

Webinar

From hydrogen hype to hard reality

Realistic hydrogen demand and supply  
volumes and its implications on the EU  
Hydrogen Economy



June 28th

10 to 11:45 am (CET)

Hydrogen H<sub>2</sub>



## Agenda

Brief Introduction

Study Presentation (incl. Q&A)

*'Perspectives for Green Hydrogen in Europe:  
Detailed Analysis of Germany, Poland and Portugal Case'*

*by Ben McWilliams, Bruegel*

Experts Round Table (incl. Q&A)

- Marta Lovisolo, Bellona Europe
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*But first ...*



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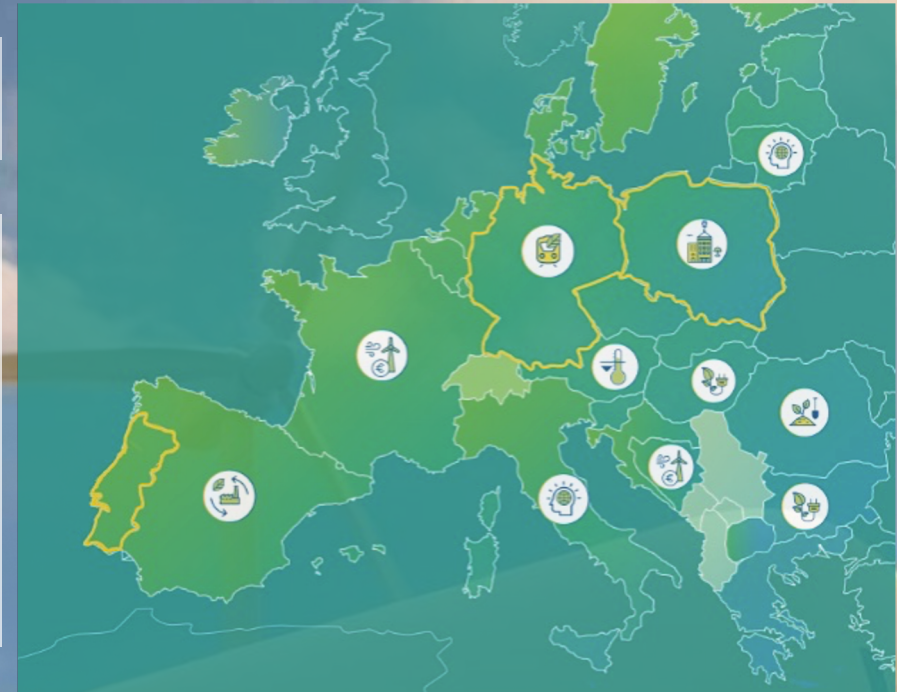
# GREEN(ING) H2 PROJECT



**Green (ing) H<sub>2</sub>**  
FAIR AND SUSTAINABLE HYDROGEN IN EUROPE



The project team aims to empower civil society – such as NGOs, think tanks and associations – to actively engage in the hydrogen debate on EU level as well as in Poland, Germany and Portugal as countries which hold key roles in advancing the hydrogen industry in Europe.





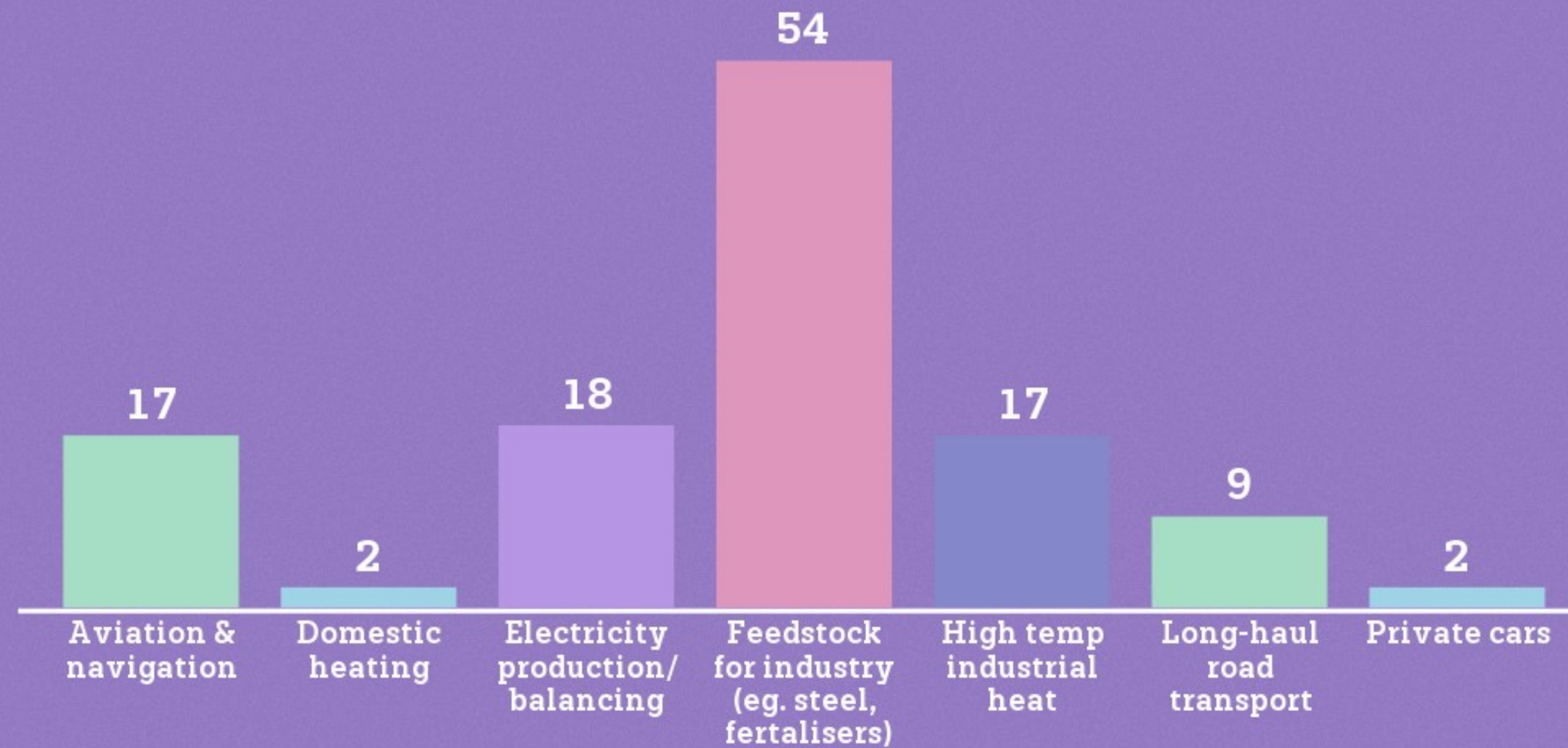
# Webinar Warm Up







# Choose your top 2 hydrogen applications:





# Thank You

Enjoy the Webinar





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*Improving economic policy*

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# European Hydrogen 2030: with a focus on Germany, Poland and Portugal

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Ben McWilliams,  
Affiliate Fellow Bruegel

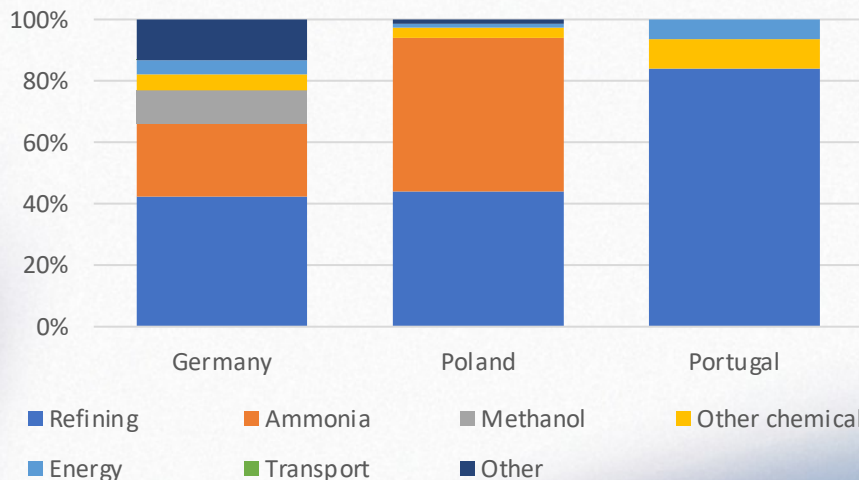
[bruegel.org](https://bruegel.org)



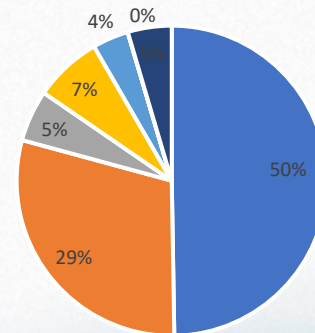
# Existing Hydrogen Demand

- Concentrated **industrial demand**
- **Natural gas-based** production

Proportional Existing Hydrogen Demand



EU Hydrogen Demand (2020)



Source: FCHO



# Technical potential for hydrogen demand



## Possible Future Demand

<b>Primary Steel</b>	Currently appears the most promising option for decarbonising primary steel production in the EU, relevant before 2030.
<b>High-temperature industrial heat</b>	Unlikely to compete with electricity for low- and medium- temperature heat, but still uncertain for higher temperatures, relevant before 2030.
<b>Navigation</b>	Likely demand to emerge via consumption of methanol and ammonia produced from hydrogen, larger demands likely after 2030.
<b>Aviation</b>	Highly uncertain, larger demands likely after 2030.
<b>Heating buildings</b>	No strong business case for hydrogen beyond niche applications, any demand would materialise after 2030.
<b>Seasonal power storage</b>	Uncertain demand, a promising option for exploration. Significant role only likely after 2030.

## Existing Demand

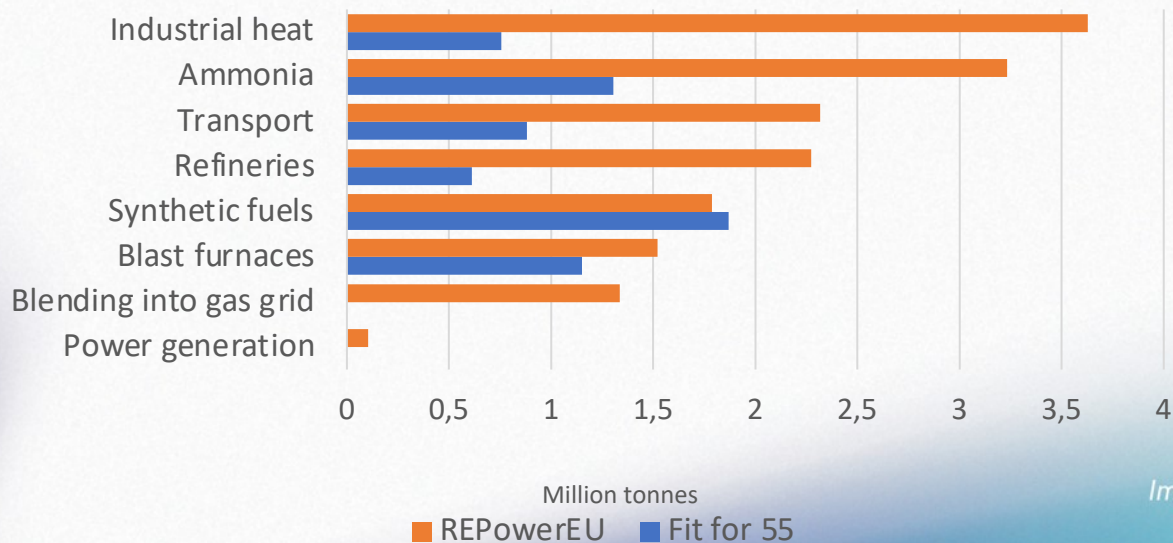
<b>Ammonia</b>	Existing feedstock demand can be directly replaced by renewable hydrogen, relevant before 2030.
<b>Methanol</b>	Existing feedstock demand can be directly replaced by renewable hydrogen, relevant before 2030.
<b>Oil Refining</b>	A certain amount of hydrogen demand could be replaced. Future demand uncertain given decline of industry, relevant before 2030.



# Political Ambition



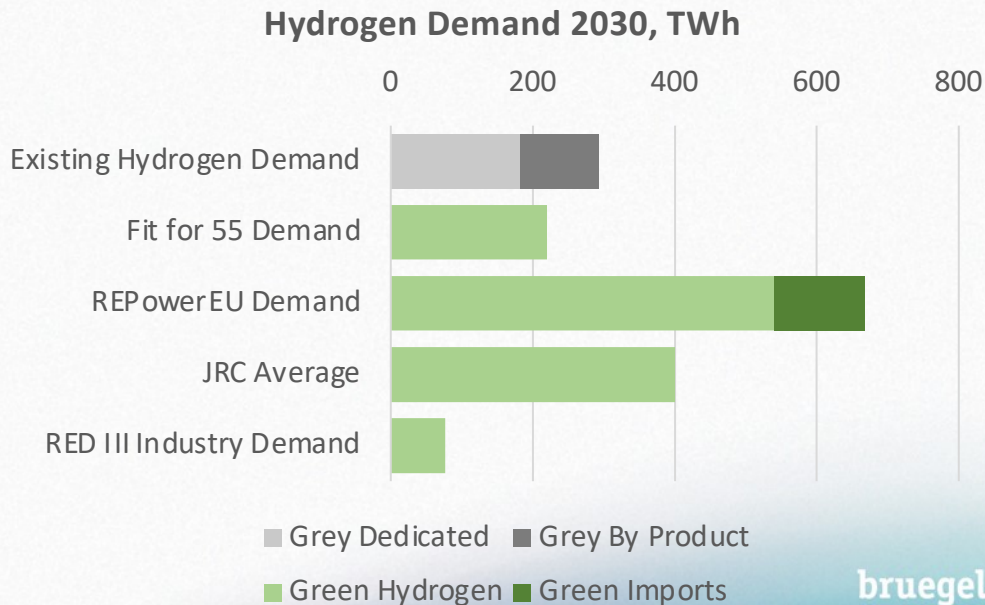
- 2030 Targets: energy crisis shifted discourse on hydrogen from **niche complement to electricity** to **replacing natural gas**





# Reality Check

- Independent estimates are **substantially lower** than REPowerEU
- Included that based on the RED III industrial demand
- Projects **not taking FID**. Might change with delegated acts.





# How and where hydrogen is traded



- Pure hydrogen (**pipeline**) vs derivative hydrogen (**ship**)
- Imported derivatives (eg Ammonia) **will be consumed as derivatives** (eg to make fertiliser):
  - REPowerEU implies huge derivative imports
  - **Ship trade accelerating more quickly** than pipelines (Hydrogen Bank, H2Global)
  - Early projects typically have intention to transport ammonia (or methanol)
- Potential for intra-EU trade as well as from outside EU



# A deeper look at the National Strategies



	Germany	Poland	Portugal	EU
Production	Renewable (electrolyser) hydrogen	<b>Low-carbon hydrogen (technologically neutral)</b>	Renewable (electrolyser) hydrogen	Renewable (electrolyser) hydrogen
Trade	<b>Strong focus on imports</b>	No clear focus	<b>Exports are implied</b>	Strong focus on extra-EU imports
Demand: Industry	Strong focus	<b>Strong focus, but no indicators and underdeveloped policy vision</b>	Strong focus – notable lack of existing significant hydrogen demand in chemicals sector	Largest focus on industry
Demand: Power Sector	Substantial focus: hydrogen-ready turbines	Strategy sees relevance, but no clear action	<b>No focus: possibility of seasonal contribution (especially considering reliance on hydro)</b>	Sees one of the main applications of hydrogen being the integration of renewable electricity
Demand: Households	Significant role not explicitly planned	Strategy intends to explore, but no serious commitments	<b>Explicit target of blending 10-15% hydrogen into the natural gas grid</b>	Not considered relevant under Hydrogen Strategy, but REPowerEU considered 3% blending of hydrogen into the gas grid



# Key Conclusions of the Study



- **Electrification, energy efficiency, and deployment of renewables** remain the imperative
- Concerning hydrogen, policymakers should retain a focus on **no-regret applications**
- Emergence of **geographic clusters** of industrial hydrogen demand  
Europe faces a defining question on the **future of its heavy industry**
- More exploration on the role for hydrogen in **smoothing seasonal electricity markets**
- Three strategies **broadly consistent with wider EU hydrogen framing**, but **REPowerEU is an outlier**



# *Thank you!*

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## Experts Round Table (incl. Q&A)

- Marta Lovisolo, Bellona Europe
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### TOPIC 1

What are possible strategies and policies to prioritize hydrogen application in those sectors where its climate impact is highest?

### TOPIC 2

What are realistic hydrogen demands for the EU and are current and planned EU regulations able to deliver these demands?



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# THANK YOU !

## SPEAKERS & AUDIENCE

- Marta Lovisolo, Bellona Europe
- Ewa Mazur, RWE
- Ben McWilliams, Bruegel

## NEXT STEPS

**Green(ing) H2 Project** will soon be publishing a set of **Guidelines** and a **Policy Brief**

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