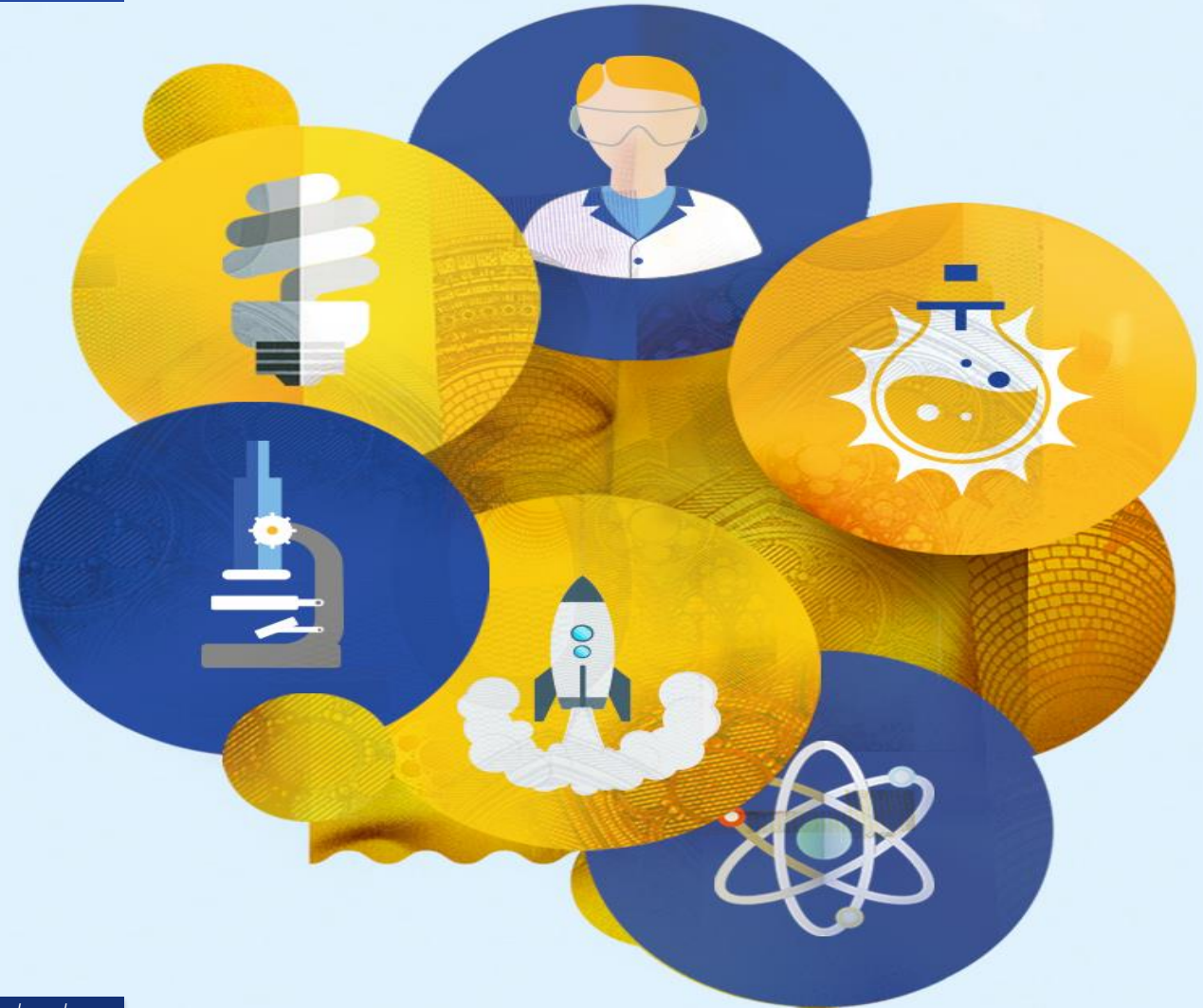


European Partnerships

#HorizonEU

**Clean Hydrogen a Cluster 5
Candidate Partnership**



New approach to European Partnerships in Horizon Europe

New generation of objective-driven and more ambitious partnerships in support of agreed EU policy objectives

Key features

- **Simple architecture and toolbox**
- **Coherent life-cycle approach**
- **Strategic orientation**

Co-programmed

Based on Memoranda of Understanding / contractual arrangements; implemented independently by the partners and by Horizon Europe

Co-funded

Based on a joint programme agreed and implemented by partners; commitment of partners for financial and in-kind contributions

Institutionalised

Based on long-term dimension and need for high integration; partnerships based on Articles 185 / 187 of TFEU and the EIT-Regulation supported by Horizon Europe

Candidate partnerships for Cluster 5

Institutional Partnerships

- Transforming Europe's rail system
- Integrated Air Traffic Management
- Clean Aviation
- Clean Hydrogen

Co-funded Partnerships

- Driving urban transitions to a sustainable future (DUT)
- Clean Energy Transition

Co-programmed Partnerships

- Built4People | People-centric sustainable built environment
- Towards zero-emission road transport (2ZERO)
- Batteries: Towards a competitive European industrial battery value chain for stationary applications and e-mobility
- Zero-emission waterborne transport
- Connected, Cooperative and Automated Mobility (CCAM)

Clean Hydrogen Europe

Clean Hydrogen Europe

- Successor to Fuel Cells and Hydrogen (FCH) Joint Undertaking

OBJECTIVES

- New Partnership will focus on Clean Hydrogen Production, distribution & storage
- Improve through R&I cost-effectiveness, reliability & quality of clean hydrogen applications developed in the EU.
- Demonstrate & scale-up clean hydrogen production to stimulate large-scale generation capacity: Objective to **produce clean hydrogen at a cost of ~€1.5-3/kg by 2030**, allowing penetration into mass markets;
- Accelerate through demonstration the co-deployment of EU storage, transport and distribution infrastructures for innovative clean hydrogen solutions: The objective is to **reduce the distribution costs to less than €1/kg of hydrogen at scale by 2030**.

Objectives declined into applicaton/techno roadmaps

PILLAR H2 PRODUCTION

SO1 Low carbon H2 production

1. Electrolysis
2. Other modes of production

SO2 Integration of renewables

3. Role of electrolysis in the energy system

PILLAR H2 DISTRIBUTION

SO3 Storage & delivery of H2

4. Large scale storage
5. Pipeline transport (grid)
6. Liquid carriers
7. Non-pipeline transport
8. Key technos for distribution

SO4 Refuelling infrastructure

9. HRS for multiple applications

PILLAR H2 END USES

SO5 Transport vehicles

10. Building blocks
11. Trucks & large vans
12. Maritime (inc. ports)
13. Aviation
14. Rail
15. Coaches

SO6 Heat & Power

16. Stationery H2 fuel cells
17. H2 burners and turbines

SO7 Industry

18. H2 in industry

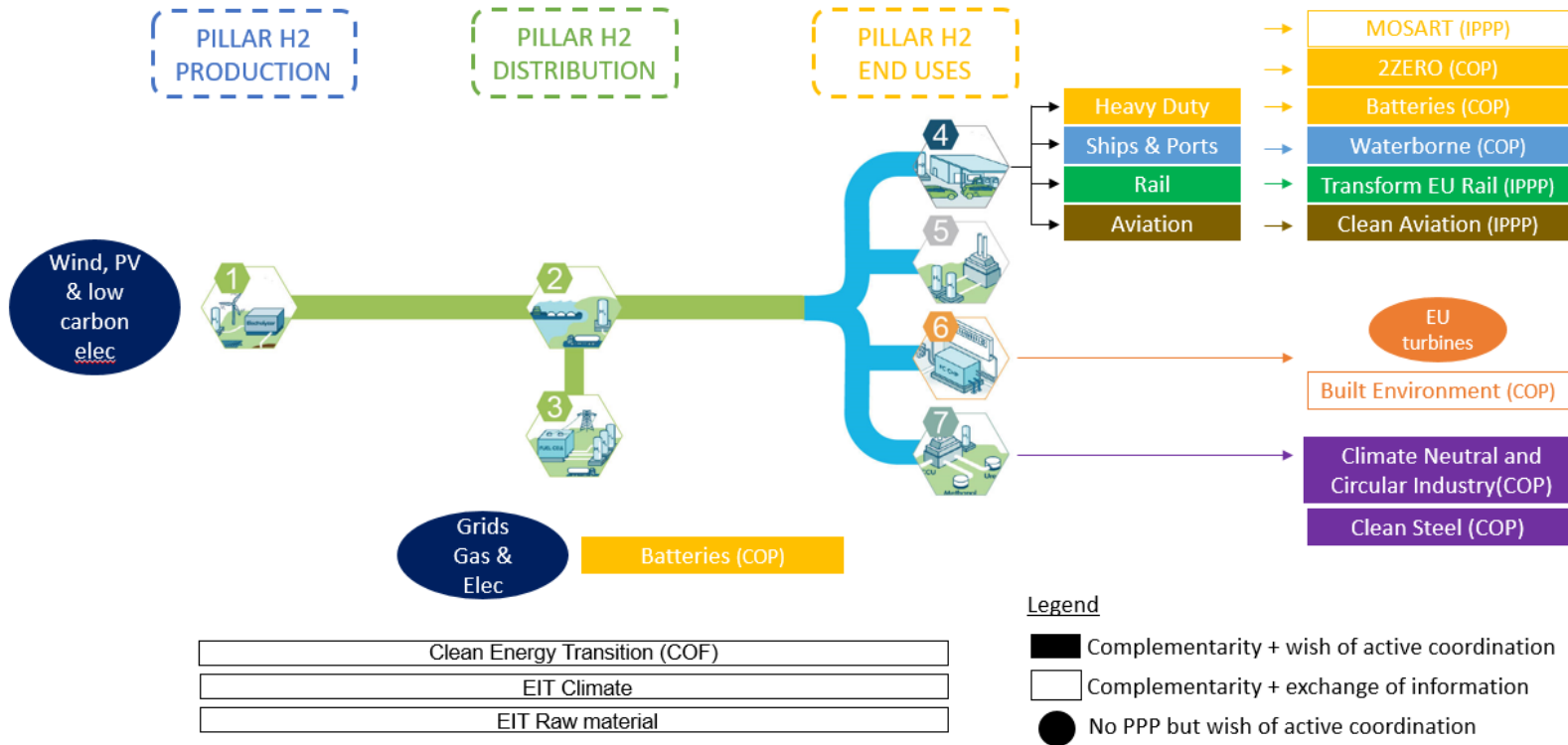
Clean Hydrogen Europe

EXPECTED IMPACTS

- Ambition R&I contribution to European Green Deal goals:
 - Decarbonisation of hard to abate sectors
 - Climate neutrality by 2050
- Measures
 - By 2030 – Demonstration of production, distribution and storage of hydrogen at scale
 - By 2050 – Hydrogen contributing to 16-24% of total energy demand

Clean Hydrogen Europe

LINKS TO OTHER PARTNERSHIPS



CURRENT STATE-OF-PLAY

- Positive opinion from Regulatory Scrutiny Board on Impact Assessment on Clean Hydrogen Partnership – 27 March 2020 (green light to proceed)
- Process of finalisation of SRIA, Single Basic Act by June 2020.
- Negotiation Council/EP Q1/Q2 2021
- Launch Partnership 2021