



Gas
Infrastructure
Europe

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GEODE SPRING SEMINAR 2021

26 MAY 2021

Green Gas as the third pillar of the energy transition?

Boyana Achovski - GIE Secretary General

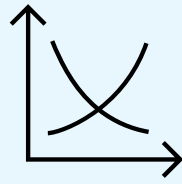
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Gas infrastructure is central to decarbonisation



- EU association of gas infrastructure operators
- Around 70 companies from 27 European countries
- Pipelines, underground storage & LNG terminals
- Develop innovative projects across Europe
- Cost-efficient, secured & sustainable solutions



Market-based solutions



Stable and predictable regulatory framework



Cross-border gas exchange



Safe and reliable European transmission



The European gas infrastructure in numbers

Transmission: 2,2 mln km gas pipelines

Underground storage capacity: around 1,200 TWh

Import terminals: 240 bcm regasification capacity

With the right policy framework & incentives, this extensive infrastructure can be fit to **transport & store** hydrogen:

1. Over long distances
2. In large volumes
3. In a cost-effective manner



The blooming of hydrogen ecosystem

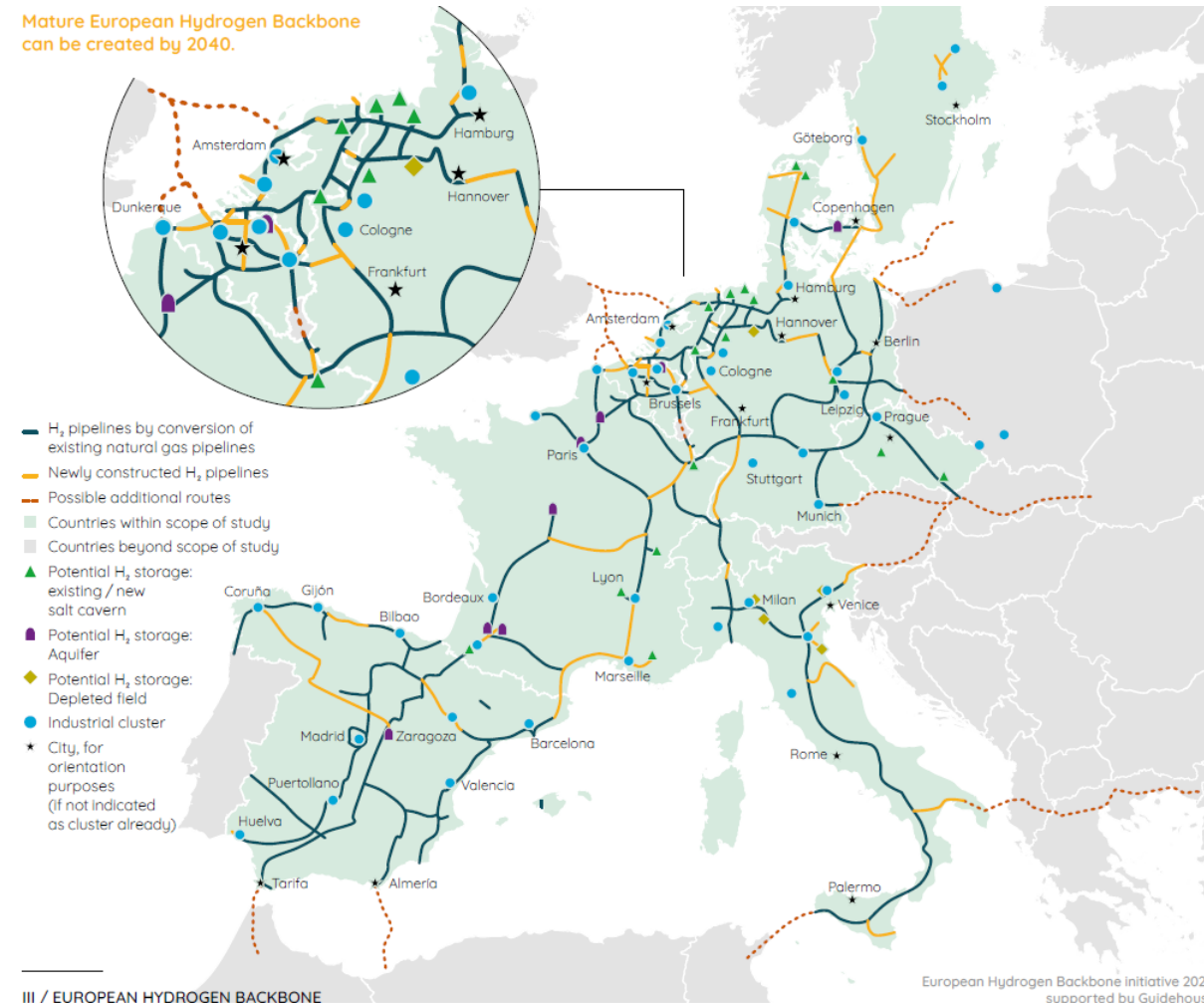
Opportunities:

Importing renewable hydrogen from the North Sea & North Africa via the gas infrastructure

Establishing a strong H2 market:

- Gradual development
- Development of Clusters and European core hydrogen network (backbone) in parallel
- Facilitate the connection between supply, storage & demand

Mature European Hydrogen Backbone can be created by 2040.



Benefits of the gas infrastructure for integrating hydrogen

The gas infrastructure is able to follow different **pathways** for the integration of **hydrogen**:

Retrofitting

- Enables hydrogen to be blended into natural gas
- (De)blending to enable quick decarbonisation wins and scale-up of (de)centralised hydrogen production/technologies
- Cost-effective transitional solution in several EU countries

Repurposing

- Using existing gas infrastructure to transport, store and import and export 100% hydrogen
- Cost- and time savings
- Minimise need for new energy infrastructure

Building new infrastructure

- Connecting hydrogen supply and demand
- Infrastructure companies have the expertise to build, own and operate hydrogen infrastructure

Transmission Pipelines

- Single hydrogen pipeline can transport **10-20 times more energy** than an electricity cable¹
- Repurposing pipelines at **10-35% of costs** that would be required for newly built hydrogen pipeline²

Storage Sites

- Salt caverns, depleted fields and aquifers in the EU could already today have a theoretical potential of storing **60 TWh** hydrogen³
- Gas storages are at least **100 times cheaper** than electricity storage costs in batteries⁴

Terminals

- Retrofitting and repurposing LNG Terminals **at lower costs** (compared to investments into new terminals) that contribute to enable the **intra-EU trade** and **non-EU imports and exports of hydrogen and hydrogen carriers**

1)https://static1.squarespace.com/static/5d3f0387728026000121b2a2/t/5e85aa53179bb450f86a4efb/1585818266517/2020-04-01_Dii_Hydrogen_Studie2020_v13_SP.pdf

2)https://gasforclimate2050.eu/sdm_downloads/european-hydrogen-backbone/

3) <https://gie.eu/index.php/gie-publications/databases/storage-database>

4)https://static1.squarespace.com/static/5d3f0387728026000121b2a2/t/5e85aa53179bb450f86a4efb/1585818266517/2020-04-01_Dii_Hydrogen_Studie2020_v13_SP.pdf

Innovative projects across Europe

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Today's #GIEnergyShot is about the creation of the first #HydrogenValley and hydrogen-based economy on a European island: Mallorca. Let's give a look at the #GreenHysland project to see how it showcase ...see more



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The use of #RenewableEnergy is increasing. But how do we store the excess of energy? Using the existing #GasInfrastructure, #AquamarineProject is offering a long-term solution while contributing to the achievement of the #decarbonisation targets.

Using the existing #GasInfrastructure, #HungarianGasStorage plans to store #hydrogen in depleted fields and to inject it into the grid for domestic and industrial purposes.

This project uses PEM-electrolysis which has a higher level of efficiency (65-77%) and requires a lower temperature to operate (80°) than the AEC-electrolysis, thus reducing its carbon footprint.

#EmissionsReduction #TSOs #GIEInnovates

MAGYAR FÖLDGÁZTÁROLÓ
Member of MVM Group




Aquamarine Project by Hungarian Gas Storage

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Discover the Baltic Pipe Project

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THANK YOU
For your attention

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