International Partnership for Hydrogen and Fuel Cells in the Economy

The Netherlands Update

33rd IPHE Steering Committee Meeting

16 – 19 June 2020

Virtual Meeting

Announcements and/or New Initiatives
The Netherlands

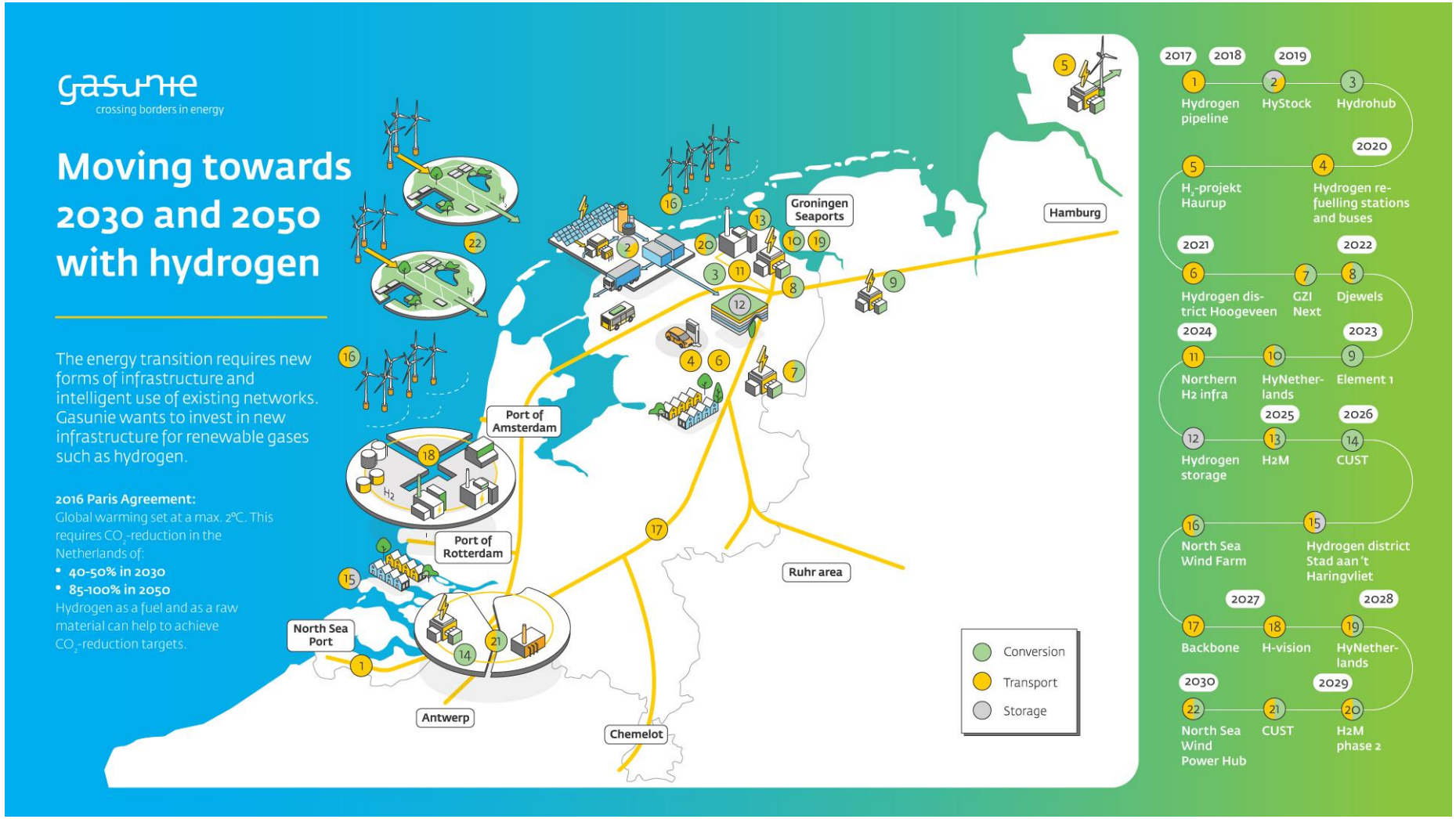
- **Investments/Funding/Policies/Initiatives**
  - Hydrogen Strategy March 2020
    - New EUR 25 million/ year upscaling instrument
    - H2 National Programme 2022
  - Multi-year Programmatic Approach for Hydrogen TKI New Gas
  - Mission-Oriented Research, Development and Innovation (MOOI) scheme (total budget EUR 65 million, not only for hydrogen)
  - Electrochemical Conversion & Materials (ECCM) program (EUR 25,7 million funding) for four R&D initiatives

Announcements and/or New Initiatives
The Netherlands

- **New Research & Development, Demonstration and/or Deployment Activities**
  - HEAVENN project: Hydrogen Valley in Northern Netherlands
  - NortH2 feasibility study: 4 GW Wind-H2 production in 2030, 10 GW beyond 2030
  - HyWay 27: hydrogen backbone study
  - Djewels project 20 MW electrolysis granted Eur 11m FCHJU subsidy. FID 2020.
  - Opening of the HAN H2 Lab in the industry park Kleefse Waard in Arnhem
  - Up to 800 MW plans for electrolysis until 2025 f.i. Tatasteel/Nouryon 100 MW, Engie/ Gasunie (100MW), New Shell/BP/Nuryon 250 MWproject in Rotterdam…

Announcements and/or New Initiatives

The Netherlands – Examples of NL H2 projects & Initiatives



Announcements and/or New Initiatives
The Netherlands

- **Key Collaborations**
  - Pentalateral Energy Forum: A joint political declaration by Ministers on hydrogen will be published in June 2020 (initiative of NL and Austria)
  - HY3: study over cross border H2 infrastructure between NL & Germany
  - IEA TCP-H2, MI, H2-CEM, IPHE
  - IPCEI (Portugal)

Examples of Lessons Learned and Impact

The Netherlands

Program initiative, policy, regulation or mandate	Lessons Learned/Outcomes
	Noticed that a new instrument between innovation and rollout was needed, primarily focused on upscaling green hydrogen production
National Climate Agreement & associated subsidies schemes	Challenge to combine CO2 reduction target with promotion of green hydrogen because of low renewable electricity in the Dutch energy mix
	Rise in demand to stimulate other hydrogen related techniques different from electrolysis

The Netherlands – Profile June 2020

Status of Deployments

- Start upscaling phase of green hydrogen (realizing 1-20 MW electrolysis)
- Kick starting clean hydrogen market

Leading Government Initiatives

H2 National Programme for:

- Reuse of existing gas grid
- market regulation
- GoOs & certification
- Safety
- H2 & offshore wind
- Blending obligation
- H2 in transport, built environment, electricity and agricultural sector
- International & regional strategy
- Research & innovation

Goals or Focus Areas

Upscaling green hydrogen production & achieving lower costs

Deployment Goals

- 3-4GW electrolysis in 2030, 500 Mw in 2025
- In 2025: 50 tank stations, 15.000 FCEVs en 3.000 heavy duty vehicles

Pilot projects to enable use of hydrogen for urban heating by 2030

Funding

€ 70 mln subsidy (DEI+ & new upscaling instrument) + SDE++ for green and blue hydrogen production

Thank you

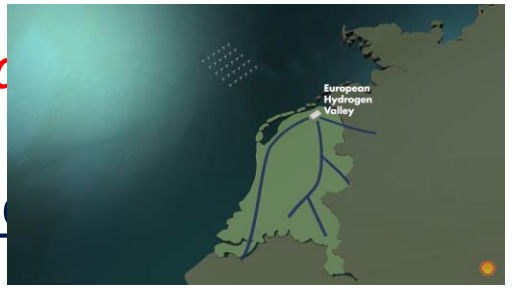
International Partnership
for Hydrogen and Fuel Cells
in the Economy

Highlight to Include in IPHE Newsletter *The Netherlands (to be submitted with country update but not to be presented for country update)*

- The Dutch government published in March 2020 an ambitious strategy and policy agenda on the development of the clean hydrogen market (https://www.government.nl/documents/publications/2020/04/06/government-strategy-on-hydrogen)

- Shell, Gasunie and Groningen Seaports announced the largest project worldwide for hydrogen production with offshore wind electricity and use of a hydrogen backbone in The Netherlands, connecting the industrial clusters among each other and with Germany. The consortium is performing the feasibility study and will have the results by the end of the year.

- *Caption of picture: Screenshot of the project's video showing the Netherl hydrogen backbone and the wind off shore. Visit the site for the video:* https://www.shell.nl/media/persberichten/2020-media-releases/grootst waterstofproject-van-europa-in-grongingen.html



Status of Applications and Goals *The Netherlands*

(to be submitted with country update but not to be presented. Will be used to update IPHE infographic/country pages on website)

Application	Status (As of *June 2020*)	Goal (For *2030*)
1) H_2 Applications		
a. Energy Storage (e.g. MW, GW of capacity)	*-*	*-*
b. Electrolyzers	*1 MW*	*3-4 GW*
c. Other (e.g., Steel, Marine, Fertilizer, etc.)	*-*	*-*
2) Transportation		
a. Light Duty Vehicles	*251*	*300.000*
b. Medium and Heavy Duty Vehicles	*20*	*3.500 by 2025*
c. Buses	*11*	*300 by 2025*
d. Trains	*1*	*-*
e. Forklifts	*0*	*-*
3) Stationary		
a. Residential	*Not known*	*-*
b. Commercial	*Not known*	*-*
c. Back Up Power	*Not known*	*-*
4) Other (applicable to your country and not covered in the categories listed above)		