



Hydrogen Europe

*Presentation of the Green Hydrogen Report in Catalonia,
18 July 2022*

● Hydrogen Europe in numbers

390+ Members

We represent the whole value chain
from producers to end users

38+ Employees

103k+

Followers
on Social Media

We are the
fastest growing
association in
Europe



Hydrogen Europe Regional Pillar



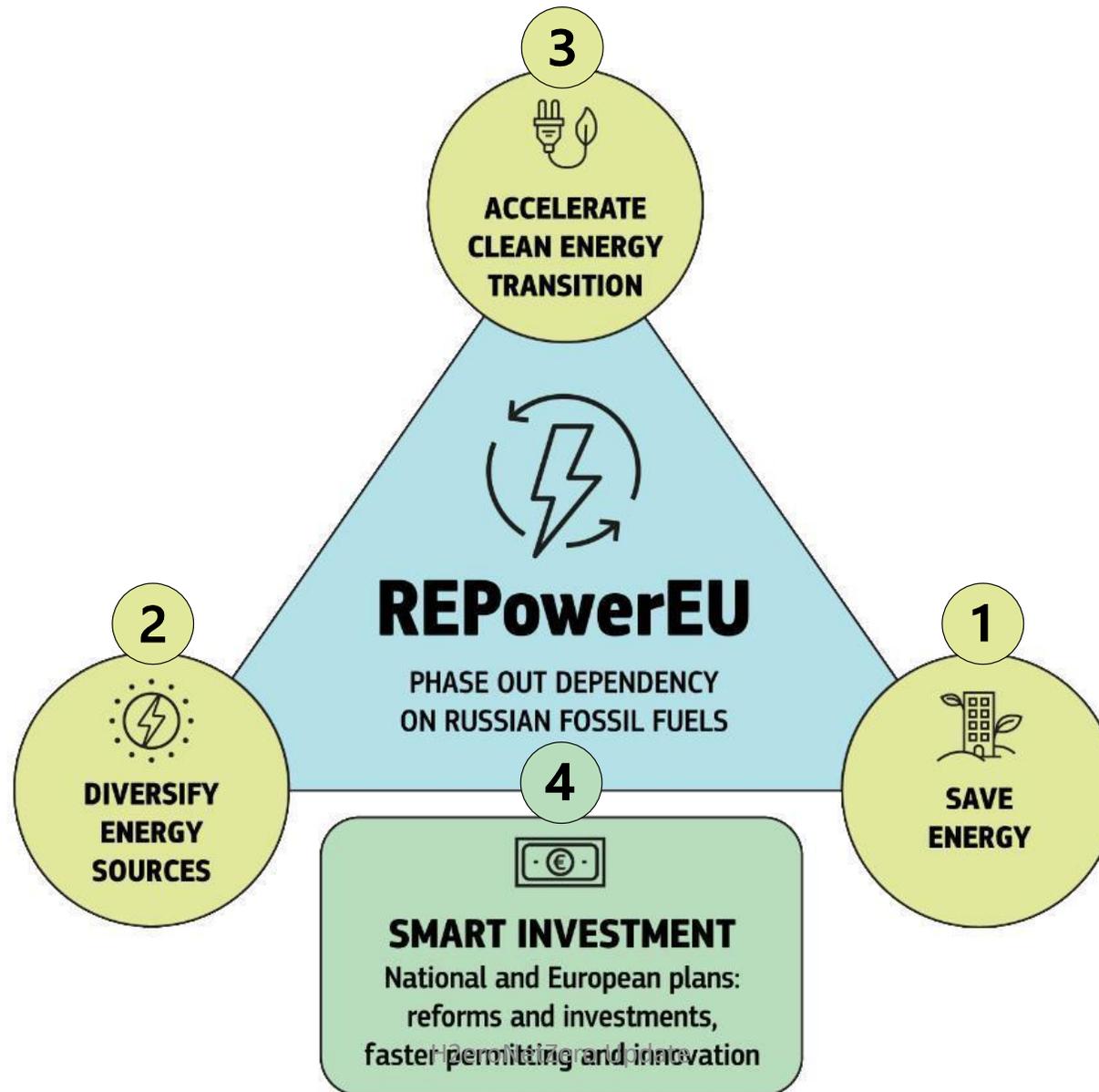
- Regional Pillar launched in **January 2022**
- **26 official members**; and 1 region in process of joining
- Regional representative in HE Board of Directors

Objective of the Pillar

- Promoting **regional and local support and investment** in the H2 value-chain
- Facilitating **set-up of public funded projects**
- **Match making sessions** with industry and research
- Promoting interaction between industry, regional and local authorities to **improve knowledge sharing**

Includes Catalunya and neighboring regions: **Navarra, Aragón, Asturias and Basque Country + Occitanie and Nouvelle Aquitaine**

REPowerEU: 4 Main Pillars



Substituting Fossil Fuels and accelerating the clean energy transition (pillar 3)



Boosting renewable energy (EU solar strategy, permitting)

- 45% RES target
- Solar obligations in buildings
- RES a public interest (RED changes)
- **Permitting guidance**
- Double up heat pumps sales in 5 years



Accelerating Hydrogen

- **RED targets (from 5.6 to 9mt by 2030)**
- **Two Delegated Acts**
- **IPCEIs acceleration**
- **Hydrogen demand report as 2025**
- **200m€ in hydrogen valleys (Clean H2 partnership) +200m€ from industry.**



Biomethane and R&I

- Production target of 35bcm by 2030
- Biogas & Biomethane industrial partnership
- **€ 13.1bn for R&I in other partnerships (aviation, steel, rail waterborne...)**



Developing a European Hydrogen grid

- **TEN-E: by March 2023, a preliminary H2 infra needs**
- **PCI and PMI list by end of 2023 with access to CEF by 2024**

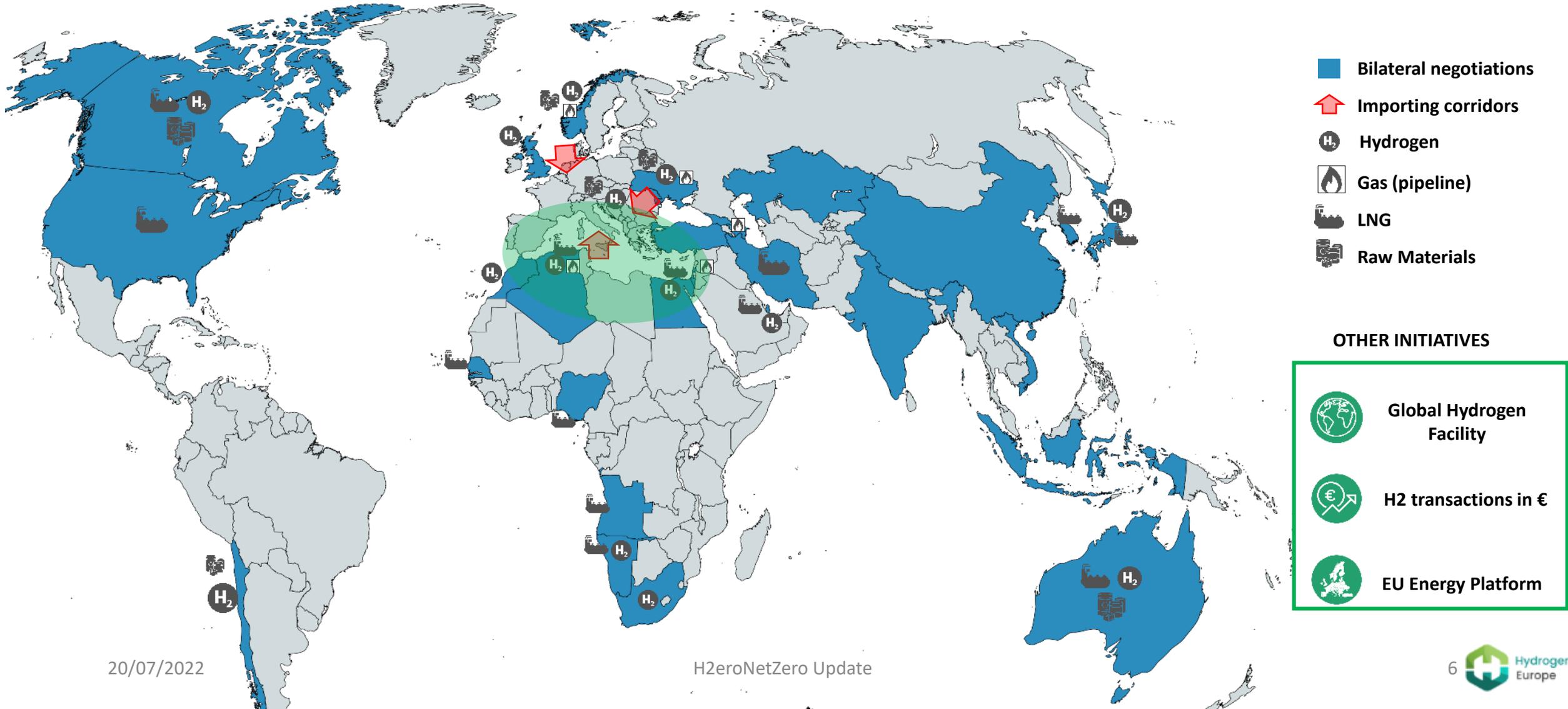


Reducing fossil consumption in hard to abate sectors

- **CCFDs**
- **Innovation fund calls up to € 3bn:**
 - **Clean tech manufacturing**
 - **H2 in industry**

Diversifying energy imports (pillar 2)

The EU's external energy engagement on H2 after REPowerEU



Renewable H2 supply: The Electrolysers Partnership

Joint Declaration of 5 May –
Signed by **20 CEOs** of Electrolyser companies and by Commissioner Breton

Needs :

	2022	2025	2030
Tons of renewable H2	(na)	(na)	10 M
Installed ELYs capacity	1,75 GW	17,5 GW	90-100 GW
Electricity input <i>(based on average ELYs utilization factor of 43% and ELYs efficiency of 70%)</i>	2,5 GW	25 GW	140 GW

OBJECTIVES:



Discuss challenges in establishing/maturing a strong industrial manufacturing base in Europe and possible mitigating policies/actions.

Provide an annual update on the status of the industry.



MEMBERS SOUGHT:

- Electrolyser manufacturers;
- Equipment and components manufacturers;
- Material suppliers;
- Stack assembly manufacturing suppliers;
- R&D entities;
- [...]



A TWO-LEVEL GOVERNANCE:

Strategic level

CEOs of the Alliance and relevant Commission's representatives.

Meeting 1x year

Operational level

Expert Sherpas on technology/policy issues.

Meeting 4x year (or more if needed)

POSSIBLE TOPICS:

1. High value material dependency and strategic access to components.
2. Use of chemicals/REACH such as the PFAS in membranes and stacks.
3. Project financing – Derisking and facilitate access to capital (CAPEX and OPEX).
4. Development of factories, scaling-up and automation, supply of productive machinery, etc.
5. [...]



Renewable H2 supply: DA on RFNBOs additionality

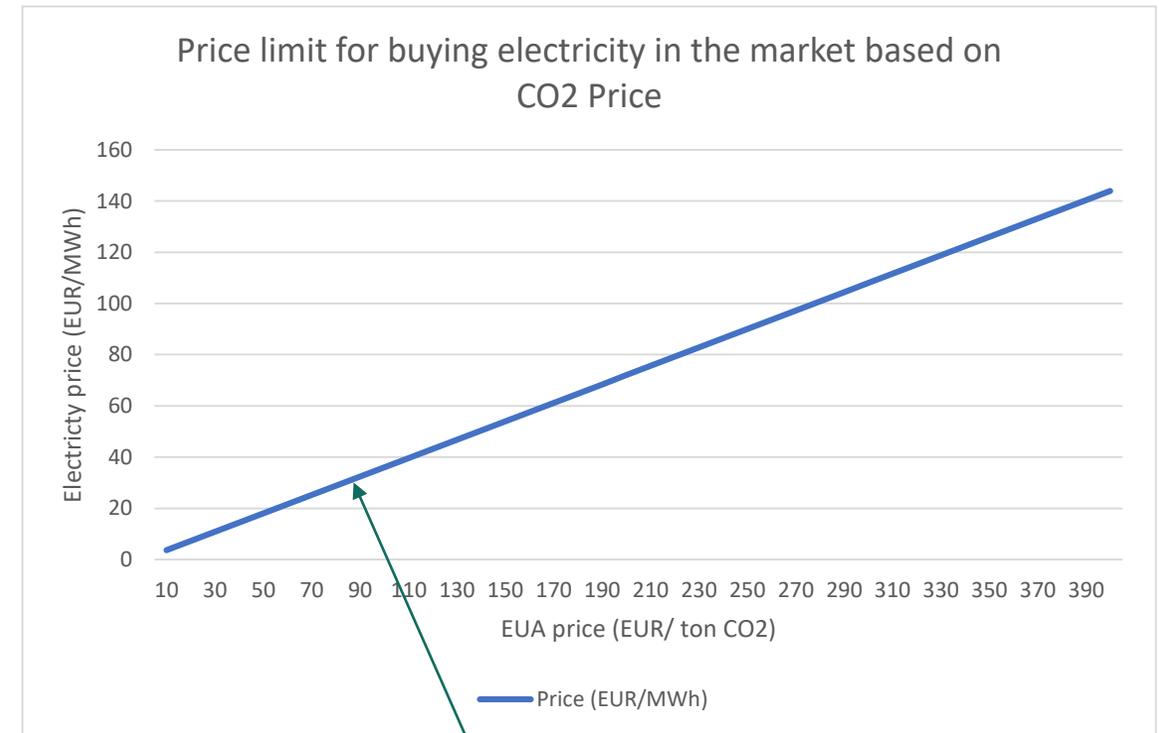
DA on art 23.7 (additionality)

We see important and positive changes

- Grandfathering granted to installations commissioned before 1 January 2027 (both the 36 Month rule and the state-aid).
- Monthly correlation until 2027. It will need to be hourly if the RES plant is receiving state-aid support that is not CAPEX- based.
- A 36-month period for directly connected ELY plants.
- Temporal correlation can be also proved when electricity prices are low (e.g., $\leq \text{€}20/\text{MWh}$) or 0.36 of the Price of a EUA

Things that can still improve

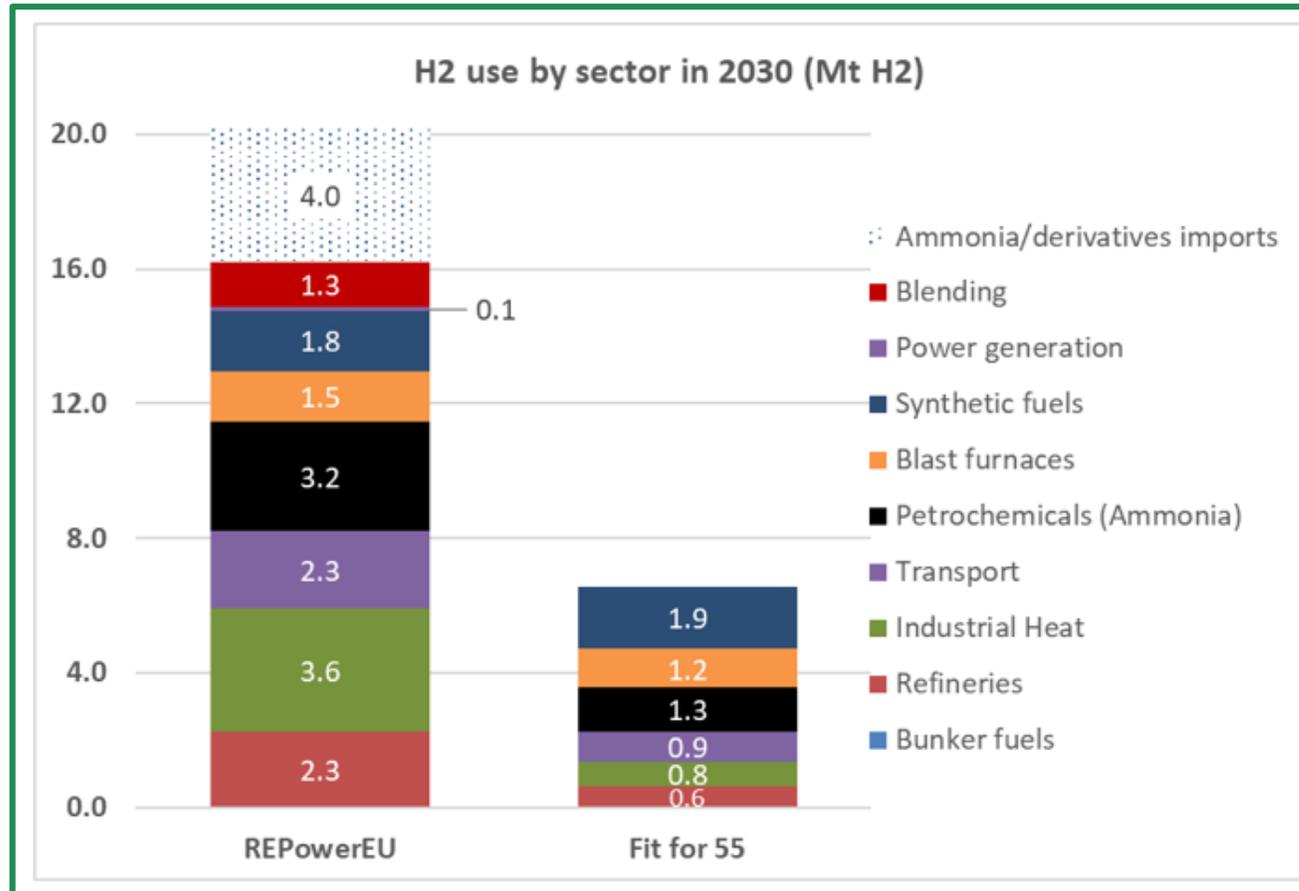
- Hourly temporal correlation
- The monthly temporal correlation in the transitional phase doesn't really help
- The 90% threshold seems quite stringent and would only favor hydro-dominated countries. A 70% could reward and encourage other counties to accelerated investments in renewable power.
- + definition of RFNBO production plants (e.g., energy needs for auxiliary services)



Example: at CO2 price $> \text{€}90/\text{ton}$ you can use grid electricity at $< \text{€}32.2/\text{MWh}$

Increase of H2 demand: Industry & Mobility

EC calls upon Council and EP to align the sub-targets for renewable fuels of RFNBOs in RED II



Source: Modelling using PRIMES

75 % for industry (an increase from 50%)

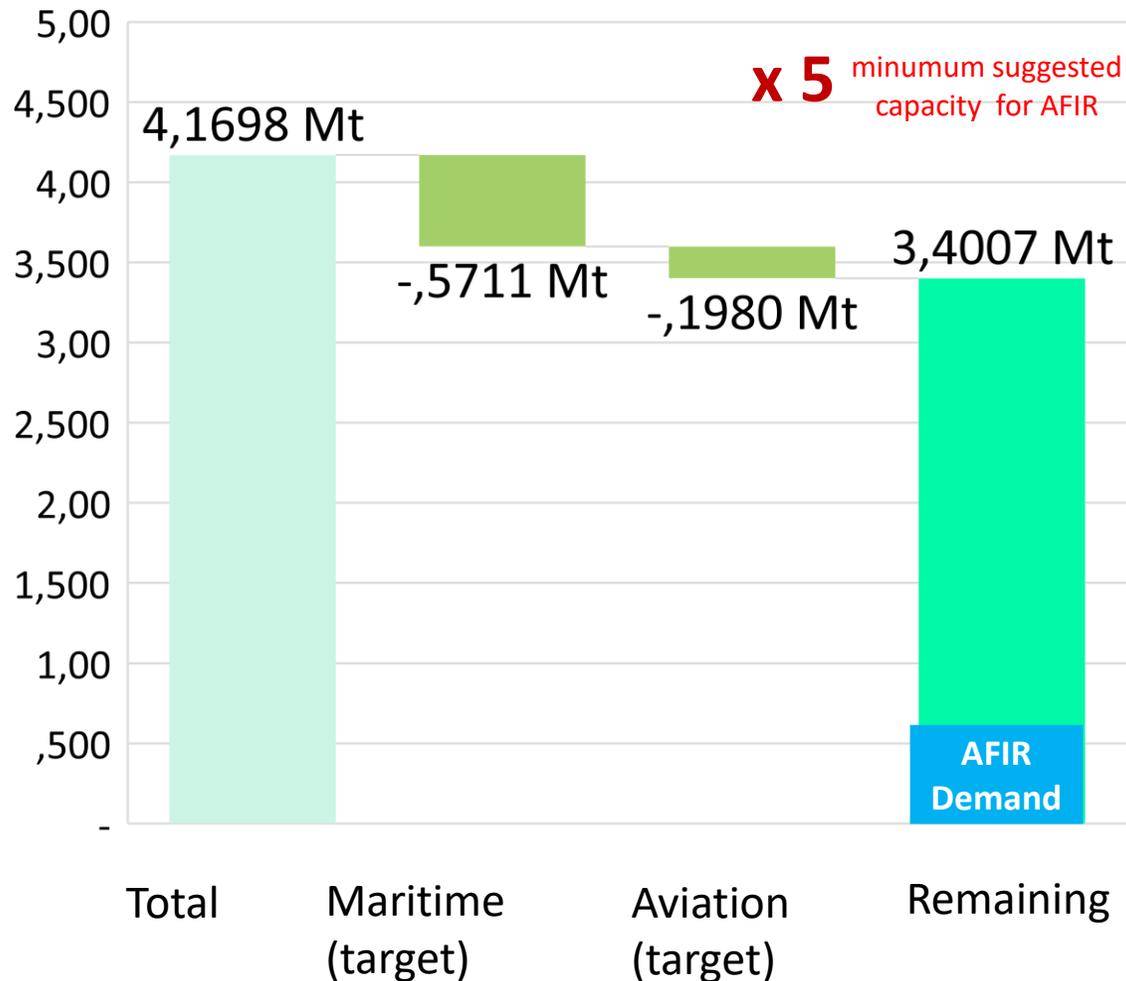
- Estimated demand by 2030: 8.4 mt (excluding refineries)
- 3.6 mt for industrial heat (x4)
- 3.2 mt in chemicals (x2.5)
- 1.5 mt in steelmaking (switch 30% steel production to hydrogen-based DRI-EAF)

5% for transport (an increase from 2.6%)

- Estimated demand by 2030: 6.4 mt (including in refineries) (x3)
- Increase the share of zero-emission vehicles
- Adopt proposals on Alternative fuels
- Adopt a legislative package on greening freight transport by 2023

Suggested RED transport subtarget in RePowerEU

5% RFNBOs in transport



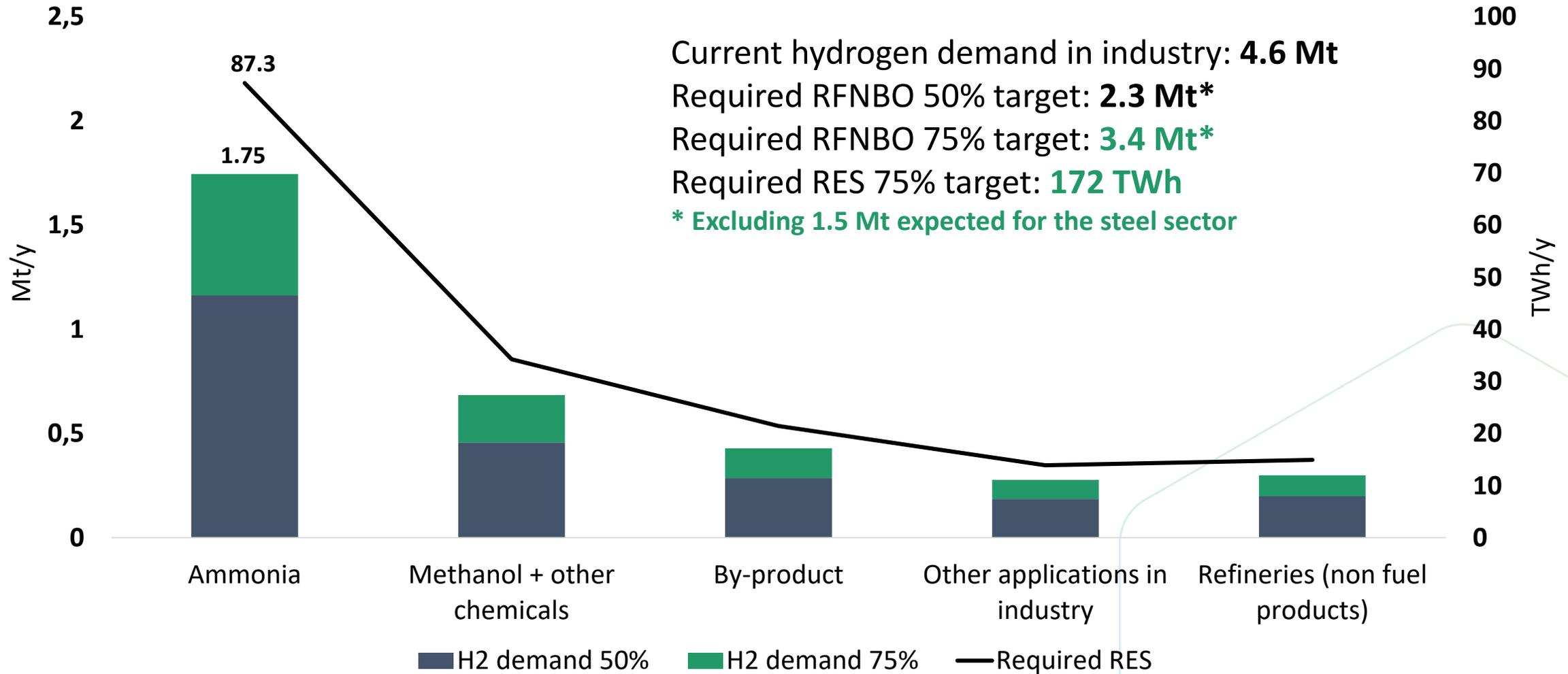
- RFNBO: 2.6% ~ 72TWh (2.2 Mton H2)
- RFNBO: 5% ~139TWh (4.2 Mton H2)

Current sub-sector targets on RFNBOs within FuelEU Maritime And RefuelEU Aviation do not match the increased ambition and strategy regarding RFNBOs in road transport

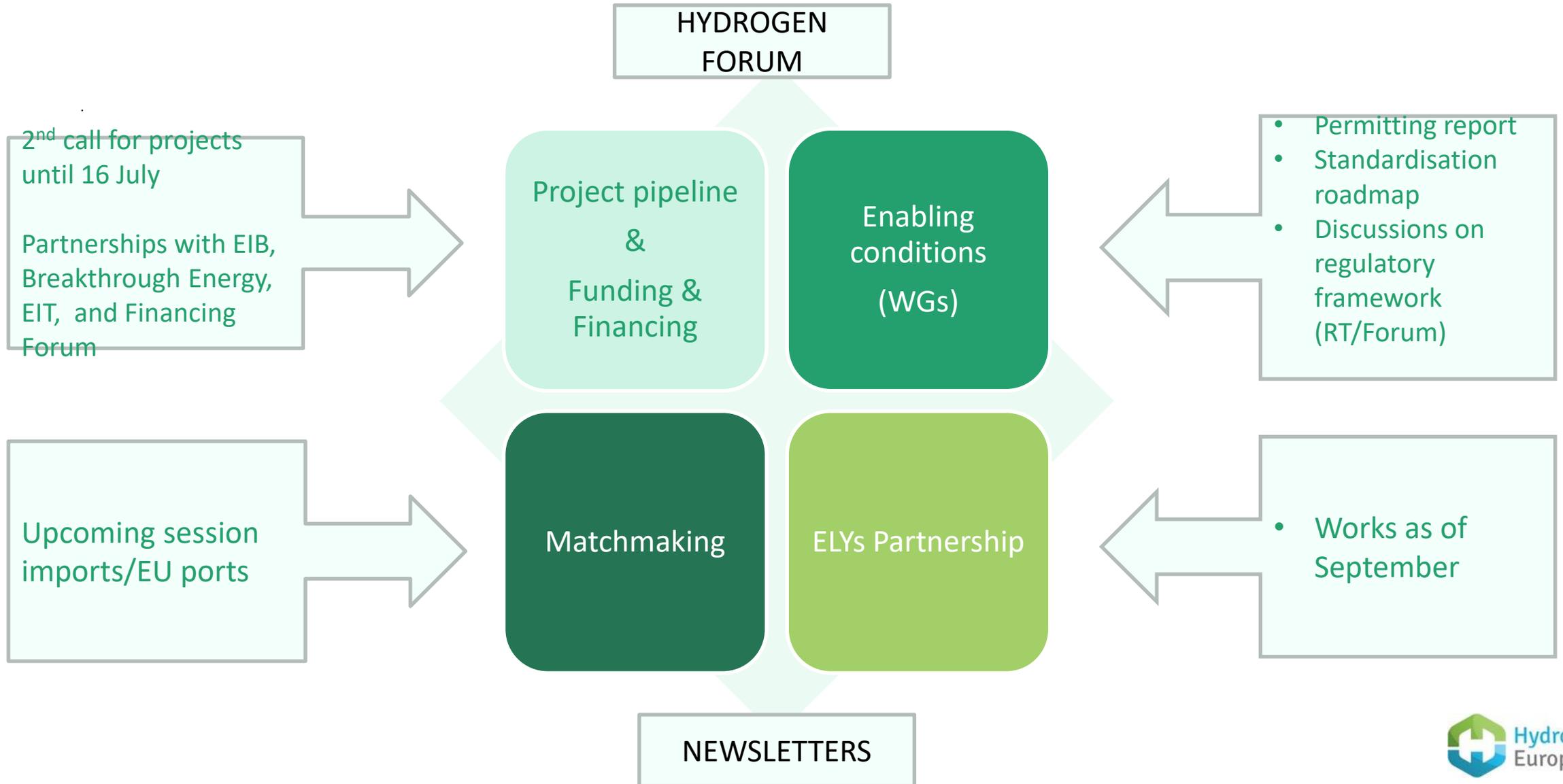
- FuelEU Maritime- proposed 6% e-fuels target
- RefuelEU aviation- 0.7% e-fuels by 2030

the EC's proposal for refueling infrastructure would lead to a H2 demand of about 0.6MT /year.

RFNBO demand in industry by sector



Role of Alliances: THE EUROPEAN CLEAN HYDROGEN ALLIANCE IN 2022





General Objectives

- TACKLING THE LACK OF **AVAILABILITY** AND **AFFORDABILITY** OF RENEWABLE AND LOW-CARBON **DROP-IN FUELS** FOR **AVIATION** AND **WATERBORNE** TRANSPORT
- RAPIDLY **BOOST** PRODUCTION, STORAGE AND DISTRIBUTION CAPACITY OF THESE FUELS **WITHOUT COMPROMISING ACCESS OF OTHER TRANSPORT SECTORS**



5 Specific Objectives

- ✓ IDENTIFY **LCF PRODUCTION PATHWAYS** (*Objective 1*)
- ✓ ASSESSMENT OF **ENABLING CONDITION** (*Objective 2*)
- ✓ **MAP AVAILABLE FUNDING OPPORTUNITIES** and GATHERING ARGUMENTS FOR ADDITIONAL SUPPORT MECHANISMS (*Objective 3*)
- ✓ LAUNCH A **BUSINESS INVESTMENT PLATFORM** (*Objective 4*)
- ✓ BUILDING **SYNERGIES** WITH ACCROSS ALL TRANSPORT MODES AND OTHER ALLIANCES (*OBJECTIVE 5*)

GOVERNANCE

- **STEERING GROUP**
DG Move, Chairs aviation and Waterborne Chambers, and Secretariat
- **GENERAL ASSEMBLY**
Two chambers: AVIATION/**SAFRAN** + WATERBORNE/**FINCANTIERI**
- **4 THEMATIC ROUNDTABLES:**
 - **Feedstock/Synergies**
 - **Aviation**
 - **Waterborne Transport**
 - **Access to Funding and Financing**
- **SECRETARIAT: Hydrogen Europe / Fuels Europe**



OPENESS

Alliance is open to:

- **any company** (regardless of ownership or location)
- EU Member States
- All stakeholder groups registered in the transparency register

Smart Investment (pillar 4 Repower EU)

RRF

- **Revised RRF** proposal amounts close to **€ 300B**
- **Amendments** to include a REPowerEU window
- **Flexibility** on transfer existing resources to RRFs (up to 12.5% CF; up 12.5% CAP)

Horizon Europe

- **+ € 200M** investments on the **CHP for H2 Valleys**
- **A joint strategic R&I agenda with MS** on Transport & Energy
- Boosting **Horizon Europe Partnerships** (€ **13,1B** co-investment)

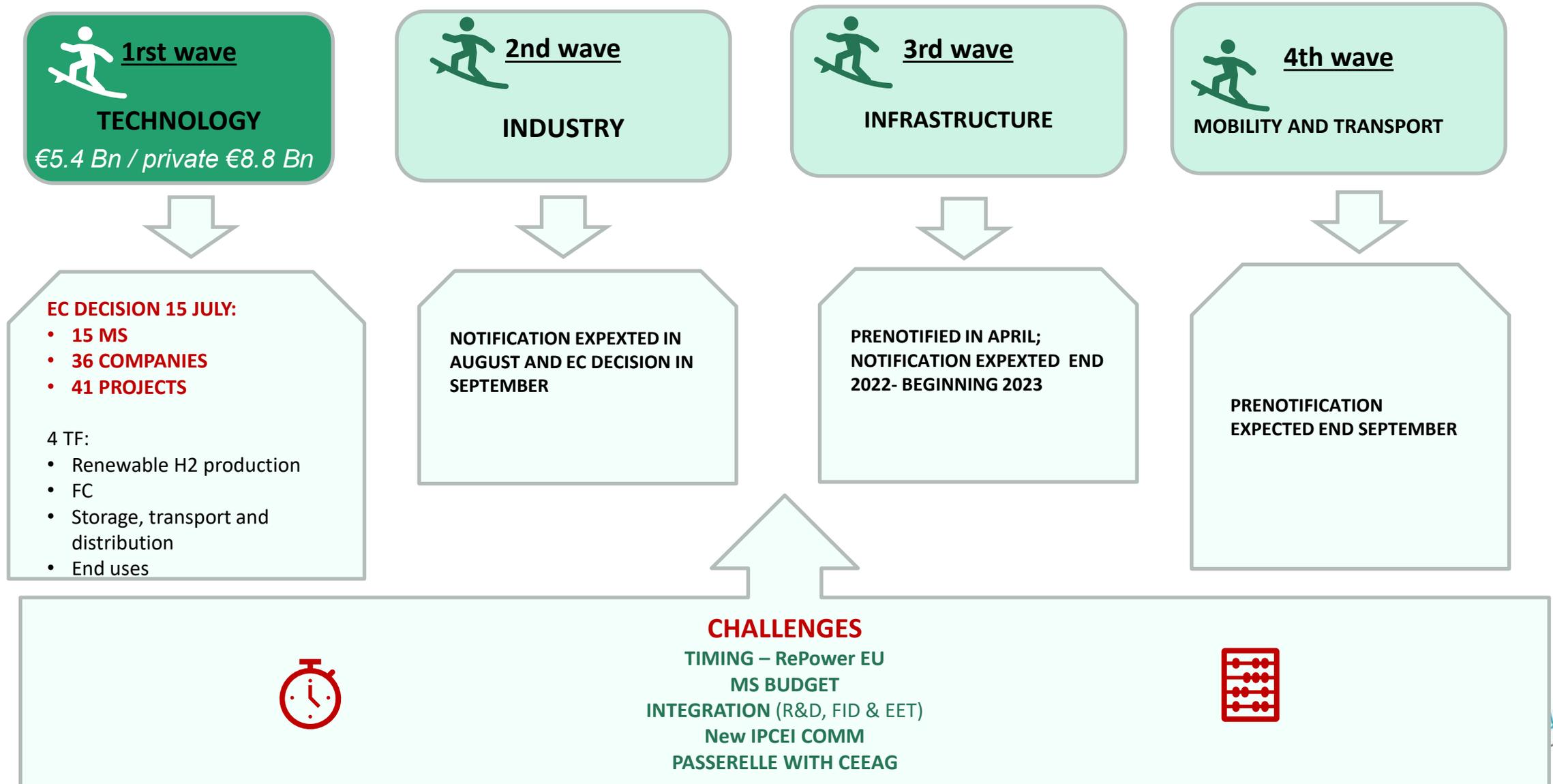
ETS IF

- **€ 3B** for the next **Large-Scale Call**: Autumn 2022
- + Electrification & H2 in industry;
- + Clean tech manufacturing;
- + mid-sized pilot projects
- Deployment of **CCfDs**

CEF-E

- Launch of two calls for PCI for **€ 800M** (studies & works)
- **+ € 2B** for Cross-border H2 infrastructure
- 6th PCI list to be published by the end of 2023

H2 IPCEIs



European Hydrogen Financing Forum

European Hydrogen Investment Summit

- 60 projects presenting – 150+ investors present

22-23 June 2022,
Antwerp

September 2022,
Sofia

European Hydrogen
Foresight Roundtable

TBC

European Hydrogen Transport Dialogue

- Designed to help projects in the H2 mobility sectors to raise funding
- 30 projects – 30+ investors
- **REGISTRATION OPEN for Projects and Experts**

20-21 September 2022,
Nuremberg

European Hydrogen Industry Roundtable

- Designed to matchmaking industry-focused investors and ambitious projects in the area
- **REGISTRATION OPEN for projects and Experts**

22 November 2022,
Duisburg

Talk to us!

Maria Assumpcio Rojo

Director, Industrial Development Policy

ma.rojotorrent@hydrogeneurope.eu

Hydrogen Europe Secretariat

Avenue de la Toison d' Or 56- 60
1060 Brussels
Belgium

secretariat@hydrogeneurope.eu

+32 (0) 2 54 087 75



@H2Europe



Hydrogen Europe



@h2europe

EU Programmes supporting H2 applications

- Main R&I tool with **€ 95.5B budget**
- PPP (ZEWT, CHP...)
- Breakthrough Energy Catalyst (partnership with Bill Gate's Breakthrough Energy Ventures)

- CEF-T: **€ 25.81B budget**
- CEF-E: **€ 5.84B budget**
 - PCI and CB RES status to access to funding

- ERDF: **€ 200.36B**
 - Interregional Innovation Investment
 - Interreg Europe
- CF: **€ 36.612B**, only for State with a GNI per capital below 90% EU-27 average

EU Energy transition Funds (2021-2027)				
Proof of concept	Pilot	Demo	Scale up	Roll out
HORIZON EUROPE <ul style="list-style-type: none"> European Research Council & European Innovation Council Green Deal Call Pillar II: Digital and Industry; Climate Energy and Mobility – including CHE EIT: InnoEnergy, Climate KIC, KIC Raw Materials Breakthrough Energy Ventures Europe 				
			ETS Innovation Fund <ul style="list-style-type: none"> CCS/CCU Energy Intensive Industries Energy Storage Renewables 	
			Connect Europe Facility <ul style="list-style-type: none"> Energy and transport Infrastructure 	
			Invest EU + LIFE programme	
ERDF & Cohesion Funds: a greener, carbon free Europe				
Just Transition Fund				
			IPCEI	

- **€ 19.2B** to support territories most affected by the transition towards climate neutrality

- **€ 38B budget** (based on the current ETS carbon price)
- Large (> 7,5M CAPEX) and small (2,5M and 7,5M CAPEX call)
- Both CAPEX and OPEX

- InvestEU Fund (triggering **€ 372B** in investments)
- InvestEU Advisory Hub (**€ 270M** by EC & EIB)
- InvestEU Portal

- LIFE with **€ 5.4B budget**
- 4 sub-programmes: Climate Change Mitigation & Adaptation; Nature & Biodiversity; Clean Energy Transition; Circular Economy

 Equity
 Loans
 Advisory
 Grants

Under shared management with MS