

The role of H2 Mobility Initiatives in Europe

Luca Feola
Project Officer

22 June 2023



Clean Hydrogen Joint Undertaking

EU Institutional Public-Private Partnership (IPPP)



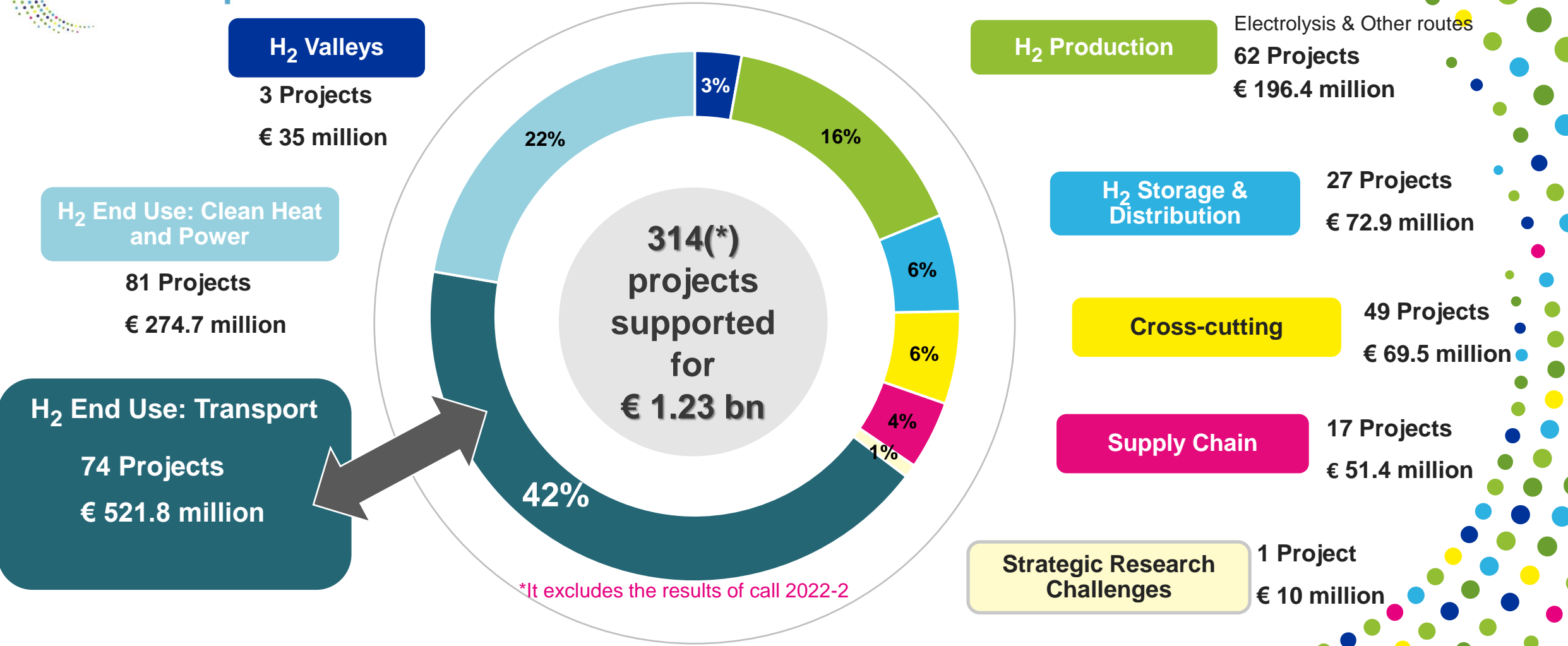
Industry
More than 350 members



Research community
over 103 members

To facilitate the transition to a greener EU society through the development of hydrogen technologies

Clean Hydrogen JU Programme

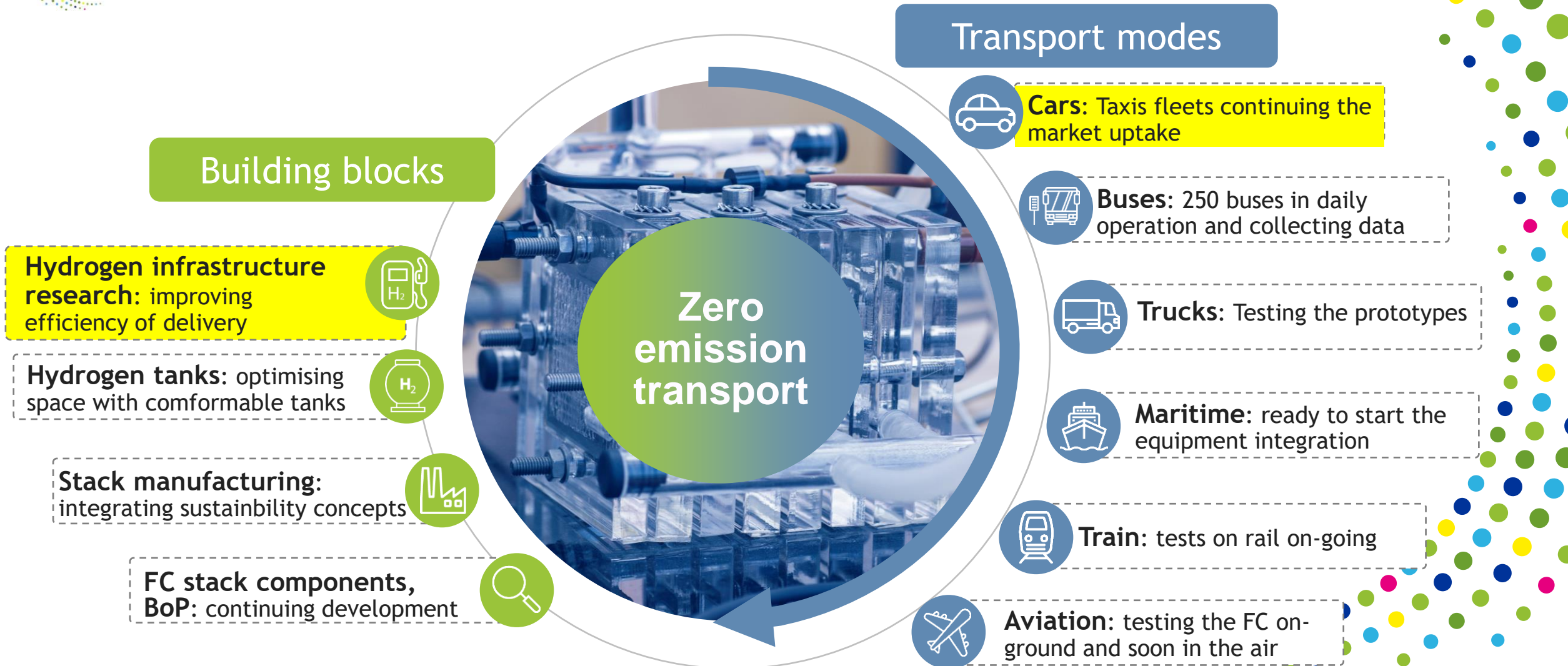


EUROPEAN PARTNERSHIP

Transport projects are the biggest contributors to Clean H₂ Partnership portfolio

Decarbonizing transport as a whole ecosystem

Developing building blocks suitable to the demanding transport modes



The Clean Hydrogen Partnership and CEF Programmes have supported major trials across Europe

Source: Element Energy, an ERM group company

Passenger cars & vans

Early projects






H2ME & H2ME 2: 1400 FCEVs and 49 HRS in 10 countries






ZEFER: 180 FCEVs in 3 European capitals (London, Paris and Copenhagen)

EUROPEAN PARTNERSHIP


Buses

Early projects




3Emotion: 29 buses in 5 cities



JIVE & JIVE 2: nearly 300 buses in 18 cities




Funding synergies with CEF/INEA Infrastructure funding (MEHRLIN)



Co-financed by the European Union
Connecting Europe Facility

Trucks

HECTOR: 7 H2 waste collection trucks in 7 cities (UK, NL, DE, FR, BE)



REVIVE: 15 H2 waste collection trucks in 8 cities (NL, BE, IT)




H2Haul: 16 heavy duty trucks and 6 HRS in 4 locations, 2 OEMs involved





Co-funded by the European Union

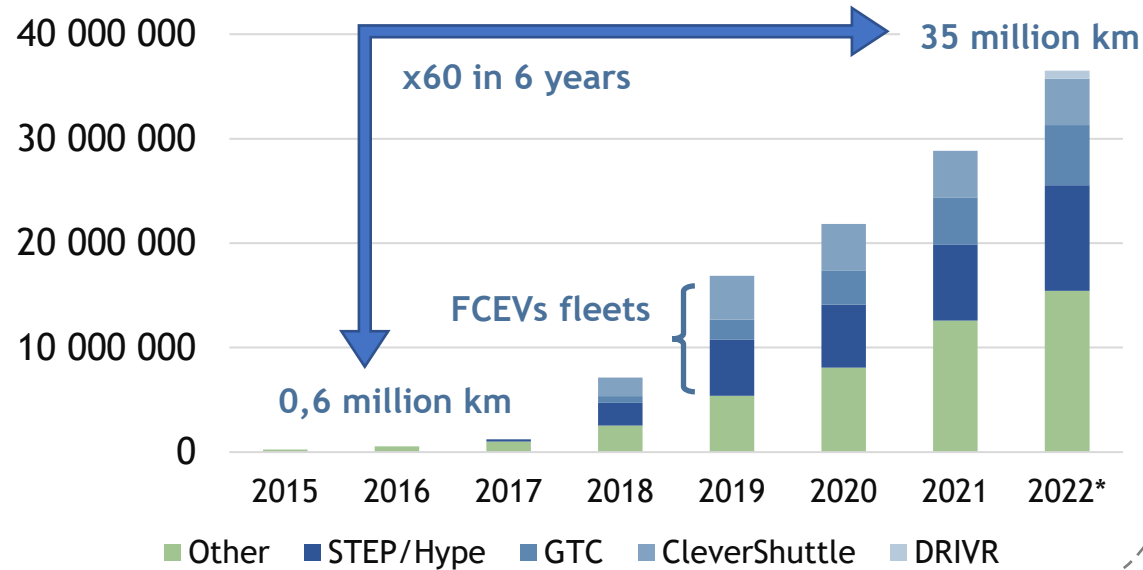
Light duty vehicle demonstration

Fleets are bringing the mileage with > 99% vehicle availability

Achievements (Oct 2022 data)

- 1.791 cars funded / 1.678 cars deployed
- 1,1 million h of operation / 297.7 tH₂ consumed
- 328 tCO₂ avoided in 2021 alone

FCEVs cumulative distance driven



Fleet business models

- Reaching out other ZE cities
- Infrastructure + vehicles
- Mobility as a service for independent professional and private users



Gathering conclusions of projects



- Significant data collection and analysis publicly accessible
- Drivers feedback integrated to improve operational efficiency of vehicles and hydrogen infrastructure



Next funding opportunities: Hydrogen Valleys Topics (2024 - for next year)

Old topics: Deadline was 18/04/2023



HORIZON-JTI-CLEANH2-2023-06-01: Hydrogen Valleys (large-scale)

Develop, deploy and demonstrate a **large-scale H₂ Valley** with **interlinkages outside its boundaries**

- Production of **≥ 5,000 tonnes of renewable H₂ per year** using new hydrogen production capacity (**GOs**)
- **≥ 2 FCH applications** from **≥ 2 sectors** (energy, industry, **transport**)
- **Demonstrate: existing/new H₂ markets**, contribution to economic growth, impact and replicability, commitment of stakeholders
- Financing structure and strategy describing the **business model** and **sources of co-funding/co-financing needed, including complementary funding from other R&I-relevant EU, national or regional programmes.**



HORIZON-JTI-CLEANH2-2023-06-02: Hydrogen Valleys (small-scale)

Develop, deploy and demonstrate a **smaller H₂ Valley** (particular attention to **areas of Europe with no/limited presence of H₂ Valleys**)

- Production of **≥ 500 tonnes of renewable H₂ per year** (**GOs**)
- Supply **more than one end sector or application** (**mobility**, industry energy); **>20% H₂ produced for each of the 2 main applications**
- **Demonstrate: existing/new H₂ markets**, contribution to economic growth, impact and replicability and commitment of stakeholders
- Financing structure and strategy describing the **business model** and **sources of co-funding/co-financing needed, including complementary funding from other R&I-relevant EU, national or regional programmes.**



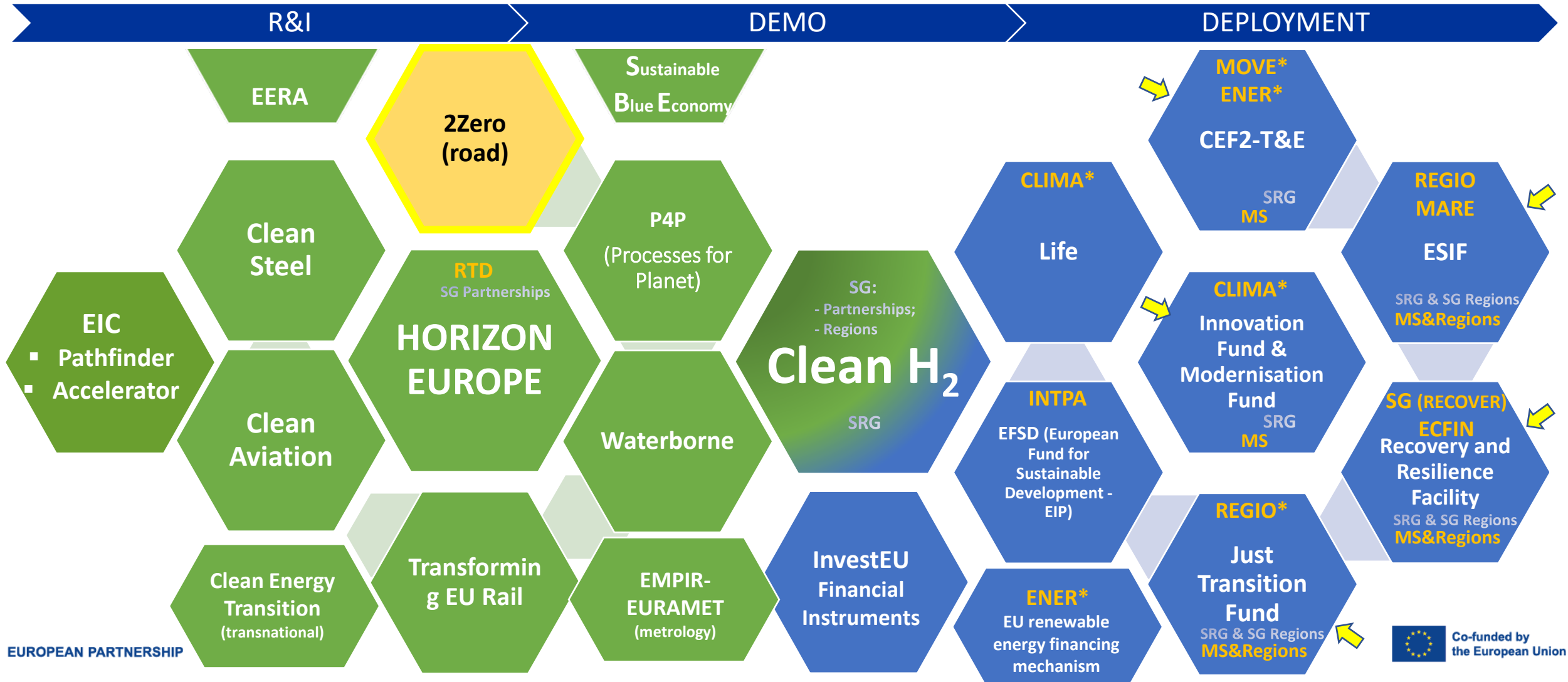
Max. grant
EUR 20
Millions

Max. grant
EUR 8
Millions

Next funding opportunities: Synergies with other programmes



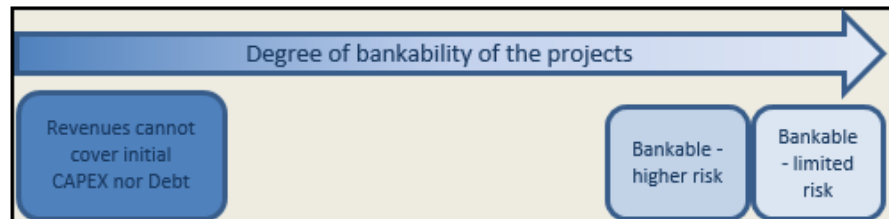
The arrow indicates the most suitable instruments for taxis deployment in a region



Blending EU Funds and Financing

Old and New Instruments joining hands to deliver Fuel Cell technologies - **creating synergies**

Timeframe	Predominant type of Instrument	EU Fund&Financing sources Vs. Tech stage	Pre-commercial development (R&D)	Demonstration/ First-of-a-kind	Uptake/ Market ready/ Roll out of technology
Up to 2020	Funding	Horizon 2020	→		
		ESIF (ERDF, ESF & CF; grant & FI)	→		
		INTERREG (ERDF)	→		
	Financial Instruments (with Risk Sharing component)	CEF (grant & FI)	→		
InnovFin EDP (EC/EIB)		→			
LIFE (including PF4EE and NCFE; EC/EIB; FLP)		→			
EFSI (EC/EIB; combining ESIF or CEF; strong FLP)		→			
EFSI (EC/EIB; small FLP)		→			
Loans	EFSI (EC/EIB; loans or equity)	→			
	EIB (loans)	→			
After 2020	Funding	Horizon Europe	→		
		ESIF (ERDF, ESF & CF; grant & FI)	→		
		CEF 2 (grant & FI)	→		
		Innovation Fund	→		
		Modernisation Fund	→		
		Just Transition Fund	→		
	Recovery and Resilience Facility	→			
Financial Instruments	Invest EU	→			
	Other Facilities	→			



Main Takeaways

From fleets to valleys

- ✓ Starting from 2011, FCH JU, now Clean H2 Partnership, funded several cars and taxis projects, progressively increasing the number of units circulating in Europe.
- ✓ These demo projects have demonstrated technology reliability, improved fuel efficiency and positive business case through out the years.
- ✓ Although no new car demo topics are foreseen, possibilities for funding are possible through other topics: H2 valleys is the most relevant one for Clean H2 JU.
- ✓ Other funding opportunities are always available through other programmes within the EU funds.
- ✓ Blending of funds (i.e. with CEF) for H2 infrastructure is possible and foreseen.

Thank you

Luca.Feola@clean-hydrogen.europa.eu

