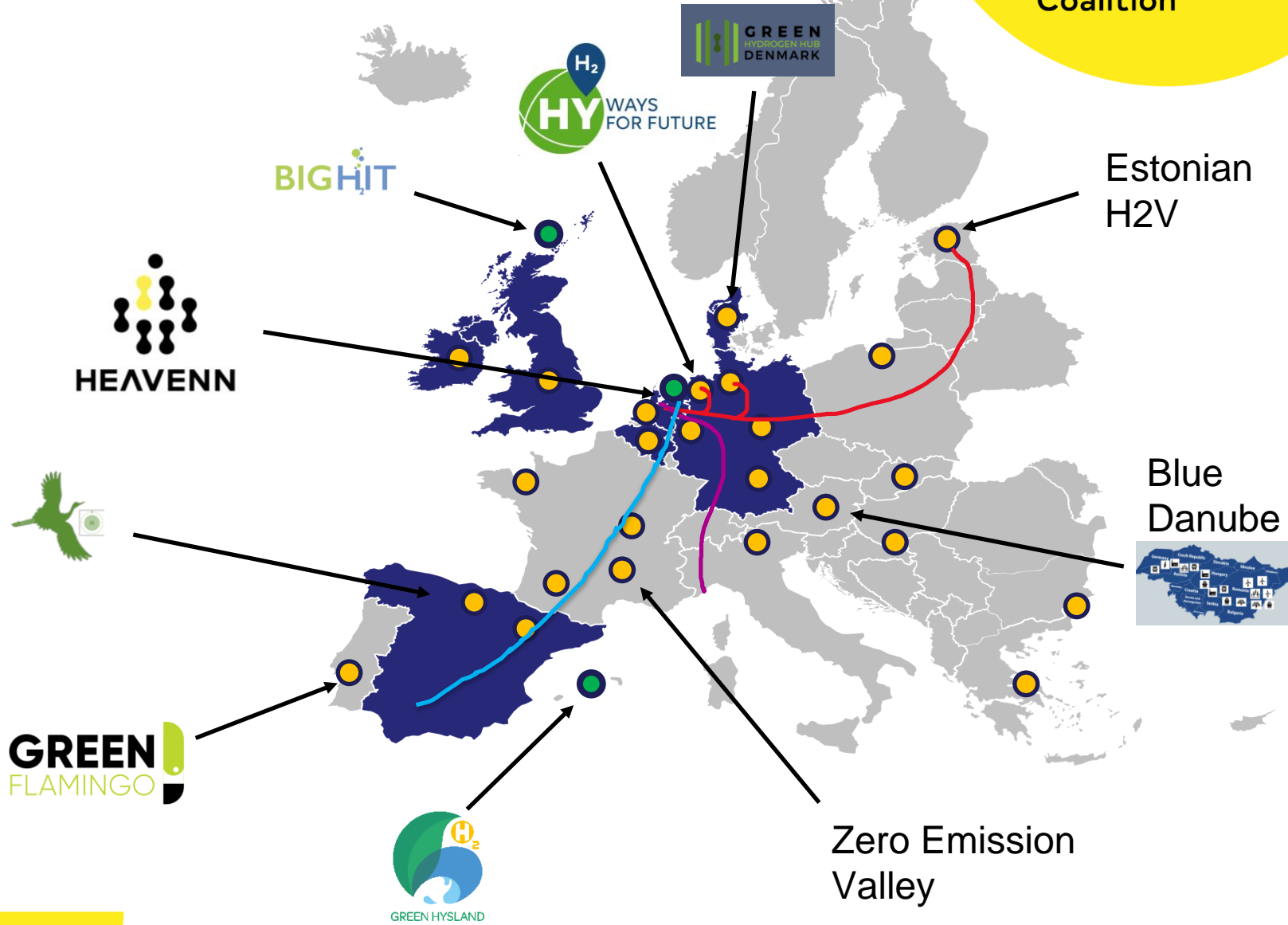


A green hydrogen future

Raising awareness and social acceptance at local and regional level

Connect Hydrogen Valley's

New Energy Coalition



Join us in Heavenn and Hydrogen Valley's



Further information, contact Patrick Cnubben:

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