

Background Paper on the Future Hydrogen Joint Undertaking

Contribution to the European Commission Call for Evidence on European Partnerships to be implemented as Joint Undertakings in the next EU Multiannual Financial Framework 2028-2034

Core message: WIVA P&G supports the continuation and further development of a dedicated, ambitious and adequately funded Hydrogen Joint Undertaking as a strategic instrument for European technology sovereignty, industrial competitiveness, security of supply, climate-neutral transformation and synergies with carbon management.

This background paper accompanies the 4,000-character online feedback submitted by WIVA P&G to the European Commission Call for Evidence on European Partnerships to be implemented as Joint Undertakings in the next EU Multiannual Financial Framework 2028-2034.

1. About WIVA P&G and this contribution

WIVA P&G is Austria's flagship hydrogen and green-gas initiative ("Vorzeigeregion Energie"), bringing together industry, research organisations, SMEs, start-ups, public authorities and regional implementation initiatives along the entire hydrogen value chain. From this Austrian perspective, WIVA P&G submits this contribution to the Commission's Call for Evidence supporting the impact assessment for the future Single Basic Act governing European Partnerships implemented as Joint Undertakings under Horizon Europe (2028–2034) and the European Competitiveness Fund. In line with the Commission's portfolio approach — a limited, coherent set of high-value partnerships — we set out below the evidence for continuing, strengthening and broadening the hydrogen Joint Undertaking, and how it should be designed to deliver European added value.

2. General position

WIVA P&G strongly supports the continuation and further development of a dedicated, ambitious and adequately funded Hydrogen Joint Undertaking, broadened to include carbon management, in the next Multiannual Financial Framework 2028–2034. A strong, clearly mandated, European-level funding instrument for hydrogen technologies remains essential to connect research, innovation, industrial scale-up and market activation. The Fuel Cells and Hydrogen Joint Undertakings and the current Clean Hydrogen Joint Undertaking have built a strong European hydrogen ecosystem, enabling technological development, demonstration, standardisation, safety and cross-border cooperation that fragmented individual instruments could not achieve with the same impact.

3. Strong demand confirms the relevance of the programme

The programme's performance and leverage are well documented. The Clean Hydrogen JU is backed by €1 billion of EU funding for 2021–2027, matched by at least an equivalent private contribution, bringing the total to over €2 billion (Clean Hydrogen JU, budget 2021–2027); it continues a public–private partnership model that dates back to 2008. Demand is consistently high: the annual calls are heavily oversubscribed, with 212 proposals submitted in the 2025 call and 170 in the 2026 call (Clean Hydrogen JU, calls 2025 and 2026). This confirms that European stakeholders have the expertise, project pipeline and implementation capacity to advance hydrogen technologies, but continue to depend on reliable, coordinated and sufficiently funded

European instruments. Reducing or fragmenting these structures would weaken this momentum and risk that mature project ideas and industrial demonstrations cannot be implemented at the required speed and scale.

4. Hydrogen: a clean technology where Europe leads and can win

Hydrogen is one of the few clean technologies in which Europe holds a genuine innovation and industrial lead. According to the joint EPO–IEA study *Hydrogen Patents for a Clean Energy Future* (2023, covering 2011–2020), the EU accounts for 28% of the world's international hydrogen patent families, ahead of Japan (24%) and the United States (20%); the US was the only major region where filings declined. Europe is strong in both patenting and manufacturing — notably in electrolyser technologies (SOEC, PEM and alkaline) — and European companies such as Air Liquide, Linde, BASF, Siemens and Bosch are among the top global applicants (EPO–IEA 2023).

This lead must not be squandered. In other clean technologies Europe developed strong science but lost the industrial race: more than 90% of the solar PV modules deployed in the EU are now imported, and China supplies the large majority of the world's batteries (European Commission, *Clean Industrial Deal*, 2025). Analyses underpinning the Draghi report confirm that the EU nonetheless retains a strong manufacturing base in wind power and electrolyzers, while other value chains have shifted abroad (Draghi 2024; European Commission 2025). A well-funded Hydrogen Joint Undertaking that includes carbon management is therefore a strategic instrument to convert Europe's research excellence into industrial capacity, high-value jobs, resilient supply chains and lasting value creation — not merely a decarbonisation programme.

5. Contribution to strategic objectives: sovereignty, competitiveness, security of supply and resilience

A future Hydrogen Joint Undertaking would contribute directly to key European objectives. Beyond decarbonising applications that are hard to electrify in industry, mobility and energy-system integration, hydrogen is a strategic factor for technology sovereignty, industrial competitiveness and security of supply. Without a strong European coordination structure, there is a significant risk that technologies developed in Europe are industrialised elsewhere and that Europe becomes a market for imported technologies rather than a leader in their development, production and deployment.

Hydrogen also strengthens the resilience of the energy system, which has gained decisive importance since the 2022 energy crisis. As a domestic, storable energy carrier that couples the power, gas, industry and mobility sectors, hydrogen reduces import dependency, buffers volatility and reinforces security of supply — objectives at the centre of REPowerEU and of Europe's wider resilience agenda (European Commission, REPowerEU, 2022).

6. The need for a dedicated Joint Undertaking

A dedicated Joint Undertaking is warranted by the systemic nature of the hydrogen sector. Hydrogen is not a single technology but a cross-sectoral value chain spanning production, storage, transport, infrastructure, industrial use, mobility, and power and heat applications, integrated into regional and European energy systems. Progress in one segment depends directly on progress in others. Fragmented calls or loosely coordinated programmes cannot adequately address these interdependencies. A Joint Undertaking provides governance continuity, strategic portfolio management and the ability to align research, demonstration and scale-up across the ecosystem over investment cycles that often extend beyond a decade — clear European added value that regular calls or national programmes cannot replicate.

7. Support for the Hydrogen Europe Research position

WIVA P&G supports the core messages of the Hydrogen Europe Research position paper: a next-generation Hydrogen Joint Undertaking with a ring-fenced budget, an integrated programme covering research, innovation and industrial scale-up, and stronger coordination with Member States, the SET Plan and the future European Competitiveness Fund. Future activities should be even more closely linked to industrial implementation and European value creation while preserving the essential role of fundamental and applied research. The JU should act as a structured bridge between research-oriented instruments and industrial scale-up mechanisms, preparing investment-ready projects for replication and commercial deployment.

8. Hydrogen Valleys as territorial launchpads

Hydrogen Valleys have a particularly important role. They serve as territorial launchpads for integrated hydrogen ecosystems, bringing together production, infrastructure, end-use, regulation, skills, public acceptance and regional value creation. They translate European strategies into concrete regional implementation and generate knowledge that can be replicated and scaled elsewhere. A future Joint Undertaking should continue to support and connect Hydrogen Valleys across Europe and use them as bridges between research, industry, regions and European policy. This is especially relevant for Austria, where national and regional hydrogen initiatives must interact effectively with European programmes to avoid duplication, bundle investments and build robust project pipelines.

9. Hydrogen and carbon management: exploiting the synergies

The next Joint Undertaking should be broadened to cover carbon management, because hydrogen is the fundamental building block for the wider family of synthetic and climate-neutral molecules. Renewable and low-carbon hydrogen is the essential feedstock for synthetic and carbon-neutral fuels, green methanol and ammonia, and other green molecules, and it enables carbon capture and utilisation (CCU) by combining hydrogen with captured biogenic or unavoidable CO₂. Hydrogen and carbon management are therefore two sides of the same industrial transformation, particularly for hard-to-abate sectors where isolated technology pathways will not suffice.

Experience from Hydrogen Valleys shows that hydrogen alone rarely delivers deep industrial transformation. Integrated solutions combining hydrogen, renewable energy, captured CO₂, storage, infrastructure and sector coupling are typically required. As the relevant industrial companies and research organisations are frequently active in both hydrogen and carbon management, one coherent European instrument can unlock strong synergies, avoid duplication and accelerate climate-effective industrial solutions. Framed this way, broadening the scope supports rather than contradicts the Commission's aim of a limited, coherent portfolio: one integrated Hydrogen Joint Undertaking that also covers carbon management, instead of two separate, overlapping instruments.

10. Strengthening the innovation-to-investment journey

A future Joint Undertaking should be explicitly designed around the full innovation-to-investment journey, so that Europe's research lead is systematically converted into investment-ready, bankable projects rather than being lost between demonstration and commercial deployment. Building on the experience of the Clean Hydrogen JU, WIVA P&G recommends four priorities for the next programming period:

- **Simplification and faster time-to-grant.** Cut administrative burden, shorten time-to-grant, and provide predictable multi-annual calls with proportionate reporting, so that resources flow to innovation rather than paperwork.
- **A structured bridge to scale-up and deployment finance.** Systematically connect JU projects to downstream instruments — the Innovation Fund, the European Hydrogen Bank and the future European Competitiveness Fund — through aligned pipelines, coherent eligibility and clear graduation pathways, so that successful demonstrators are not stranded in the gap between research and market deployment.
- **Better access for SMEs, start-ups and newcomers.** Lower entry barriers with simplified templates, faster payments and targeted or cascade funding, recognising that SMEs and start-ups are decisive sources of hydrogen innovation.
- **Replication and scaling of Hydrogen Valleys.** Provide dedicated support to replicate and scale proven Hydrogen Valley blueprints across regions — through standardised methodologies, knowledge transfer and twinning between mature and emerging Valleys — turning regional pilots into a Europe-wide deployment network.

Together, these measures directly serve the Commission's objectives of simplification, openness and stronger support for higher technology-readiness levels, and embed transparent monitoring of impact and value creation into the governance of the future Single Basic Act.

11. Conclusion and recommendation

WIVA P&G clearly recommends that the Hydrogen Joint Undertaking be continued, further developed by including carbon management, and adequately funded in the next EU Multiannual Financial Framework. It is a central instrument for translating European research excellence into industrial strength, climate-effective applications, resilient supply chains and sustainable value creation in Europe. The Union should use the current momentum to move from building a hydrogen market towards strategic industrial leadership. This requires continuity, coordination and ambitious financing — and a strong, next-generation Hydrogen Joint Undertaking that also covers carbon management is the appropriate structure to deliver it.

Supporting WIVA P&G members

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Sources

EPO & IEA, Hydrogen Patents for a Clean Energy Future (2023; data 2011–2020). Clean Hydrogen Joint Undertaking — budget 2021–2027 and call statistics (calls 2025 and 2026). M. Draghi, The Future of European Competitiveness (2024). European Commission, Clean Industrial Deal and related competitiveness analyses (2025). European Commission, REPowerEU (2022). European Commission, Call for Evidence on European Partnerships to be implemented as Joint Undertakings (2026).