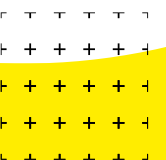




Hi Brest!

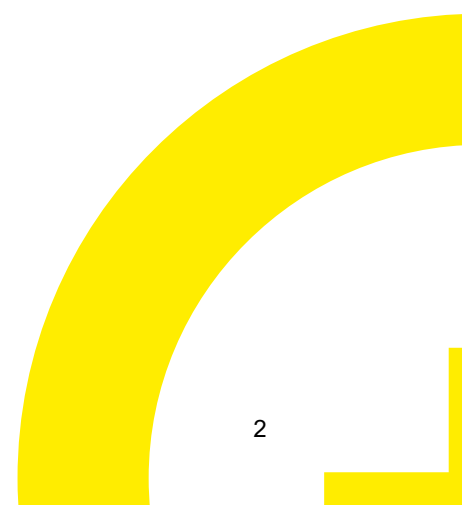
Valleys and ports: North Sea Hydrogen Valley Port's perspective

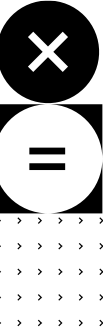




Koen Stamou

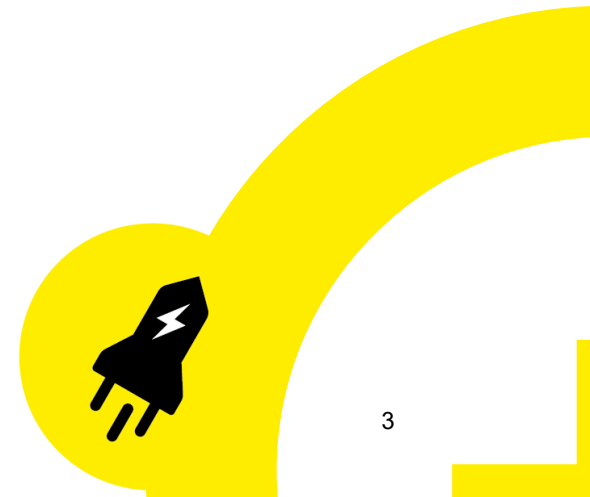
- MSc in innovation management and sustainability
- Coordinating and developing H2-projects
- Project Manager and Developer (Research and Innovation)
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About us

- Evergrowing, non-profit cluster organization of 150+ community member and partners
- Operational area covering the entirety of northern NL
- Accelerate the energy transition by:
 - Training the energy professionals of tomorrow
 - Developing and managing projects in the energy transition
 - Lobby for/advise governments on better governance instruments
 - Sharing knowledge, leveraging networks and making connections
 - Conducting research



Research and Innovation

- 2 primary topics: System Integration and Green Molecules
- 2021-2023 we have:
 - Worked on 56 innovation projects as lead partner/coördinator
 - Successfully developed 30 new projects as lead partner/coordinator
 - Managed a total project portfolio grossing €120M (Secured € 36.047.359) funding for ourselves and our partners
 - Developed the EU' first H2Valley Heavenn
- Deeply embedded in local energy programmes of Groningen and North Holland North



What are Hydrogen Valleys

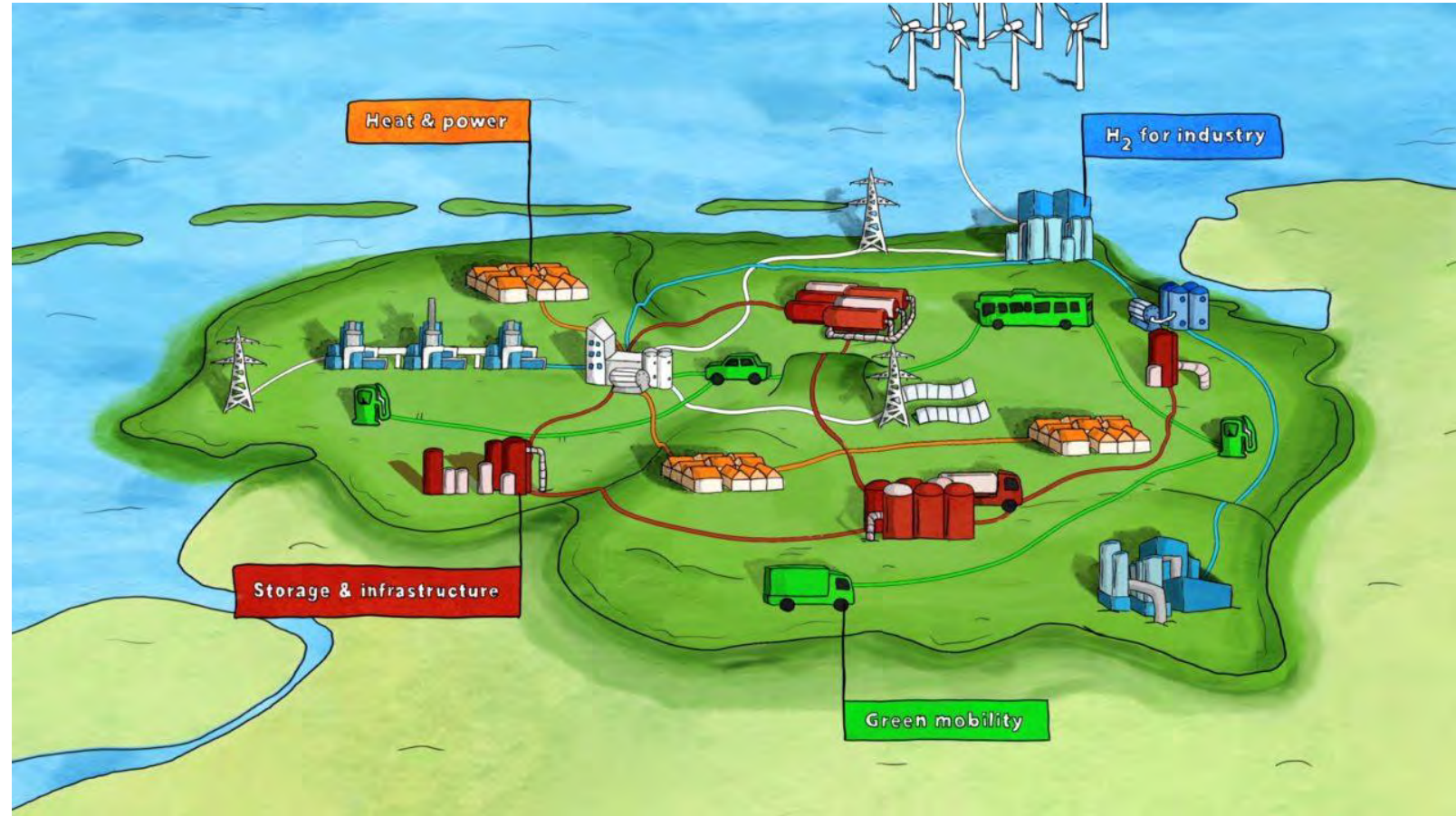
- Geographical scope
- Takes a value chain based approach
- Has a formalised management approach in a centralised fashion

Advantages

- Centralised management allows allocating needed resources and increases efficiency in business development
- Value chain based approach allows for derisking asset development
- More effective lobbying (especially locally, but also in EU-context)
- Allows synchronization of stakeholders (permits, funding, roadmaps)

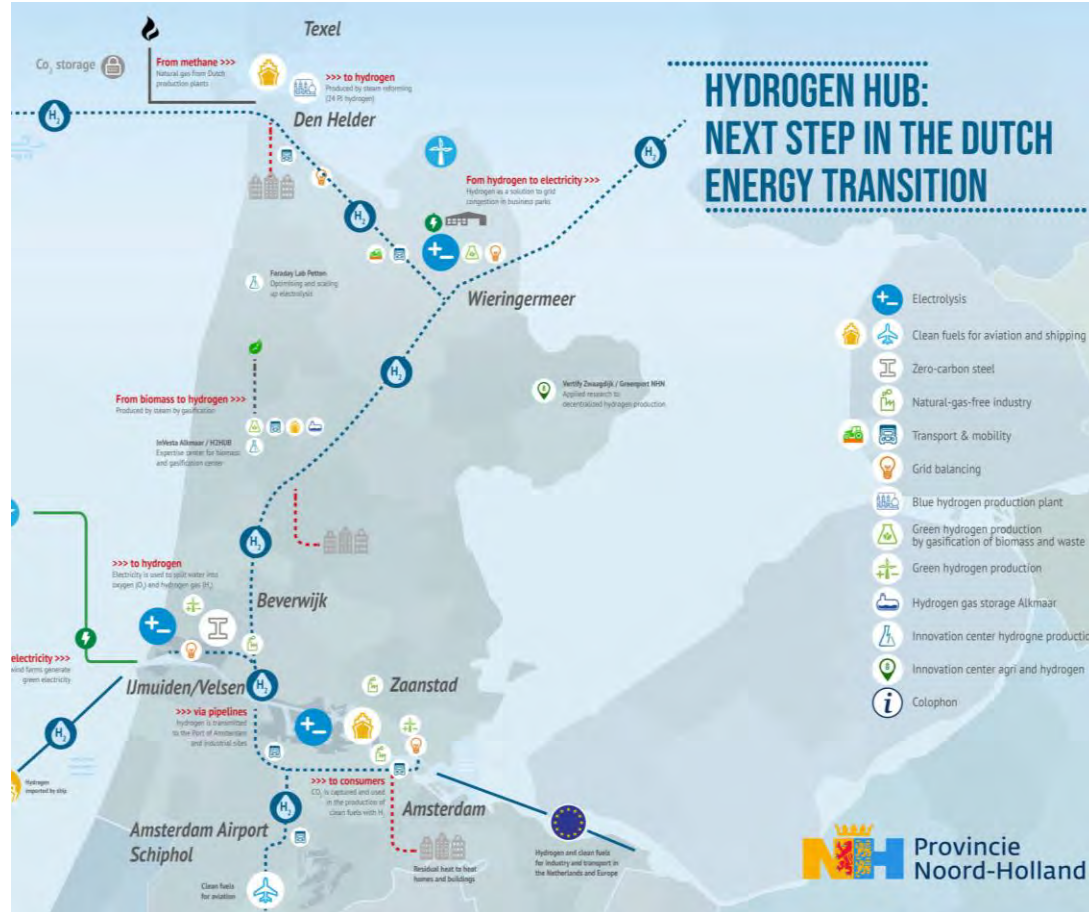
HEAVENN

- EU' first H2Valley
- Full FID expected this year
- 20 Million grant, 80 million private-public cofunding
- 30 Partners
- Highly innovative elements
- <https://heavenn.org/about/>



H2GENIUS (North Holland Valley, in development)

Hydrogen to Gear Energy Networks for Innovative Use and Sustainability



- Recently awarded valley of the year
- >600 MW in prospective Electrolyser capacity
- Over 60 separate initiatives
- Full financial programme scope of 3.8 Billion EUR, directly supported: 300 ME
- Huge regional economic potential
- E-Grid congestion calls for alternatives
- Population density calls for innovative storage and utilization
- Depending on imports as well (at least 60.000 tons LH2 in 2028/2029)
- 10 replicating valleys (including Brest)
- <https://h2hub-nh.nl/>

North Sea Hydrogen Valley Ports (1)

- Interreg NSR
- Aims to mitigate governance barriers in the development of maritime H2 valleys
- Accelerate maritime H2 transition by building, connecting to, and leveraging stakeholder and interest networks
- Will draw up 4 roadmaps for efficient H2 production, storage, bunkering infrastructure, general infrastructure and (fuelcell based) shore power, in Brest, Bremen, Esbjerg and Den Helder
- Partners: NEC, Development agency NHN, Ports of Brest, Bremen, Esbjerg, Ballard, Municipality of Laholm, Unicaen, ISL

North Sea Hydrogen Valley Ports (2)

Detailed look at governance barriers in developing 4 valleys in the NSR

Preliminary findings (From NL perspective):

- EU-focus needs to be increased for alternative ways of producing E-fuels (Methanol through thermochemical)
- Insufficient support for offtakers
- Focus on mature import carriers limiting innovation and feasibility
- Tunnel vision in types of hydrogen
- Pricing of TSO-connections

Importance of cooperation within the valley

- Join forces to lobby for more conducive institutional environment with whole sector
- Trust is needed. Its proven that in a local setting a VC based approach can lead to FIDs (start small)
- Facilitate knowledge sharing
- MA must assist starting initiatives and infrastructure developers
- Increase of funding opportunities as programme level qualifies too

Importance of cooperation between valleys

- Exchange of best practices
- Exchange of use-cases, concept designs allow standardization
- Import and export of technologies allows avoiding redundant R&D-programmes and more efficient scaling of technologies
- Lobbying at EU-level → very important and can definitely be effective

But very tangible; imports and exports

- Hugely capital intensive
- Offtake needs to be guaranteed
- For our LH2: 60-100.000 tons
- Governments need to guarantee offtake rather than subsidize, to build a much needed sector
- Setting up joint imports in NSR really allows reaching thresholds earlier

Closing questions: Should the NSR, Baltics and Atlantic focus on 1 corridor per carrier (LH2, Ammonia, LOHC/Methanol)? Who should do this?