



# Hydrogen Europe

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# The Solution for decarbonisation

Enable the renewable energy system —————> Decarbonize end uses

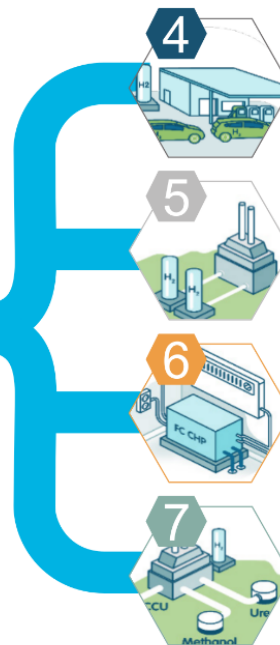
Enable **large-scale renewables integration** and **power generation**



**Distribute** energy across sectors and regions



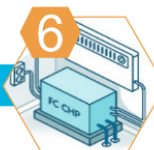
Act as a **buffer** to increase system resilience



Help decarbonize **transportation**



Help decarbonize **industrial energy use**

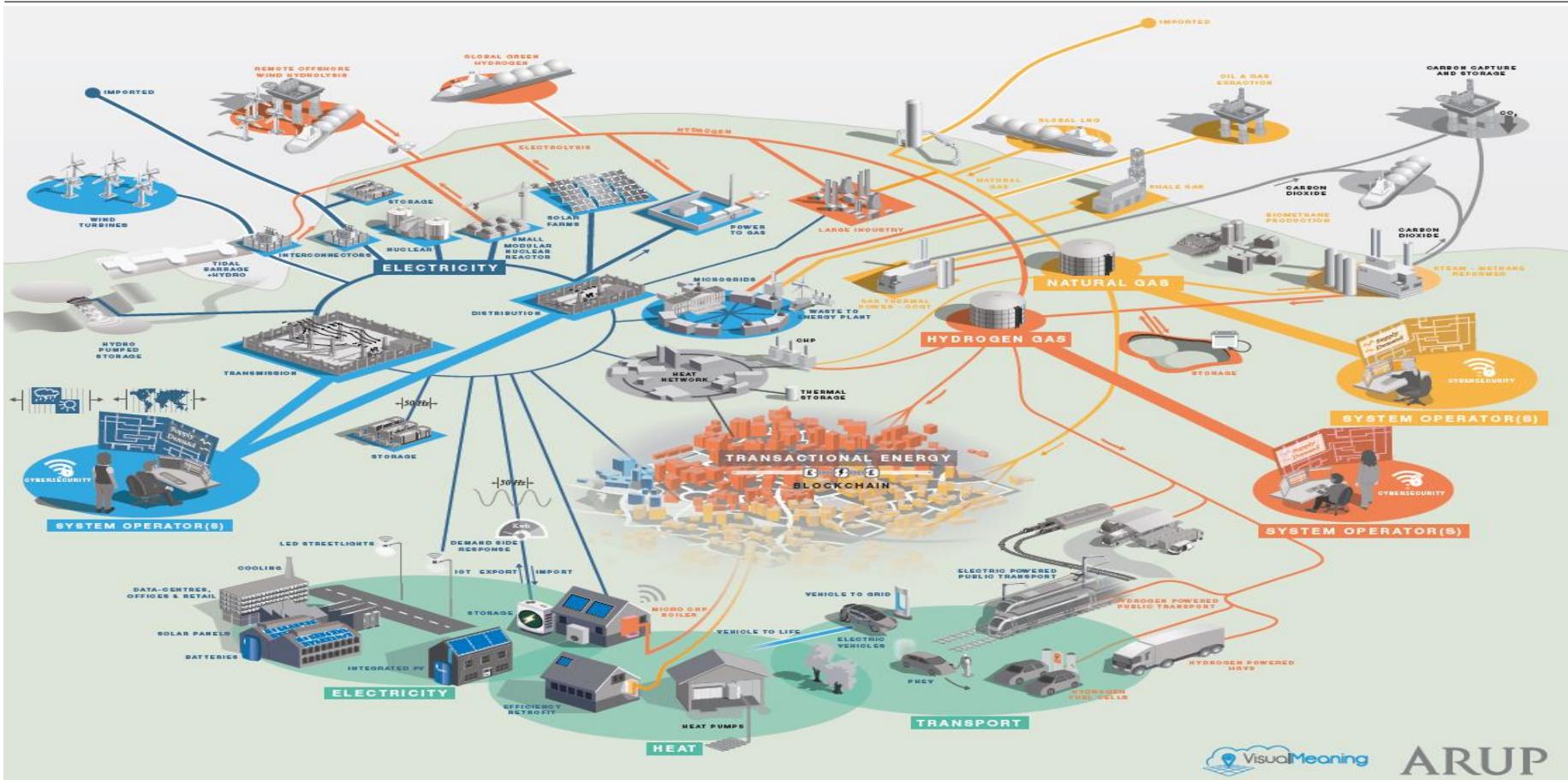


Help decarbonize **building heat and power**



Serve as **renewable feedstock**

# Long Term Strategy 2050: Sectoral Integration



BESIDES CO<sub>2</sub> ABATEMENT, DEPLOYMENT OF THE HYDROGEN ROADMAP ALSO CUTS LOCAL EMISSIONS, CREATES NEW MARKETS AND SECURES SUSTAINABLE EMPLOYMENT IN EUROPE

## 2050 hydrogen vision



~24%

of final energy  
demand<sup>1</sup>



~560 Mt

annual CO<sub>2</sub>  
abatement<sup>2</sup>



~EUR 820bn

annual revenue  
(hydrogen and  
equipment)



~15%

reduction of local  
emissions (NO<sub>x</sub>)  
relative to road transport

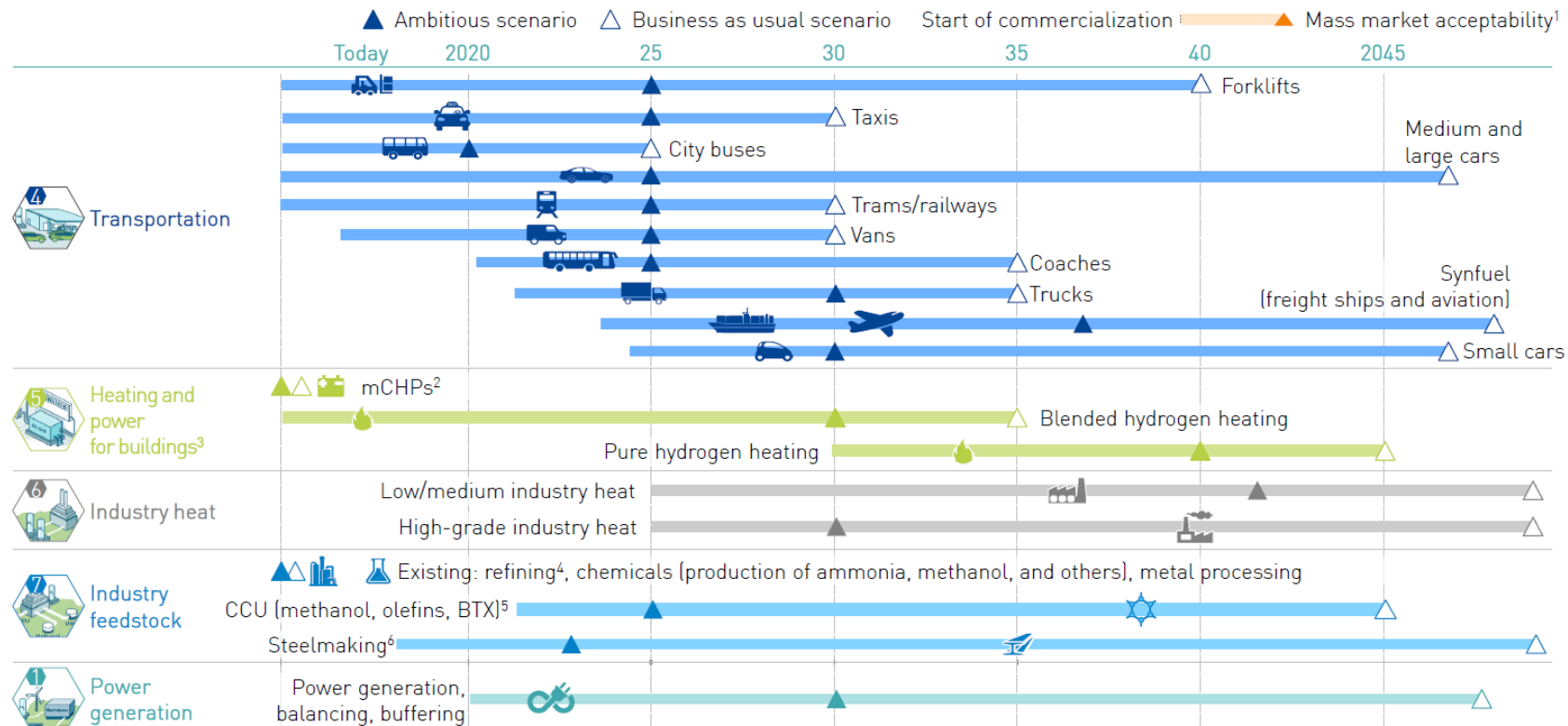


~5.4m

jobs (hydrogen,  
equipment, supplier  
industries)<sup>3</sup>

# Hydrogen Roadmap for Europe

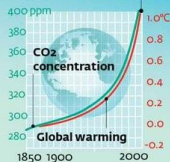
## HYDROGEN TECHNOLOGY EXISTS AND IS READY TO BE DEPLOYED



# Hydrogen Valleys: H2 in The Netherlands

## Moving towards 2030 and 2050 with hydrogen

The earth has warmed up by 1.1°C since 1850

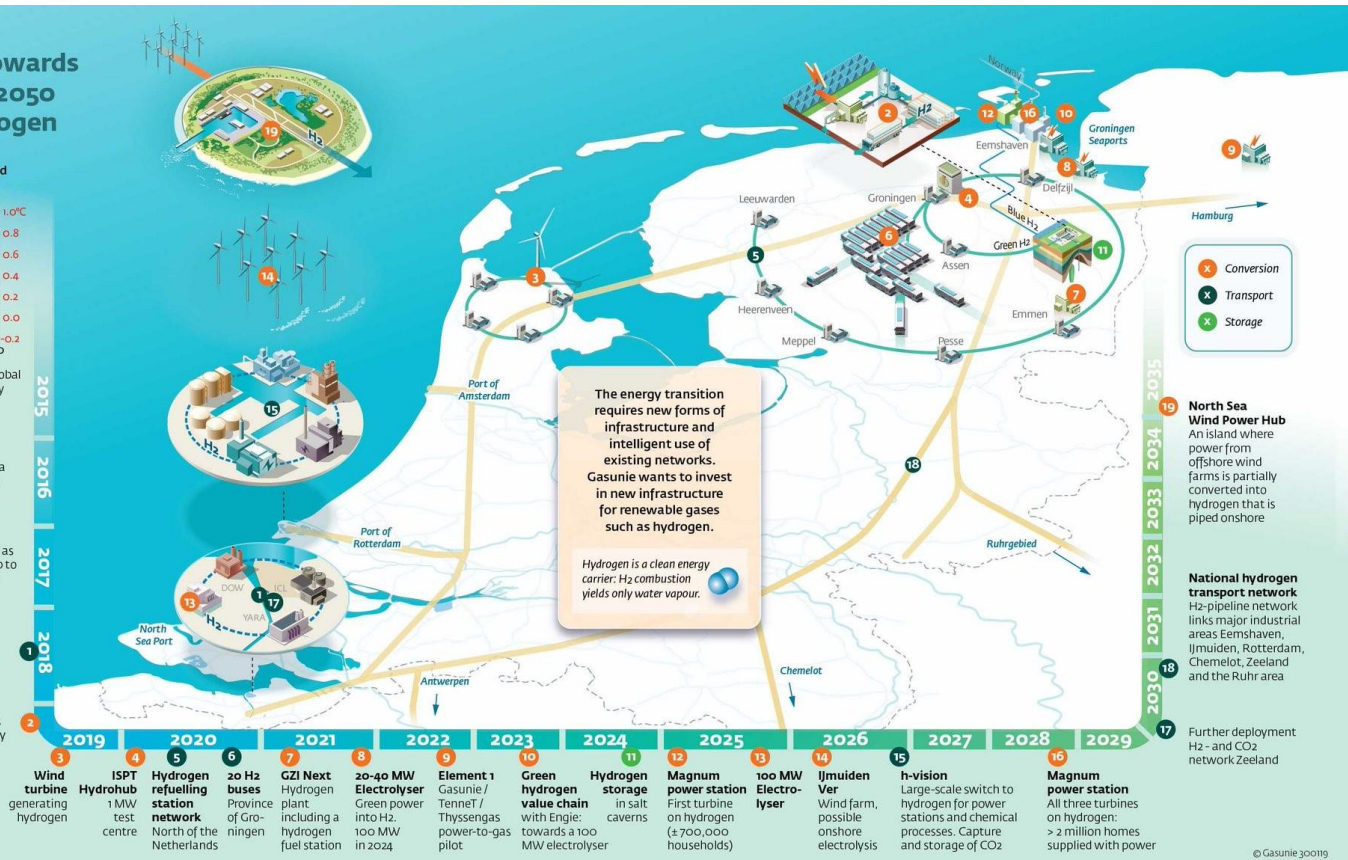


If we do nothing the global temperature will rise by another 4°C by 2100

22 April 2016  
**Paris Agreement**  
Global warming set at a max. 2°C. This requires CO<sub>2</sub>-reductions in the Netherlands of:  
• 40-50% by 2030  
• 85-100% by 2050  
Hydrogen as a fuel and as a raw material can help to achieve CO<sub>2</sub>-reduction targets

**Hydrogen pipeline**  
Linking hydrogen industries in Zeeland and the Delta region

**Pilot project HyStock**  
Converting solar energy into hydrogen in Zuidwending





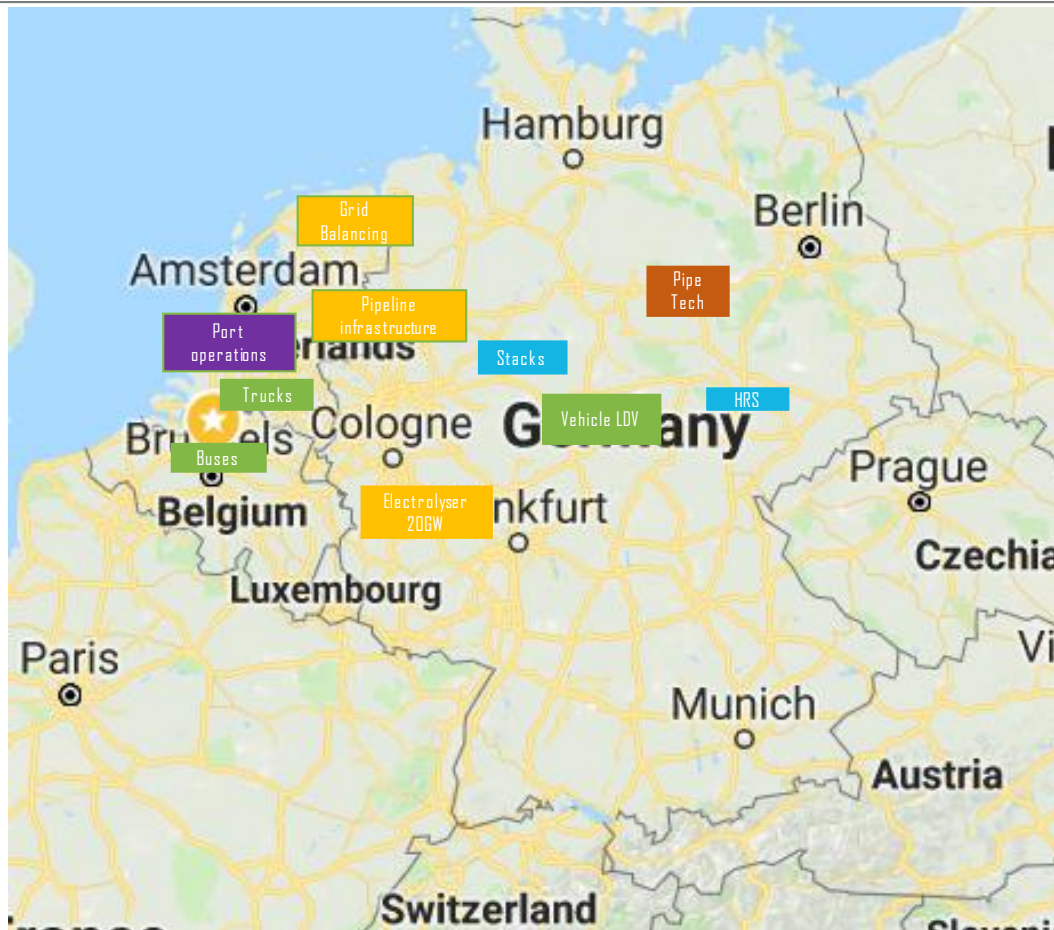
# Important Projects of Common European Interest



Geographically, 3 IPCEI's can be identified



# Important Projects of Common European Interest



IPCEI 1: Netherlands, Belgium & Germany:

- Off-shore wind
- L-gas pipelines
- Electrolyser capacity
- Trucks
- Light Duty Vehicles

# Important Projects of Common European Interest



IPCEI 3: Spain, Portugal, France, Germany & Poland:

- Stacks
- Buses & trains
- Tanks
- Electrolyser capacity?

# Important Projects of Common European Interest



IPCEI 2: Italy, Slovenia & Austria:

- Port strategy
- Pipeline hub in Austria
- Liquid hydrogen



### **Contacts**

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