

# HYDROGEN EUROPE

08 June 2021

**Jorgo Chatzimarkakis, Secretary General**

---

# Introduction

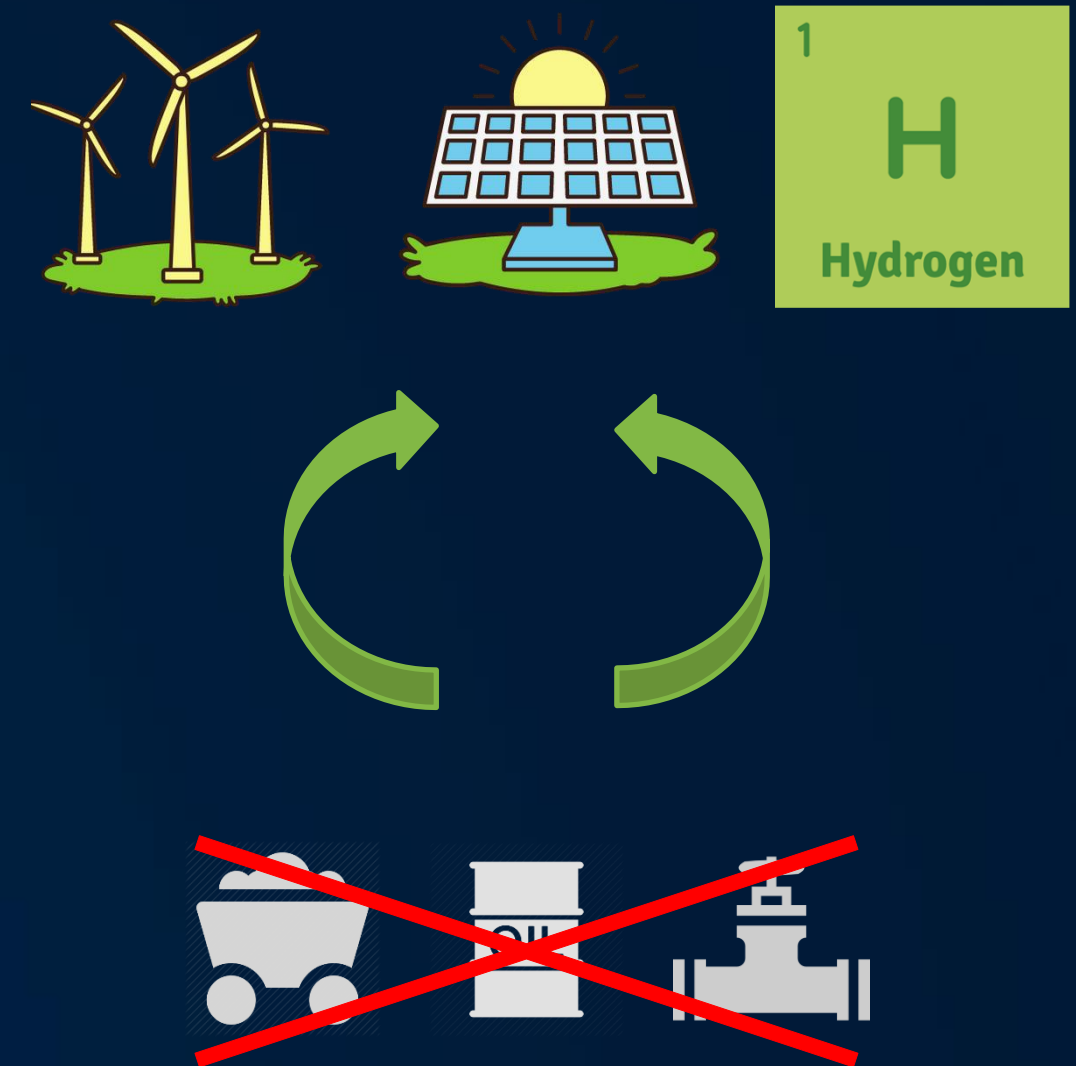
Hydrogen will become a crucial energy vector and the other leg of the energy transition – alongside renewable electricity...

... by replacing coal, oil and gas across different segments of the economy.

The rapid development of hydrogen is not only important for meeting the EU's climate objectives...



... but also for preserving and enhancing the EU's industrial and economic competitiveness.



# H2 infrastructure roadmap

## Kick-start

Fast-tracking of initial projects that achieve the European 1 million ton target by 2024

-----  
Captive production, blending, H2 Valleys, IPCEIs, pipelines, etc.

## Ramp-up

Building Hydrogen Valleys

Building a pan-European Hydrogen backbone infrastructure

Blending hydrogen with natural gas

## Market Growth

Converting large part of the natural gas infrastructure

2020

2025

2035

2050

---

## Kickstart and ramp up phases (202-2035)

### Blending hydrogen with natural gas

- Transitional option in regions without parallel/ duplicated networks, or (potentially) available gas infrastructure capacity to be easily repurposed in the short-term.
- Set right blending percentage, inject in carefully selected locations in high or mid pressure transport natural gas pipelines, inject into salt cavern hydrogen stores and meter it into the gas grid at required rate.

### Building a pan-European hydrogen backbone infrastructure

- Necessary to physically transport hydrogen and crucial for a liquid hydrogen gas market.
- Hydrogen backbones connect areas of low-cost clean hydrogen production with large scale storage and demand centres elsewhere.

### Building hydrogen valleys with regional and local hydrogen infrastructure

- H2 applications combined into an integrated ecosystem -> H2 demand connected to H2 infrastructure
- Local storage or import export of H2 by trucks, train or ship.
- Synergies with EU Offshore Renewable strategy -> offshore H2 hubs



# Hydrogenewables: a case for reaping RES-H2 synergies and developing offshore infrastructure



Offshore platform electrolysers directly connected to offshore wind power production.

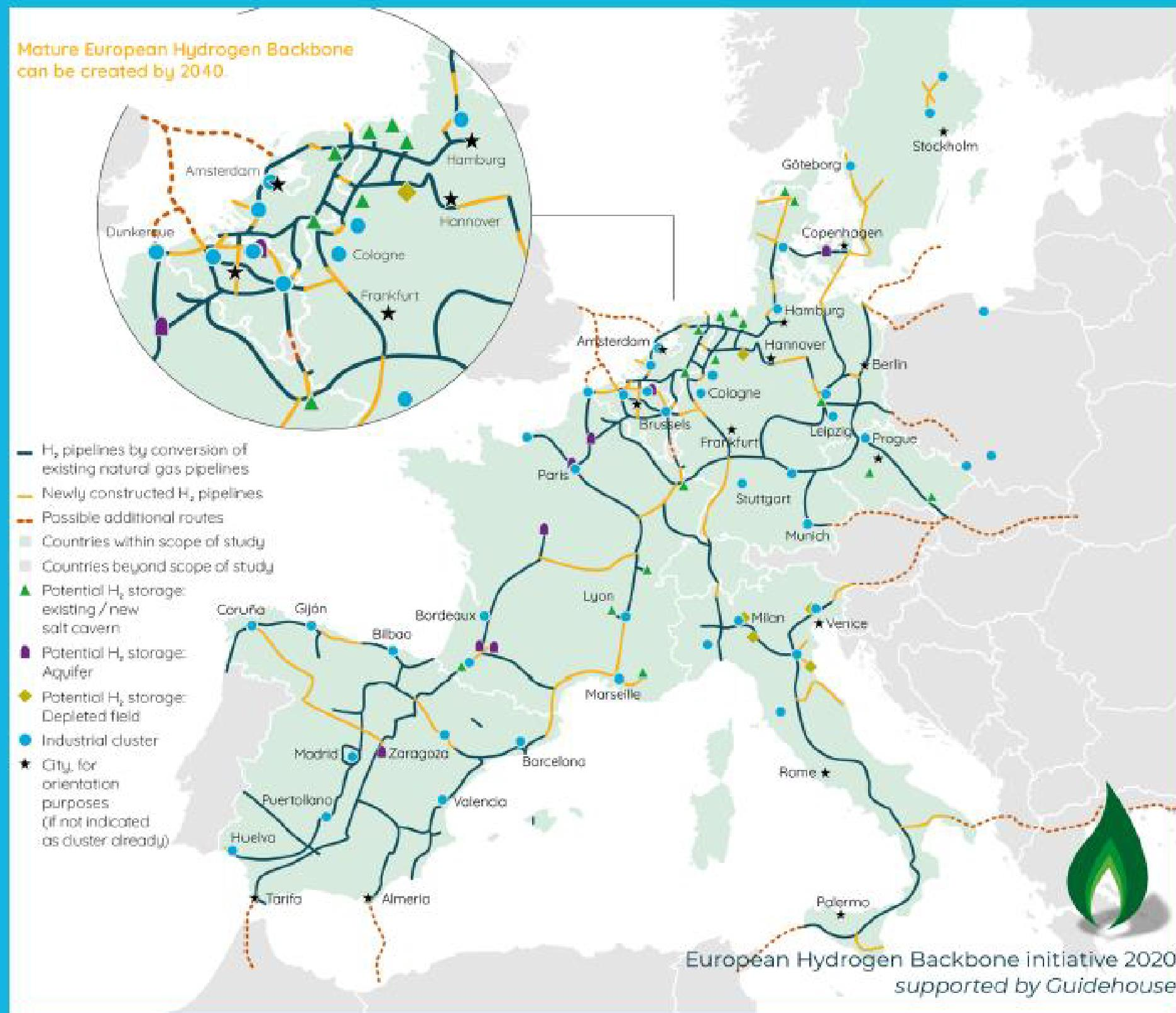
Repurposed/retrofitted offshore pipelines transporting H2 to shore to hydrogen valleys or further along the EU hydrogen network.

Offshore platform as a hydrogen hub at sea supplying hydrogen to ships in transit.

Renewable energy and hydrogen industries are strategic partners to materialise the EU Hydrogen Strategy's target for a 40 GW electrolysis capacity by 2030 and to achieve the EU's updated 55% greenhouse gas emission reduction target.



# Market growth phase 2035-2050



## By 2050:

- Renewable electricity, hydrogen and other renewable/low-carbon gases will have substantially replaced natural gas, oil and coal demand.
- Europe will have an integrated system of hydrogen backbones, which covers the entire continent and connects to neighbouring regions.
- On-site conversion of renewable electricity into hydrogen and shipping/on-site fuelling will become more and more relevant both for use in industry, maritime and heavy-duty transport.
- End-use appliances and equipment -> converted or adapted to hydrogen.

# Regulation of H2 Networks

**Not a  
mirroring  
exercise**

**NEW!**

## Design a distinct legal framework at EU level

- Development of hydrogen market will not be identical to that of natural gas market. Gradual and flexible approach needed in line with market and infrastructure developments. Inserting h2 into existing gas laws doesn't provide sufficient flexibility.
- Hydrogen market framework should, as basic principles, respect same principles of unbundling, third party access, transparency, non-discrimination, cost reflectivity for tariff setting, monitoring and oversight by NRA and ACER.
- Hydrogen and natural gas are not interchangeable in all applications e.g., transport fuel cells or as feedstock in energy-intensive industries.
- Continue logic conveyed in revised TEN-E proposal (separate h2 category in annex II) to ensure consistency and coherence between legislation -> clear separation between hydrogen infrastructure and natural gas infrastructure.
- Potential for a grandfathering clause should be taken into consideration with regards to existing H2 networks which are largely owned privately.



**THANK YOU  
FOR YOUR ATTENTION**

A decorative pattern of small, light yellow dots arranged in a grid-like fashion, located in the bottom right corner of the slide. The dots are slightly blurred and fade out towards the right edge.