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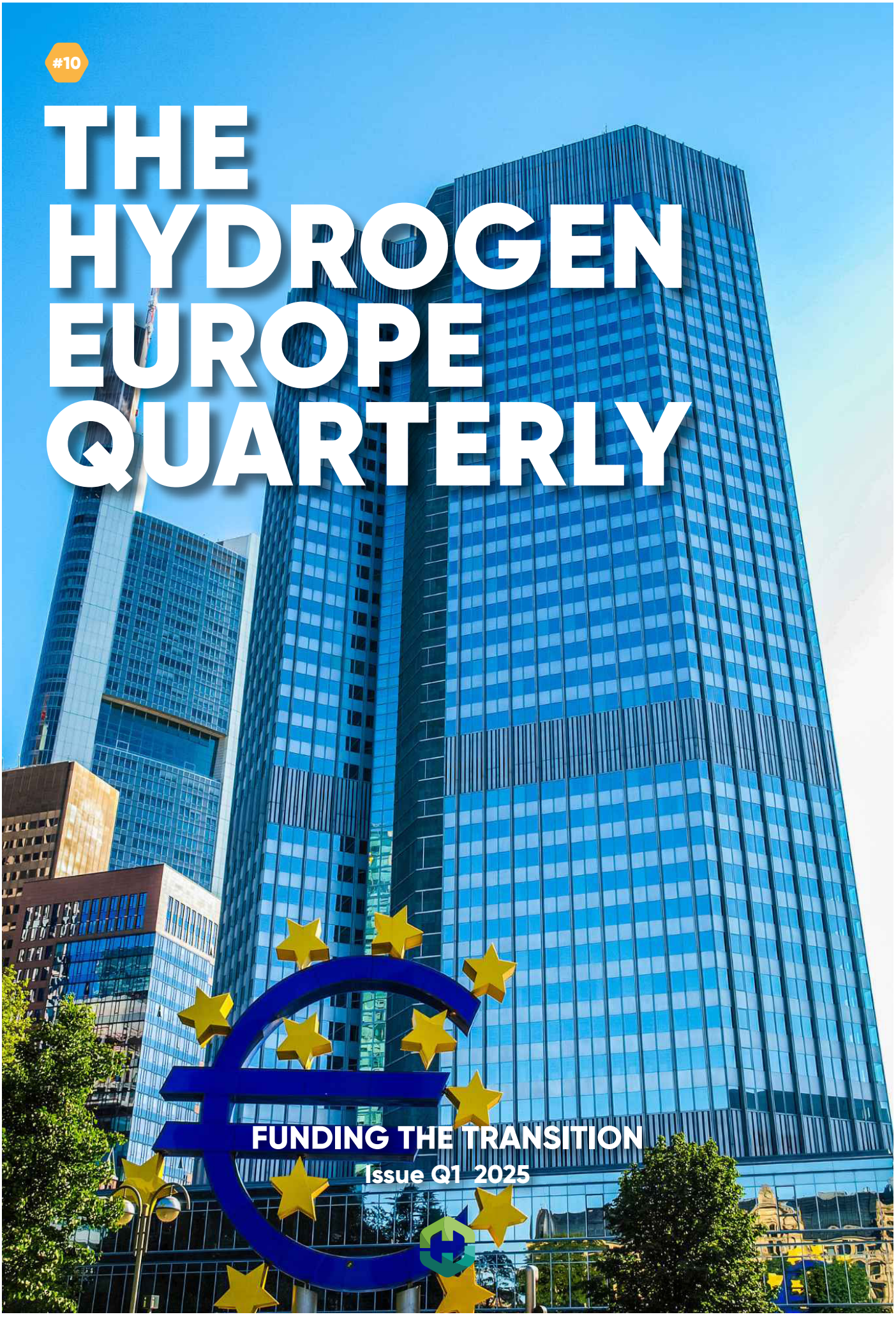
THE HYDROGEN EUROPE QUARTERLY



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Hydrogen Europe

Avenue Marnix 23

BE-1000 Brussels

+ 32 (0) 2 540 87 75

communications@hydrogeneurope.eu

Graphic Design

Think Things (thinkthings.es) and Hydrogen Europe

Advertising

Please contact us at media@hydrogeneurope.eu

Contents

From the CEO

Welcome to the Q1 2025 edition of the Hydrogen Europe Quarterly magazine. Our first issue of the year addresses the all-important topic of financing, and what is needed to bridge the cost gap to make clean hydrogen a long-term success for the energy transition and for European competitiveness.

It is paramount that the European Commission and governments of Member States provide the clarity and support necessary for these first large-scale hydrogen projects to reach final investment decision and advance to construction, bringing with it economies of scale and technological advancement.

This issue's lead story tackles this head on through the insights of French developer Lhyfe's co-founder and CEO, **Mathieu Guesné,** and **European Investment Bank** Vice President **Thomas Östros.**

Our second story analyses the results, so far, of the Important Projects of Common European Interest (IPCEI) – a key funding source but with limitations that must be improved upon. As Hydrogen Europe we started our own thorough analysis with stunning results regarding the difference of funding intensity by the member states. It really matters where in the EU you start your hydrogen investment!

Our corporate member spotlight this issue is on **Danfoss,** through the words of Helge Vandel Jensen, Business Development Director. The company's role in component manufacturing make it an important contributor to the hydrogen value chain. Meanwhile, our national and regional spotlights focus on Germany's newly constituted national association **DWV** and the Czech Republic's **Ustí** region.

As usual, we invite you to delve through our policy & market updates, which this issue covers the recent Clean Industrial Deal publication and the role of fertilisers in the hydrogen ecosystem, among others. Included is an overview of Hydrogen Europe's latest service designed to help members navigate the wealth of data and analysis we have collected over the years – the H2 Corner, which has undergone a substantial change making it much more user friendly.

We hope you enjoy the first issue of the year, and we wish you a successful, hydrogen-filled year!

Jorgo Chatzimarkakis
CEO, Hydrogen Europe

Financing Europe's hydrogen market

Despite regulatory progress and a massive pipeline of projects in development, Europe's renewable and low-carbon hydrogen market is still struggling to see projects reach final investment decision. Halfway between the launch of the European Hydrogen Strategy and the 2030 climate targets, the emphasis must now be on bridging the financing gap and getting these projects over the line. We speak to Mathieu Guesné, CEO of French hydrogen producer Lhyfe, and Thomas Östros, Swedish economist and vice president at the European Investment Bank, about what it will take to unlock financing for European hydrogen.

It has been a rollercoaster five years since the publication of the European Hydrogen Strategy. A large part of the regulatory framework for hydrogen – though not all of it - has been passed and, along with the creation of the European Hydrogen Bank, we have a semblance of a route to market for the vast pipeline of projects waiting in the wings. We have rules, we have projects, we even have targets – so what's missing?

In 2024, the ominous statistic that only 4% of global hydrogen projects had reached final investment decision (FID) – and that most of these were in China - caused much consternation in boardrooms but much joy in many newsrooms, with the latter group simply delighted to be provided another stick with which to beat the industry over the head. Indeed, it is hard enough to build a completely new market without having every setback publicised in great detail. But that is the nature of the game we are playing, so we mustn't lose time complaining about an unfair portrayal. Instead, let us look into the victories that have been achieved in order to take lessons and work towards a more successful near future.

For despite the naysaying, the tired old clichés, and the uninformed or calculated critiques, there is plenty of reason to expect better

days ahead. Chief among them is the fact that many companies have managed to navigate the uncertainty, regulatory stringency, and immature value chain to get their projects moving. In the first two months of 2025, four more projects reached FID with three of them based on water electrolysis representing 35MW and a fourth, Repsol's €800m Tarragona Ecoplanta, which will produce renewable methanol. Several more have been commissioned.

We are therefore well on pace to exceed the number of FIDs in 2025 compared to the previous year. It is almost as if it takes time to build something. Mathieu Guesné, CEO and co-founder of French renewable hydrogen producer Lhyfe, understands this well.

> **We are open for business, and I encourage companies and project developers to contact the EIB to explore financing and advisory opportunities.**

"It doesn't happen overnight, nothing does. One has to understand that now, solar generates more investments than oil, but it took decades. Batteries, too, took around 40 years before getting to gigawatt scale," said Guesné, full of the kind of optimism and self-assurance that success delivers.

Lhyfe's business model has in fact been up and running for some time, and is growing sustainably, with five production sites in France alone and a growing list of customers for clean molecules. It has just signed a 4-year, 140 ton-per-year offtake contract with INOCEL to support the development and production of its fuel cell power generation solutions.

In December 2023, it successfully closed a €28m corporate financing package with a club of commercial banks consisting of Crédit Agricole Group, BPCE Group, HSBC, and Crédit Mutuel Océan, while Bpifrance was also involved.

This sort of financing package, from its participants to its terms, would be the envy of many hydrogen stakeholders. Add to that the fact that these sorts of loans do not yield particularly impressive returns for the lenders, who are typically risk-averse. But clearly, it's possible, so how did they do it?

"What allows Lhyfe to have this corporate debt is that we managed to show that we are profitable and that we can scale up and acquire customers in a safe manner. If you want more money for your project, whether it's equity or debt, you have to demonstrate that you have a proper business you can grow," said Guesné.

"You're not selling PowerPoints, you're selling hydrogen," he added.

The strategy has been working, and is not only yielding private capital interest, but also making Lhyfe a prime candidate for other funding support. In an announcement a year ago, the company announced it would receive up to €149 million for the construction of a green hydrogen production plant with an installed electrolysis capacity of 100 MW near Le Havre. This project was approved by the European Commission as part of the third wave of IPCEI (Important Projects of Common European Interest) on hydrogen. The project site is close to a Yara plant, with the Norwegian fertiliser giant intending to decarbonise with renewable hydrogen. More recently, in January, Lhyfe signed a grant agreement for up to €11 million from Klimatklivet, an investment program supported by the Swedish Environmental Protection Agency, for another 10MW project in Sweden.

"What we have demonstrated is that you can produce and sell hydrogen in a bankable manner," explained Guesné.

The recipe for success

"We see an immediate potential for renewable hydrogen as a replacement for conventional hydrogen produced in industrial sectors such as steel, chemicals and fertilisers," said Thomas Östros, Vice President at the European Investment Bank (EIB), when explaining the interest in hydrogen from the bank's perspective. Having the support of the formidable lender is excellent news for the still nascent sector.

While mobilising commercial debt as managed by Lhyfe should be the ambition of all hydrogen stakeholders, early-stage support from multilateral banks and development finance institutions is absolutely crucial for the success of the industry. Being able to secure financing while still dealing with an elevated risk profile is what will eventually bring that risk down.

The EIB has taken a positive position on the molecule, to the tune of €1.3bn in financing allocated to renewable hydrogen projects over the last decade. Through its REPowerEU+ package of €45bn, the EIB is expected to mobilise €150bn of new investments by 2027 for green energy and technologies, including renewable hydrogen.

The projects backed by the EIB include a 20 MW electrolyser in Spain for the fertiliser industry and a 100 MW electrolyser for refining in Portugal. Both are producing renewable hydrogen as a partial replacement for the conventional hydrogen used in these industrial facilities. Along with the Nordic Investment Bank (NIB), it raised €371 million to co-finance the H2 Green Steel plant in Sweden. In the Netherlands, it is supporting hydrogen refuelling stations in the form of a venture-debt facility to finance research and development and expand production capacity. And in Germany, it is supporting the development of innovative electrolysis technologies, specifically improvements in stack and module design of solid oxide electrolysers.

When asked on what makes a hydrogen project bankable, Östros referred to the two Iberian projects: ***"The key element for the FID of these projects was the competitively secured electricity supply price to ensure financial viability of the investment. The electricity supply is either via a direct connection of the electrolyser with a new, large-scale photovoltaic plant or via grid-connected renewable-energy sources. Despite its complexity, a clear regulatory context – embedded in the***

Lhyfe's onshore wind-powered green hydrogen production site in Vendée, northwestern France.

EU's Sustainable Finance Regulation and Renewable Energy Directive – further supported these investments."

Hydrogen Europe members and other readers of this magazine will understand well the importance of a solid and reliable offtake structure. A long-term offtake deal for all or most of the produced hydrogen is the key that unlocks the FID door. But in the absence of such an arrangement or, ideally, in addition to it, offtake guarantees will help to reduce the financing costs and enable project finance type structures.

Guesné argues that, as seen with solar, wind, and biogas, feed-in-tariffs or contract-for-difference schemes provided comfort to investors to put money into an asset backed by guarantees. If it worked for those clean technologies, why not hydrogen?

"If we look back at solar, wind, and batteries – energy policy is defined by governments, and each country is different," argues Guesné, highlighting the ability that governments have to set the trajectory through policy, as many European countries have done so successfully with other clean technologies. What's important is to focus on your country's specific situation: your potential for production, your demand centres and use-cases, and how you can support it all. It is equally important to take a long-term view of things and understand that the energy transition is a marathon - albeit hopefully a rather fast one - and not a sprint.

"It is important to understand that when we began supporting renewable energy in the 2000s, the first sites took two to five years to build. Once you have the policies in place, you won't see dividends for a few years – but that's the pace of anything," says Guesné.

For the EIB's Östros, abundant renewable energy availability is another essential component to a bankable hydrogen market.

"The technologies to produce renewable hydrogen are mature but not yet competitive, with key issues being cost and scale. Making and using renewable hydrogen at scale will require setting up supply chains and widespread infrastructure, but first and foremost massive investments in additional renewable-electricity production capacities are needed," he explained.

He also mentioned that the lower rate of FIDs is easier to understand when one appreciates the current stringency and complexity of the market. There is simply too high a bar at present for sustained success.

"The necessary development efforts towards FID are for many investors too demanding, leading to a higher percentage of failing investment proposals compared to other sectors. Having said that, we have a strong pipeline of projects and we would expect the number of investment proposals to pick up in the mid-term given EU policy initiatives in combination with the potential for investments in the hard-to-abate industrial sectors," said Östros, providing some optimism for the future.

He also called on hydrogen developers to reach out to the EIB for financing and advisory support, expressing an expectation for sector growth.

"In the next few years, we expect modest market growth in production centres close to the industrial-demand locations, replacing conventional hydrogen or other conventional energy sources in industrial processes for which electrification is not an option to decarbonise. We are open for business, and I encourage companies and project developers to contact the EIB to explore financing and advisory opportunities."

Assessing the implementation of hydrogen IPCEIs: Challenges and Opportunities

The Important Projects of Common European Interest (IPCEI) framework for hydrogen was launched as a flagship initiative to accelerate the development of the European hydrogen economy. Spanning four waves, the initiative aimed to allocate €18.9 billion in public funding, leveraging an additional €24.7 billion in private investment to support strategic hydrogen projects and foster a common European hydrogen ecosystem.

The appeal for companies lies in IPCEI's generous funding structure, allowing up to 100% of the funding gap in project development to be covered. In contrast, other state aid frameworks, such as the Temporary Crisis and Transition Framework (TCTF), offer lower aid intensity – 45% for investment costs in renewable energy projects, including hydrogen, and up to 50% for industrial decarbonisation.

Despite its scale and ambition, the framework has not delivered the expected results and many of the projects, which were once touted as key flagship schemes, have not yet taken off. Despite the size and relevance of such an initiative, there is still no publicly available synthesis on the status of hydrogen IPCEI projects, nor comprehensive data on how public funds have been allocated within the initiative.

To bridge this information gap, Hydrogen Europe has conducted an in-depth analysis, assessing the state of play of hydrogen IPCEI projects, presenting the main findings from the research, and outlining the main motivations for companies to participate in IPCEI and the major challenges slowing the rise of Final Investment Decisions (FIDs).

A total of 122 projects were assessed as part of this research, supported by interviews conducted with a total of 45 project owners from 34 companies. Of the 15 participating Member States, interviews were conducted with government representatives from 3 Member States. The results combine data gathered from these interviews, combined with data from desk research from public sources, for projects where interviews were not possible.

Strong support for the IPCEI framework

More than 70% of the companies interviewed explicitly expressed strong support for the IPCEI framework, primarily because it serves as the only funding instrument bridging the gap between R&D and industrialisation. Additionally, the high level of funding available made it an attractive option for project developers.

More than 55% of participants highlighted the importance of the European aspect of IPCEIs, emphasizing their role in expanding industrial networks and fostering strategic alliances across Member States.

Despite this strong support, concerns remain regarding shifting market conditions, the increasing cost of projects due to energy costs, inflation and high project risk, and the continuous delay on the disbursement of the funds, slowing the rate of Final Investment Decisions (FIDs). Furthermore, this has led to project costs covered by IPCEI grants to decrease.

A slow and uneven path to Final Investment Decisions

Overall, 21% of projects across all four IPCEI waves have reached FID. Of the four IPCEI project waves, 20% of Hy2Tech projects, 9% of Hy2Use projects, 36% of Hy2Infra projects, and 23% of Hy2Move projects have reached FID. For reference, between 8-10% of non-IPCEI clean production projects in the 15 participating Member States have reached FID since 2020[1].

The higher FID rate for Hy2Infra projects reflects Germany's proactive

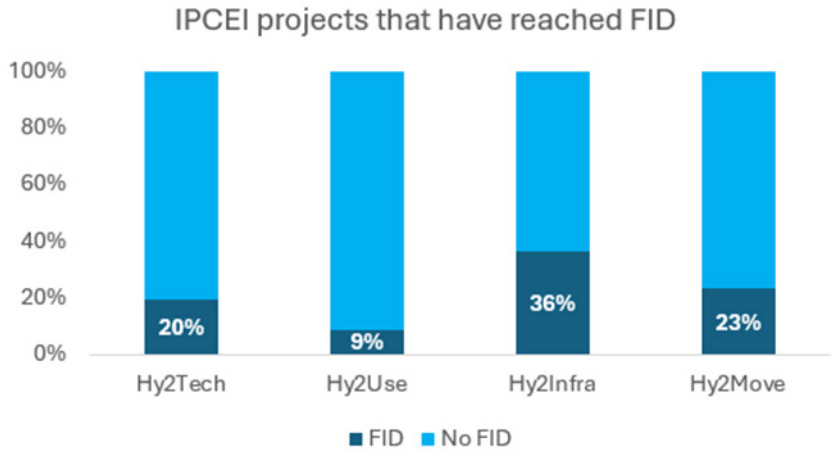

Figure 1 - H2 IPCEI projects having reached FID, split by wave

Source: Hydrogen Europe

1 / Hydrogen Europe, Country Insights, H2Corner 2025. This figure does not include mobility, infrastructure and offtake projects, but only water electrolysis and thermochemical production projects in the participating Member States.

approach in swiftly finalizing grant agreements, with 80% of these projects based in Germany. In contrast, the slower rate of FIDs for Hy2Use projects highlights a key challenge: delays in developing off-taker agreements in the hydrogen ecosystem.

Additionally, one-third of the projects approved for an 'early start' have also reached FID. This measure allowed them to begin implementation at their own risk while awaiting funding disbursement.

Challenges hindering the progress of IPCEI projects

NATIONAL FUNDING DISBURSEMENT GAPS

The initial announcement of €18.9 billion in IPCEI funding created unrealistic expectations, as not all funding was truly allocated at the national level. This shortfall has contributed to significant discrepancies in the timing and scale of disbursements, adding further uncertainty for project developers.

Based on Hydrogen Europe's own research, only €12.8 billion has been officially allocated across the 15 participating Member States. Furthermore, our research shows that only 69% of projects have signed their grant agreements. In this paper, the term "grant agreement" refers to the final approval by the Member State to provide funding to the projects. It does not cover the specific process each Member State follows to issue the grant agreement.

In this analysis, "allocated funding" refers to funds that have been reserved by Member States for hydrogen IPCEI projects, or funding that has been disbursed for a specific project through signing the grant agreement.

Figure 3 illustrates the gap between announced and allocated funding.

Each country independently determines how to allocate its IPCEI funding. In the countries marked in red, the issue has been a lack of budget allocation to IPCEI projects immediately after the European Commission approved the notification process. Interviews suggest that companies in these countries face particularly challenging circumstances (more information in annex). In Finland, however, the main challenge has been the cancellation of its largest project. Larger economies such as France and Germany are not immune to project delays either. In these cases, political hurdles in these countries have prevented full IPCEI budget allocation.

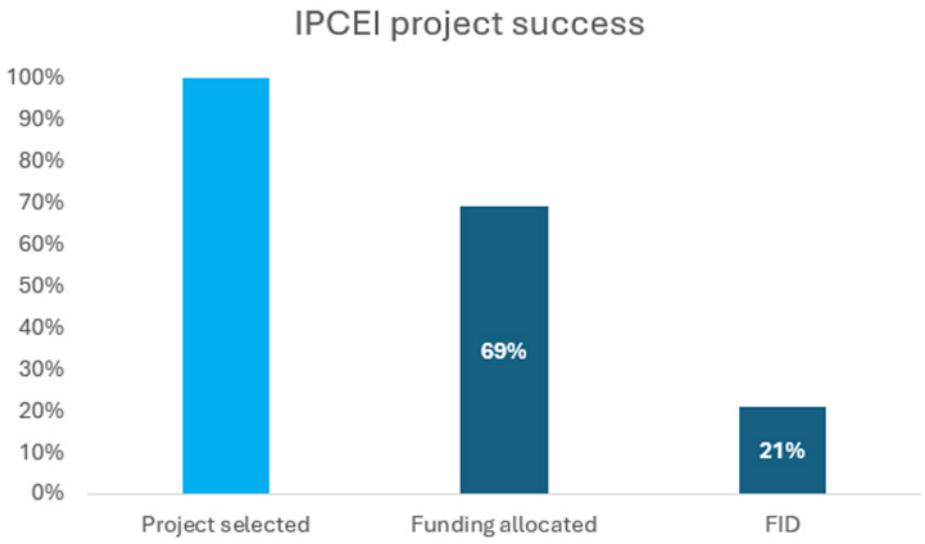

Figure 2 - IPCEI project success to date across the 4 waves

Source: Hydrogen Europe

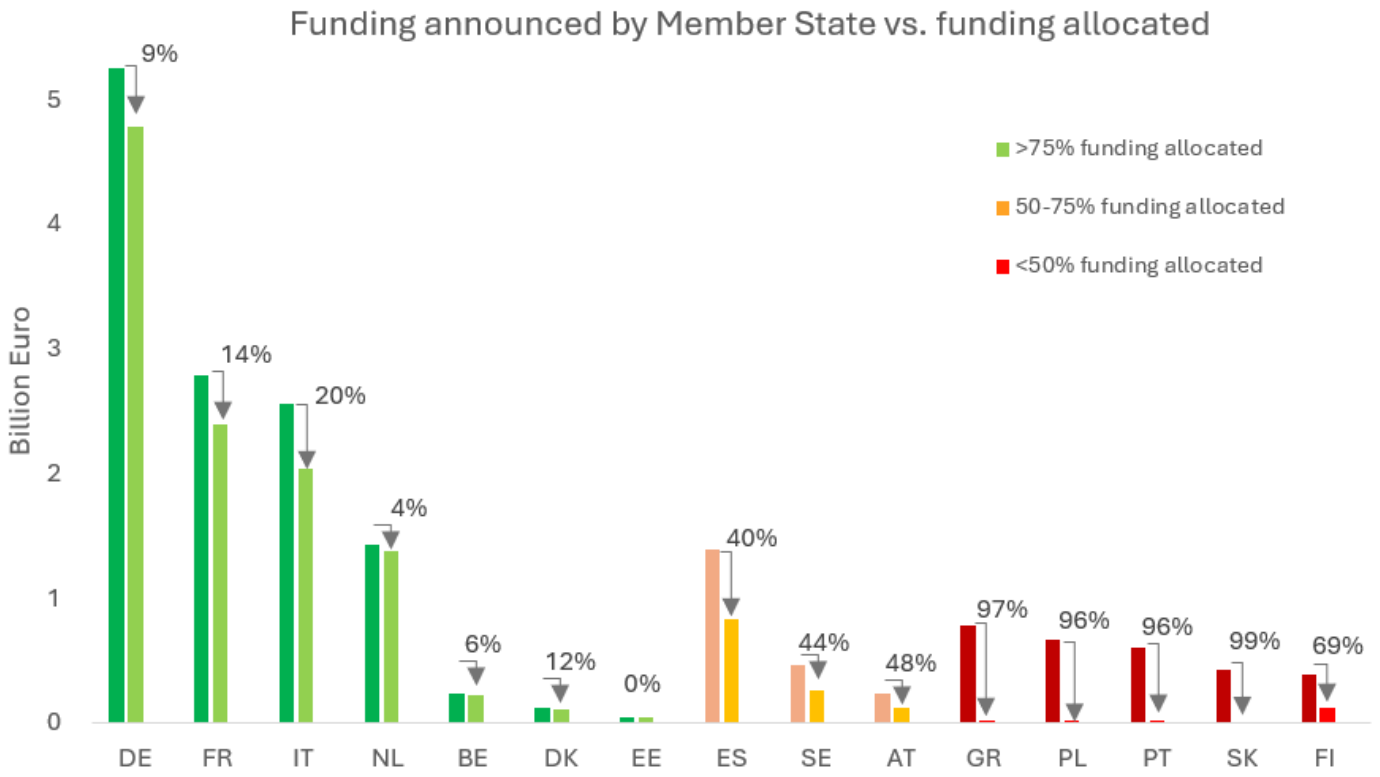

Figure 3 - Difference between funding announced by Member State vs. funding allocated. Including the gap in funding (%). Funding announced is represented by the darker colour and funding allocated by the lighter colour. Not including Hy2Move. The Czech Republic's only hydrogen IPCEI project was cancelled and is excluded from this analysis.

Source: Hydrogen Europe

Adding to these difficulties, most Member States rely on the Recovery and Resilience Facility (RRF) to finance their IPCEI commitments. The RRF comes with a strict spending deadline by 2026. While not all countries depend on RRF financing, those that do face additional time-related constraints, making it even more crucial for the notification and disbursement processes to be streamlined, so that project development can quickly commence.

At the same time, inconsistencies in national funding contributions further complicate project financing. While the IPCEI framework theoretically allows for 100% of the funding gap to be covered, national governments apply their own funding limits. For example, Austria caps funding at 35% and France at 70%. In contrast, Belgium does not administer a nationwide funding cap, although funding is capped at 50% in Flanders.

The lack of consistency and transparency across Member States complicates coordination and does not facilitate efforts to develop a unified European approach to hydrogen innovation. While the EC aims to create a European approach through the IPCEI framework, the decentralised implementation process prevents this from being achieved.

PROLONGED APPROVAL AND NOTIFICATION DELAYS

As previously mentioned, 69% of hydrogen IPCEI projects have received funding, however, waiting times have been significant:

- 53% of funded projects waited between 1 and 1.5 years between the start of the notification period to the signing of their grant agreement.
- 24% of funded projects waited between 1.5 and 2 years.
- 24% of funded projects faced delays of more than two years.

Meanwhile, 31% of all hydrogen IPCEI projects have yet to receive any funding, largely due to Member States failing to finalize grant agreements.

The lengthy notification process at the European Commission (EC) level has been a major source of delays and frustration, with 78% of interviewees expressing dissatisfaction. Indeed, Member States are not allowed to sign grant agreements before the EC notified the projects. While the launch of hydrogen IPCEI projects was originally intended to streamline national calls for interest, overwhelming demand led to their division into four waves. The

Hydrogen IPCEI initial call for interest submission of projects took place in 2020. However, rather than accelerating the approval timeline, delays have worsened between the kick-off of each wave and the final notification:

- Hy2Tech (notified July 2022): 1-year
- Hy2Use (notified September 2022): 1 year, 3 months
- Hy2Infra (notified February 2024): 2 years, 2 months
- Hy2Move (notified May 2024): 2 years, 3 months

A key factor in these delays has been the extensive inquiries by the European Commission, with some companies receiving over 400 repetitive queries from different Directorate-Generals (DGs). Additionally, the EC required companies to provide highly detailed assumptions about the future hydrogen market, despite the nascent state of the industry and unpredictable macro-economic trends (gas price crisis, inflation, supply chain shortages after covid pandemic), leading to multiple rounds of revisions. This lack of coordination has not only resulted in slow decision-making, but it has also added uncertainty for project developers.

Previous European Commission Executive Vice President Margrethe Vestager has acknowledged these inefficiencies, stating: ***"We know that we need to make IPCEIs simpler and faster. This is a quest we know all too well. It is not enough to have awakened a giant; the giant needs to be agile"***[3]

Despite this recognition, the lack of a standardized methodology and the shifting expectations of the EC and Member States continue to complicate the approval process, ultimately hindering rather than facilitating project progress.

MARKET UNCERTAINTIES AND CHANGING CONDITIONS

Beyond the procedural challenges of IPCEI projects, 54% of interviewees highlighted shifting market conditions—including inflation, rising energy prices, and regulatory changes—as key factors further delaying project development. A repeated concern was that the first waves of hydrogen IPCEIs were launched before the Renewable Fuels of Non-Biological Origin (RFNBO) Delegated Act was finalised, exposing companies to shifting policy conditions

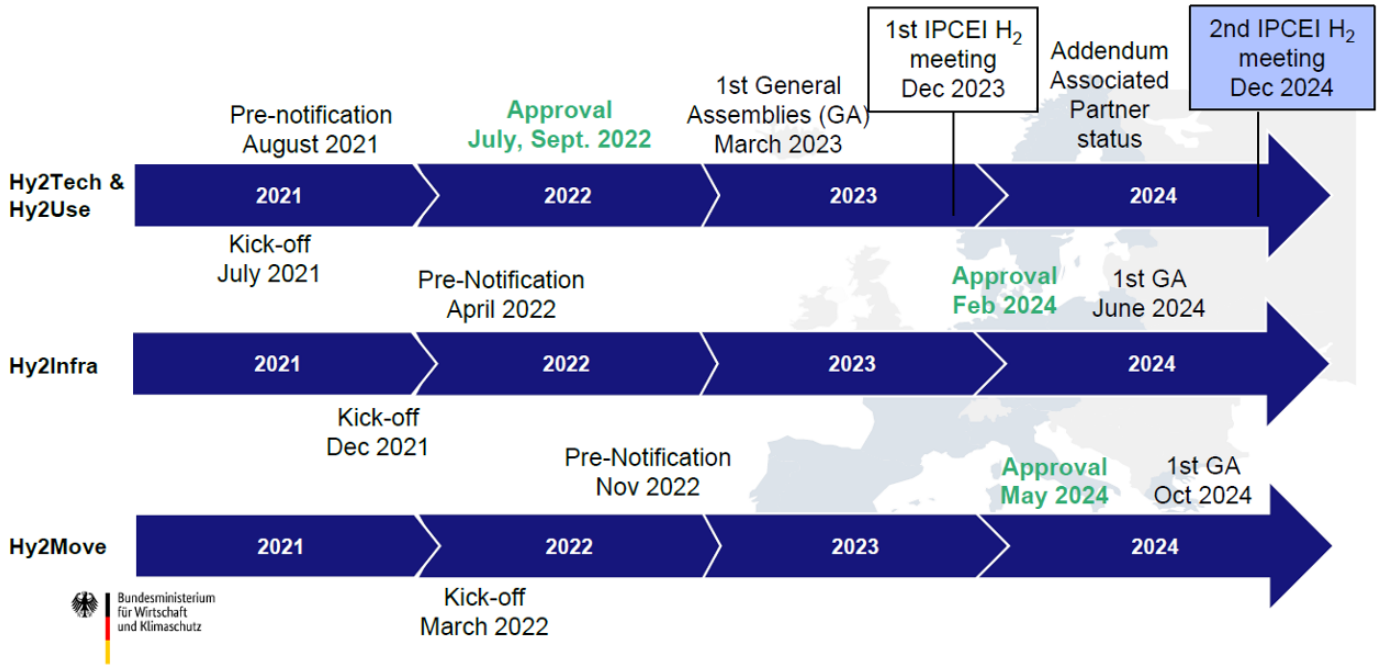

Figure 4 - Approval process of H2 IPCEI divided by wave[2]

2 / Presentation by the BMWK, Germany at Public IPCEI conference in Paris, December 2024
3 / Joint European Forum for IPCEI

while they navigated an already complex bureaucracy. These structural inefficiencies create uncertainties for projects developers, and introduce financial and operational risks, increasing the cost of projects and undermining Europe's ambitions to decarbonise.

Furthermore, rising inflation, increasing energy costs, and high regulatory risk have eroded the real value of allocated funding. As a result, the share of project costs covered by IPCEI grants has decreased, placing greater financial pressure on developers.

While large corporations can often absorb these setbacks, 20% of H2 IPCEI companies are SMEs and face much greater challenges to balance out the financial instability and uncertainty.

The chart below summarises the main problems faced by project owners.

KEY TAKEAWAYS AND RECOMMENDATIONS

While 70% of stakeholders expressed strong support for IPCEI projects, delays in funding disbursement, insufficient national funding commitments, and shifting market conditions have significantly slowed progress toward Final Investment Decisions (FIDs) and the development of a European hydrogen ecosystem. Indeed, the current IPCEI framework, weighed down by excessive bureaucracy and financial risks, has placed undue pressure on project developers, hindering innovation and slowing deployment.

To support the EU's hydrogen ambitions, policymakers must streamline approval processes, enhance transparency, and align funding mechanisms with market realities, or risk undermining the very innovation they seek to foster.

1. ESTABLISH A CENTRALIZED IPCEI GRANT-DISBURSEMENT SYSTEM

To improve efficiency, the EU should create a centralized funding system similar to the Innovation Fund's "Grant-as-a-Service." This approach would:

- Standardizing funding rules across Member States
- Clarify disbursement timelines to reduce uncertainty
- Address delays by requiring national pre-commitments to funding before the European Commission's notification process begins
- Introducing mechanisms to account for inflation and funding disparities

This approach does not change the selection process of projects in each Member State.

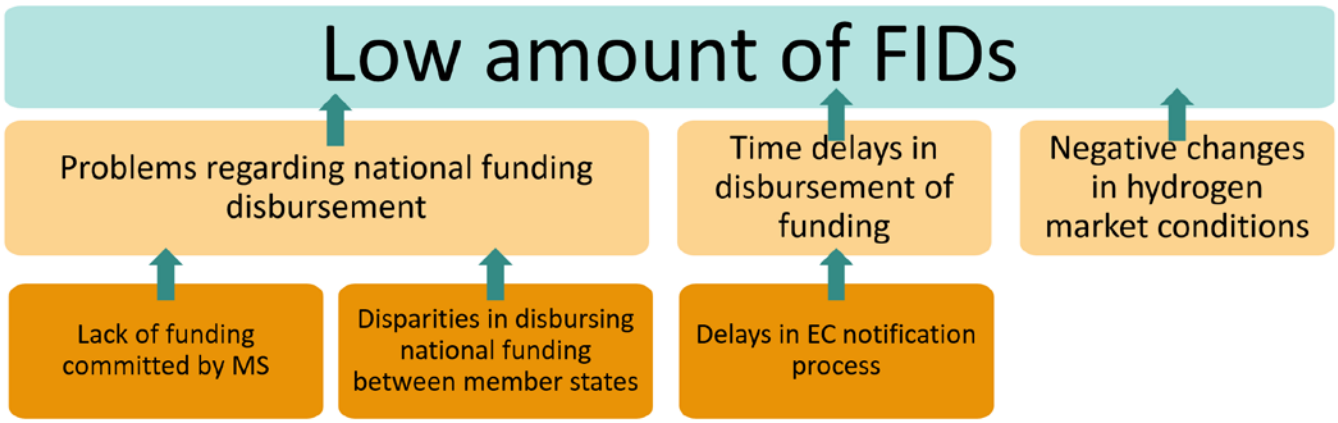

Figure 5 - Overview of key challenges of IPCEI projects – author's analysis

2. STREAMLINE THE NOTIFICATION PROCESS

The European Commission should simplify and accelerate its approval process by:

- Enforcing strict timelines for project approvals
- Setting predefined market assumptions to reduce unnecessary delays
- Allowing companies to present projects in person to clarify concerns early and reduce repetitive queries

3. IMPROVE TRANSPARENCY IN FUNDING ALLOCATION

The EU must increase visibility into the allocation and disbursement of funds by:

- Making data on funding availability publicly accessible
- Providing regular updates on project status to help developers and the supply chain plan and mitigate risks
- Enhancing accountability of Member States to ensure funding commitments are met

4. FOSTER CROSS-BORDER COLLABORATION THROUGH INFORMAL IPCEI MEETINGS

Introducing regular but informal meetings between Member States and industry players would:

- Encourage cooperation without adding unnecessary administrative burdens
- acilitate industry partnerships that support the development of a unified European hydrogen ecosystem

The European Commission has acknowledged many of these issues. As part of the Clean Industrial Deal, it has proposed developing a one-stop shop with the European Investment Bank (EIB) to provide grant applications and financial structuring advice. If implemented effectively, this would be a positive first step toward improving the efficiency and impact of the IPCEI framework.

By Olivia Staudenmayer, Funding Analyst, Hydrogen Europe
& Aisling Deasy-Millar, Intern, Hydrogen Europe

Annex: Comparison of approach to allocated funding by MS

Country	Way of disbursing funding	Origin of Funding
Austria	Funding approved by EC immediately allocated to projects	RRF
Belgium	Funding approved by EC immediately allocated for projects	RRF
Czech Republic	Cancelled	Cancelled
Denmark	No information	No information
Estonia	Funding approved by EC immediately allocated for projects	RRF
Finland	Funding not allocated for projects with EC notification	RRF
France	Funding allocated for project untransparent; no overview	France Relance, PIA 4 investment programme
Germany	30% state level; 70% government level; budgetary problems lead to reduction in funding	RRF + individual state + Climate transformation fund
Greece	?	?
Italy	Negotiations with each project; total funding allocated publicly available	RRF, state budget
Netherlands	National competition between projects for funding, as less funding than notified	Dutch Climate Fund, OWE
Poland	Funding not allocated for projects with EC notification	ERDP
Portugal	Funding not allocated for projects with EC notification	/
Slovakia	Funding not allocated for projects with EC notification; Small amount of funding allocated	RRF
Spain	By royal decree, less funding allocated than announced	RRF
Sweden	Only one project; received half of funding allocated	Swedish Energy Agency

PROMINENT HYDROGEN PEOPLE:

Harry Boyd-Carpenter,

Managing Director, Sustainable Infrastructure Group, EBRD

In each issue of the Hydrogen Europe Quarterly, we interview a prominent person connected to the hydrogen sector to talk about their involvement and interest in hydrogen, as well as about the key issues that concern them. For this issue, Hydrogen Europe spoke to Harry Boyd-Carpenter, Managing Director, Sustainable Infrastructure Group, EBRD, about his own journey and the intricacies of financing hydrogen projects.

Harry Boyd-Carpenter

1. How did you personally become interested in hydrogen?

Like many people, my journey into the green energy transition started with renewables – I can remember the excitement of financing, over a decade ago, the first solar project in Jordan, which was all of 10 megawatts! Since then, of course, we've seen the incredible growth in this sector and now we are involved in projects of 1 gigawatt or even more and the route to decarbonise electricity production is increasingly clear.

I started therefore a few years ago to get interested in what comes next and especially how to decarbonise all sorts of things that don't, at least currently, directly use electricity. And it became increasingly obvious that following those questions often leads you to hydrogen.

And then of course there is something very attractive about the simplicity of hydrogen – the lightest element in the universe, just a proton and an electron, and so ephemeral that if not bound

up somehow it will "slip the surly bonds of Earth". Yet it's also so fundamental and so powerful, and actually the source of almost all energy on Earth, not least by powering the sun. If you're going to become passionate about one element, hydrogen is a good candidate!

In this context, I am very interested to see how we can collectively, working with public and private stakeholders, support countries to develop and take off the ground green hydrogen projects to decarbonise industries, transport and other hard to abate sectors.

2. What is EBRD's approach to hydrogen investments?

The EBRD welcomes the growing interest in renewable hydrogen and the broader recognition of its potential to decarbonise hard-to-abate sectors. In the context of investments, policy and planning, we now need to work together with the public and the private sector stakeholders to fully harness green hydrogen's transformative potential.

To accelerate the uptake and trade of renewable hydrogen, we need to think strategically about where demand will come first and which investments are best positioned to meet that initial demand, as well as the policy approach to best sustain these investments. We have to build hydrogen strategies, regulations and market frameworks that provide long-term clarity to investors. The planning of these require dialogue between the regulators and the private sector.

As part of our holistic approach to the green transition, we assist countries and companies in developing hydrogen strategies and investments. Once we build that strategic framework, we can discuss the type of financing that best suits this early-stage market.

Cost competitiveness, proximity to end markets and the availability of critical materials required for infrastructure are vital for trade in renewable hydrogen. The big immediate question to policy makers is: Do we place green hydrogen production where the renewable energy resources are, or where the demand is? Other important questions are: Is it electrons or molecules? Is it electricity interconnectors, refurbishment of gas pipelines for the green hydrogen blend, or is it shipping? And do we ship green hydrogen or its derivatives?

EBRD economies with high potential for producing renewable energy at low cost have the opportunity to produce for both internal market and to export low-cost green hydrogen or its derivatives such as ammonia and methanol.

In our region from Mongolia to Morocco east to west, and from the Baltics to Greece in the south, we see a number of countries emerging with green hydrogen strategies (e.g. Egypt); not coincidentally these are countries that have superb renewable resources and are also ramping up renewable energy generation.

EBRD has financed two hydrogen projects so far: one is an export oriented green ammonia project in Egypt to export to the EU; the other is green hydrogen production for a domestic fertiliser producer in Uzbekistan. I don't think it's coincidence that these are both projects focused on hydrogen for industrial purposes, not energy.

Taking the example of Egypt, we believe that North Africa and the Eastern Mediterranean with vast renewable resources is one of the regions with higher potential for an accelerated uptake of green hydrogen. This can support green value chains domestically in high carbon intensity sectors, such as fertiliser production. The region is also at the crossroads of the EU and Asia, both likely to be the earliest and possibly the biggest markets for this renewable commodity.

In this context, green hydrogen corridors present an opportunity to balance the energy transition goals of Global North with the economic development aspirations of the Global South, where abundant renewable energy resources provide a competitive advantage for green hydrogen production. To ensure that benefits are shared equitably, investments in renewable energy and green hydrogen production infrastructure should prioritise long-term economic growth in host countries. This includes improving energy access and reliability for local populations, to foster inclusive development.

3. How does financing hydrogen projects differ from other clean technologies?

The green hydrogen market has specific needs in terms of financing. We are looking at a nascent market with early-stage projects. These projects need large-scale investments, but investors do not have certainty on supply and demand sides. The vast majority of planned global renewable hydrogen capacity has no committed offtake agreement and for those planned projects with an off-take arrangement, these are mostly based on Memoranda of Understanding (MoUs), so may take time to become binding. Offtake is the key word for bankable projects.

To support matching supply and demand, we need systematic instruments that can provide the certainty necessary for investors and this is where the European Hydrogen Bank and similar bilateral means play a key role. But it's also important to look at the broader suite of regulation to stimulate demand, especially in the EU. For example, we see blending requirements as key drivers of demand.

It's clear that financing of green hydrogen projects is more complex than financing of renewable energy sources. On the one hand, we have the interface with the offtake agreement and technical considerations, on the other hand, the green hydrogen as a commodity with associated market risks.

On our side, the financing tools we need will have to pool together multiple investors and lenders and ensure close cooperation. To reduce the risk associated with early-stage projects, first-loss guarantees should be provided. We are working successfully with the European Commission on EFSD+ guarantees, which can be a blueprint for hydrogen. All of these can be used alongside grants and concessional loans.

4. Over the next 5 years, what would you like to see the EU and member states prioritise when it comes to hydrogen?

In order to accelerate the EU decarbonisation efforts, priority should be given to ensure a fit-for-purpose legislation and regulatory framework, that gives investors the necessary clarity and reacts swiftly and flexibly to market realities. This is particularly important for the imports of renewable hydrogen, e.g. from North Africa, where currently the prospects of reliable European offtake are a key factor for final investment decisions and can hold up the scale up of the needed investments.

In addition, integrated planning and financing of infrastructure responding to market needs is crucial, such as large-scale infrastructure investments required for establishing green hydrogen corridors.

It should be also a priority to provide targeted financial support at necessary scale. The first two auctions for green hydrogen and the announced third one in 2025 under the domestic leg of the European Hydrogen (H2) Bank were a start, but this needs to be scaled to create broader impact. Given the importance of imports, we also very much look forward to the development of the international leg of the EU H2 Bank swiftly, and expand on the use of existing similar schemes, such as the H2 Global.

5. What does a healthy market for sustainable hydrogen mean for European decarbonisation efforts?

The shift towards renewable hydrogen is already underway. The hydrogen market is positioned for substantial growth, with opportunities across various industries ranging from transportation to energy storage and industrial decarbonisation. As technological advancements continue and infrastructure development accelerates, renewable hydrogen will become a cornerstone of the global clean energy transition.

The characteristics of a mature and healthy market would be based on diverse and scalable hydrogen production, where green hydrogen dominates and there is domestic production and imports balance; well-connected infrastructure where a pan-European hydrogen backbone connects production sites with demand centres (industry, transport, power) and there are strategic storage solutions; and a competitive as well as transparent hydrogen market.

This would support adoption of hydrogen by hard-to-abate sectors, helping the continent reach net-zero emissions while strengthening its energy independence. While there are challenges ahead, the future of hydrogen is bright, with governments, businesses and investors driving forward an era of sustainable, hydrogen-powered solutions.

Corporate Member Spotlight: Danfoss ready to play its part in a global hydrogen market

The Hydrogen Europe Quarterly's member spotlight covers one of Hydrogen Europe's diverse membership and its activities and ambitions in hydrogen. Danish multinational **Danfoss,** with a legacy of market-leading power electronics and heating and cooling technology, hopes to leverage its experience to contribute to the clean hydrogen value chain. We spoke with Helge Vandel Jenson, business development director at Danfoss, about the company's ambitions in hydrogen.

Nearly a century old, Danfoss has come a long way since its inception and the creation of its own refrigeration expansion valve – the company's first product. Now a multinational company with 40,000 employees and a strong presence in Europe, the US, and Asia, its product range has vastly expanded. The company boasts multiple, diverse business segments and a footprint across many sectors, and is now set to make its mark in the hydrogen space. Speaking of the molecule, Jensen highlighted Danfoss Power Solutions, which creates motors and components for electric off-highway vehicles; Danfoss Drives, which manufactures power converters that can be used in electrolysers and fuel cell systems; and Danfoss Climate Solutions, which produces energy recovery devices for electrolyser applications. These are just some of the products offered by Danfoss that are appropriate in the hydrogen value chain.

Danfoss made its first investment into a hydrogen project five years ago, naturally focusing on smaller pilot projects as proof of

concept but now boasts a portfolio of around 350 MW to 400 MW either commissioned or in development. This growth shows the commitment Danfoss has to supporting the sector.

"The electrolysis process is an important place to be. We are strongly in favour of electrification, and what can be electrified should be. Hydrogen should be used where it makes the most sense and we are pro-electrolysis. The hydrogen should be used to make sustainable aviation fuels (SAF), methanol, and ammonia for use in the steel, chemicals, and fertiliser sectors. That's why we're here," said Jensen.

The company's AC–DC power converter, alluded to earlier, is by far Danfoss' biggest hydrogen-related product, with Jensen explaining that ***"we see a big future for our product with a strong role to play in electrolyser manufacturing."***

Danfoss also offers heat exchange solutions for removing and repurposing the heat generated from the electrolysis process.

"We are strong believers in sector coupling as a good way to decarbonise the EU. Lots of surplus heat from industrial processes goes to waste, but we believe it should be captured, put through heat pumps, and used in district heating," said Jensen.

Already it has established itself as a legitimate hydrogen player, with partnerships forged with fellow Hydrogen Europe members Hitachi Energy, combining its converters with Hitachi Energy transformers, Everfuel, where it supplied components for a 20MW electrolyser (the first large-scale hydrogen electrolyzer in Denmark), and Yara, delivering converters via Linde for a 24MW project.

"We can work with all electrolyser makers because we can provide exactly what they need. It is also important to work with EPCs going forward as they will be the ones digging the holes in the ground, pouring the concrete and building the production plants," explained Jensen.

Danfoss prides itself on the quality and efficiency of its converter design, which Jensen said avoids multiplying losses from electrolysis inefficiencies, adding that "***every euro you can save helps the bottom line."***

Indeed, this attention to efficiency and detail is what informs Danfoss' trajectory in the hydrogen space, including its choice of partners. Working with the companies mentioned above, among others, shows not only that the Danish group is aiming high, but working smart with a long-term view.

"We like to work with companies that are bankable, so investors trust us to also be around in the next 20 years," said Jensen.

Looking that far into the future surely indicates a positive prognostic for the sector within Danfoss, despite the present headwinds. Continued regulatory uncertainty in Europe, despite the legislative achievements of the past few years, persists in delaying or even cancelling significant numbers of clean hydrogen projects while keeping the rate of projects reaching final investment decision (FID) as low as 4% globally last year. Readers will be able to look at further analysis on this particular issue in this magazine, but Jensen echoed a common refrain on the difficulty of financing hydrogen projects when he said that ***"if you don't have an offtaker for your hydrogen, then nothing will happen."***

This was mentioned, however, when discussing Jensen's optimism that the development of pipelines between European countries – connecting producers with end-users - will help to solve this issue.

Denmark's approval of the German pipeline, which was a pre-requisite to building some of the planned gigawatt-scale projects in Denmark, is cause for delight at Danfoss. Hydrogen in Denmark is highly dependent on the business case of the offshore wind projects – the source of power for the electrolyser. As hydrogen enthusiasts will know, the biggest contributor to the cost of the molecule is the cost of the energy that produced it. With a healthy new supply of offshore wind capacity in Denmark – where the wind

is known to blow – and the positive news on the pipeline means the country is well set up to succeed.

"I see some light at the end of the tunnel in Europe. Having the pipelines in place means we can create a hydrogen economy in Denmark, Germany, the Netherlands, and Belgium all connected by pipelines; this is a huge step forward," Jensen argued.

The positive feelings around European hydrogen are all the more welcome given the expected slowdown of momentum in the USA where Jensen acknowledged that, despite talks with many "great companies" there, there is little expectation under the new administration that too many renewable hydrogen projects will reach FID.

The onus is on Europe, then, to bring the levelized cost of hydrogen (LCOH) down through improved efficiency, economies of scale, best practices, and state support. On the latter point, more subsidies on the offtaker side would be a huge difference maker.

"We work a lot with SAFs, and if there's no guaranteed price then investors struggle to sell, cause SAFs will be more expensive for the foreseeable future. We need some kind of support to make the projects happen or they'll never get moving," urged Jensen.

Jensen also mentioned the impact of interest rates on final cost, adding that signs were pointing to rates coming down soon. The industry would certainly take any win it can get, with competition heating up, especially with China, for dominance in the clean hydrogen space.

"For Europe's hydrogen industry it's important that we can create conditions that allow us to be competitive. For now, our electrolysers are the strongest still, but if it wants to China can work fast and lead in the next generation of products. If we don't speed up, we will lose out like we did on batteries, and solar," said Jensen, emphasising the importance of Europe's green industrial deal, which he said is in "all of our interest".

National Association Spotlight: Deutscher Wasserstoff-Verband

For each issue of the Hydrogen Europe Quarterly, we will speak to national hydrogen associations of countries focused on becoming major contributors to the global hydrogen market. This time, we spoke to **Friederike Lassen,** chairwoman of Deutscher Wasserstoff-Verband (DWV), the German Hydrogen Association about lessons learnt, early movers.

> **Hydrogen is not rocket science – but even rocket science can be done!**

Germany's position as a European leader also extends to the hydrogen sector. Its strong industrial base, technological prowess, and economic weight provides an excellent basis for the country to play its part well in the European hydrogen value chain. As technology providers and end-users, German companies are well represented, and the country's large capacity for hydrogen storage will prove crucial in a domestic and European context despite a comparative lack of renewable energy resources compared to some fellow member states.

Generally good starting conditions can only get one so far, however, and Germany is facing many of the same issues as the rest of Europe in

scaling up its clean hydrogen sector. Regulatory uncertainty, lack of funding access, and slow permitting is a reality we are all familiar with by now. United under the same EU regulatory framework, there is still plenty of scope for member states to innovate domestically to solve these issues.

Germany's ambitious hydrogen strategy sets a 2030 target of 10GW of electrolyser capacity. It was also the first country to implement its own support scheme with H2 Global, though as we know its launch did not exactly go to plan. But as chairwoman of Deutscher Wasserstoff-Verband (DWV) Friederike Lassen explained, there were plenty of good lessons to be taken, and certainly no need to throw the baby out with the bathwater.

"If we didn't have H2 Global we'd have to invent it now," said Lassen.

"But of course we were disappointed in the first round. The set prices were so low that no German applications could reach the threshold. It was an example of putting up the hurdles too high; the money was there but nobody could get it. We have to make these schemes accessible," she added.

Founded in 1996, many years before the publication of the EU hydrogen strategy, DWV now boasts about 160 institutions and companies, as well as more than 400 dedicated individual members, demonstrating the level of interest from German companies in being a part of the country's hydrogen market. The organisation spreads its focus across multiple segments, or 'commitments', focusing on hydrogen-based mobility, decarbonising Germany's steel sector with hydrogen, securing the full value chain from renewable production to distribution and storage, and promoting wind-hydrogen systems as a baseload renewable energy solution.

A grid plan and market certainty

In October 2024, the Federal Network Agency (BNetzA) approved the national grid plan, with the first 525 kilometres of Germany's hydrogen core grid to be built this year. The 9,000-kilometre-long core grid, 60% of which will be repurposed gas pipelines, it is set to be completed by 2032. The total cost will come to just under €19 billion and be funded through a mix of private and public capital. For Lassen, the plan is a gamechanger.

"It was a breathtaking moment when the German grid plan was fixed. It gives more certainty for hydrogen, which areas will be connected and where the cross-border connections will be located," she explained.

Combined with other positive developments relating to cross-border hydrogen pipelines with Denmark and France, and German companies now have "security on starting points," as Lassen put it, for how and where to initiate their first projects and where things can be scaled up; the natural distribution hubs to demand centres. The grid plan is certainly a key piece of the puzzle, something Germany is alone among European member states in having achieved such a concrete plan to build-out crucial hydrogen infrastructure.

And it's not the only good news. Grid connection fees – often a hefty portion of a project's costs – have been waived under a grandfathering rule for all projects in place before 2029. With the current cost profile of renewable hydrogen projects, this is a significant help. But there still remains a gap to bridge.

"These steps help us a lot but there is so much still to do. We have to move forward with the whole value chain at once, bringing everyone along at the same time," said Lassen, acknowledging that the 10 GW target for 2030 will likely not be met due to the average of six years it takes for projects to reach final investment decision (FID).

Lassen identified the continued complexity of permitting processes in Germany has one of the main culprits for these delays, as well as the previously mentioned struggles with funding schemes. While the Important Project of Common European Interest (IPCEI) programme is a useful and welcome one, DWV would like to see more small funding schemes applied quickly and more pragmatically to avoid the multi-year waits for financial certainty.

So what else could help improve the FID rates for projects, which lumbered around the 1% mark in Germany last year. Lassen admits there's no magic tool, but was optimistic about the prospects of lead markets, for instance in the steel sector, as another contribution to the solution. She also mentioned her interest in creating demand

in the mobility sector, including aviation and maritime transport.

Perhaps most importantly, Lassen urged member states, including her own, to fully implement the Renewable Energy Directive (RED3) as soon as possible. DWV and Europe's other national hydrogen associations must continue to push for secure demand. While traditional industries have decades of experience, upscaling a new sector of such potential and complexity will always be a challenge.

"***We need to sing the same song but louder. It's about secure offtake and funding support, it's about increasing bankability and decreasing capital expenditure alongside strong industry commitment. Hydrogen is not rocket science – but even rocket science can be done!".***

Regional Member Spotlight: Ústí, Czech Republic

For each issue of the Hydrogen Europe Quarterly, we speak to an EU region striving to position itself as a key hydrogen contributor. For this issue, we spoke to **Karel Tichý,** Project Manager at the Economic and Social Council of the Ústí Region, about the Czech region's long history with hydrogen and his hopes for the future.

> **"Without enthusiasm and optimism, we won't be able to achieve anything.**

The northwestern Ústecký Region in Czechia has quite the claim to hydrogen fame. Austrian physicist Victor Franz Hess, on 7 August 1912, took off in a hot air balloon from the town of Ustí nad Labem to prove that radiation on earth came from space. This discovery of cosmic rays won him the Nobel Prize in Physics in 1936.

But if it weren't for the town of Ustí nad Labem, Mr Hess may never have ascended to such heights... literally. For it was in this town that he was able to find what he needed to rise high enough into the sky to take his measurements. At the time, Usti nad Labem boasted the largest chemical factory in the Austro-Hungarian Empire in which large quantities of hydrogen were being produced. The town was also home to the German Balloon Enthusiasts' Association. These two factors allowed Hess to take a hydrogen-fuelled balloon journey from Usti to 5000 metres altitude and collect the evidence he needed for his groundbreaking discovery.

Fast forward to the present day, Ústí is still the energy and chemicals heartlands of Czech Republic, with major production of existing grey hydrogen, around 110,000 tons per year, or 90% of national supply. The region also hosts companies up and down the hydrogen value chain with activities in storage, transport, production, and

even one refuelling station in the region with others in development.

As such, the region is ready to lead Czech Republic's national hydrogen drive, with its recently published strategy aiming for 400MW of electrolyser capacity by 2030, among other targets.

"Hydrogen will really take off in Usti and in two other regions, essentially the Czech coal regions which are in transition and striving to be the country's hydrogen valleys in a true sense – where all parts of H2 value chain are covered or presented," said Karel Tichý, Project Manager at the Economic and Social Council of the Ústí Region.

The two other regions are Karlovasky and Moravia-Silesia which, along with Usti, are members of the Hydrogen Valleys Partnership. The three have also set up inter-region working group, ***"not just to support each other, but also to be strong partners for national as well as international stakeholders,"*** said Tichý, highlighting the established value chain already in place.

"I'm personally happy about the range of producers of hydrogen technologies we have here, including electrolyser manufacturers. This ranges from small, kilowatt scale to companies completing megawatt-scale projects in cooperation with companies like Siemens," he said.

To be able to support the complex development of the hydrogen economy in the Ústí Region the Economic and Social Council of the Ústí Region has set up a "Hydrogen Platform of the Ústí Region" back in 2019. The platform consists of around 30 regional as well as national stakeholders and it is meeting on regular basis 3-4 times a year. Regularly it hosts around 60 hydrogen experts. The latest meeting was held just last week.

The council and the regional hydrogen platform is involved in some capacity in three significant projects. The first, the Development of the Ústí Hydrogen Valley, is being financed by the operational program through the Just Transition Fund. Earlier this year, the region was part of a kick off meeting on the H2 Industry Inland Valley (HI2-Valley) project, which is aimed at decarbonising the industrial sector. Ústí is one of five partners on this major project financed by the Clean Hydrogen Partnership. The project is led by Austrian stakeholders and supported by the Vienna Development Agency. Finally, it is a partner on the initiative to Empower Hydrogen-ready Regions in Central Europe (H2CE), which targets hydrogen development in Germany, Czech Republic, Slovakia, Austria, Slovenia, and Northern Italy. This project is financed from the Interreg Centrel Europe Programme.

Since 2022, Tichý and his colleagues have also set up "H2 forum" gatherings to discuss suitable options for transitioning pathways and allow an open exchange of experience. These forums have been held yearly on a rotating basis between Usti, Karlovasky, and Moravian-Silesian regions. The 2025 meeting will in fact take place in Usti Region on 3rd and 4th June.

Part of Ústí's mission is also supporting stakeholders implement their own projects, which has so far proven successful: not only have they secured special funding from the Just Transition Fund, but also secured a dedicated call with the Ministry of Environment's Modernisation Fund which has set up a program called Green Gas with an open call for electrolyser installation projects in the three regions and beyond.

"Just today we got confirmed information from one local stakeholder in the Ústí Region who has submitted a proposal for a 20MW electrolyser under this call," Tichý enthused.

Despite this success, the obvious challenges remain. Tichý called for access to better funding mechanisms, saying that ***"it is becoming clear, that without meaningful operational support we cannot achieve significant results in the development of the hydrogen economy as such,"*** and for a better approach to overregulation. The EU, he said, must be aware of the fact that inland countries like the Czech Republic do not share the same conditions as southern and northern European countries with large offshore wind or solar potential.

This is why, he explained, Ústí is targeting also other forms of clean hydrogen production to build up supply. In particular, the region is ready to involve specific technologies like pyrolysis.

"When talking about decarbonisation, from our perspective, any kind of low-carbon solution should be welcomed in the early stages of transition. Not all countries can afford to have just renewable hydrogen. There should be space for

low-carbon solutions. The future is green, but the pathway is multi-coloured," said Tichý.

The region is in daily contact with the country's ministry of industry and Usti region is considered a respected partner on a number of tasks that are part of national hydrogen strategy's implementation. While he acknowledged that there could be more targeted support from government and political parties, Tichý is very grateful for the support received so far and his optimism for making hydrogen a success has not waivered.

"Without enthusiasm and optimism, we won't be able to achieve anything," he said.

TERA-Award's Global Push: Fast-Tracking Hydrogen Innovation and Collaboration

In an era when clean energy has become a high-stakes global priority, the **TERA-Award** is at the forefront of accelerating hydrogen innovation. As one of the world's most prestigious energy innovation competitions, it offers a **one million dollar (US$1m) grand prize** to the winner, providing a critical boost to breakthrough technologies that have the potential to reshape the future of energy. Now entering its **fourth edition**, the TERA-Award has attracted participants from **over 59 countries and regions,** reflecting the growing global momentum behind hydrogen. With a surge of interest from Europe, the competition is increasingly bridging international markets, fostering cross-border collaboration, and helping the most promising hydrogen startups scale their innovations.

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Backed by Full Vision Capital, the TERA-Award has become a launchpad for hydrogen startups, connecting them with industry leaders, investors, and policymakers. Many past winners have successfully scaled their technologies, demonstrating the competition's tangible impact on the global clean energy transition.

Bringing Europe into the Hydrogen Fold

Alan Chan, Executive Chairman of the TERA-Award Organising Committee, highlights the TERA-Award's inclusive approach: "Our door has always been wide open to European participants," he emphasizes, underscoring the strong presence of innovators from Germany, France, and beyond. Chan believes the TERA-Award's cross-border mindset is pivotal in galvanizing the global transition to a cleaner energy future.

Heron Ho, Chief Organiser of the TERA-Award, has played a key role alongside Chan in shaping the TERA-Award's mission and outreach strategy. Full Vision Capital's leadership underscores the program's commitment to bridging regional divides and aligning resources for each new cohort of hydrogen visionaries.

Full Vision Capital: Powering the Future of Green Innovation

As co-founders and leaders of Full Vision Capital, Alan Chan and Heron Ho have built the firm into a driving force behind climate and energy innovation. Full Vision Capital is deeply committed to incubating cutting-edge ideas and ventures that are revolutionizing the clean energy landscape. By leveraging its expertise, network, and resources, the firm plays a pivotal role in accelerating the adoption of green technologies and promoting a sustainable future.

Its investment portfolio spans a broad range of pioneers and change-makers, including unicorns that Chan and Ho have helped build from the ground up. Through the TERA-Award, they continue to identify and support game-changing hydrogen solutions, ensuring that bold ideas translate into real-world impact.

A "Green Sandbox" to Overcome Commercial Hurdles

One of the biggest challenges facing hydrogen startups is the transition from research to real-world implementation. Many promising technologies struggle to secure the funding, technical support, and regulatory approvals needed to scale up. TERA-Award provides what Alan Chan describes as a "green sandbox"—a structured approach that goes beyond financial prizes to offer mentorship, technical guidance, and strategic industry connections.

Chan explains that the goal is not just to reward innovation but to ensure that winning teams receive the right backing to accelerate their journey from concept to commercial deployment. By introducing startups to investors, manufacturers, and policymakers at the right stage, the TERA-Award creates an ecosystem where hydrogen innovations can be rapidly tested, refined, and brought to market.

Spotlight on Success: From EnerVenue to Hydro X

Several TERA-Award winners have already made significant strides in advancing clean energy technologies. Companies like i2Cool and Luquos Energy have pioneered innovations in cooling solutions and flow battery storage, while EnerVenue has successfully scaled its metal-hydrogen battery technology into commercial applications. These successes illustrate how the TERA-Award serves as a launchpad for groundbreaking ideas, ensuring they reach the scale necessary to make a real impact.

Among the most exciting developments is Hydro X, the Silver Award winner in last year's competition. The Israel-based startup is tackling one of the most pressing challenges in the hydrogen sector: storage and transport. By developing a water-based hydrogen carrier, Hydro X has created a solution that is non-toxic, non-flammable, and non-explosive. Operating at near-ambient temperature and pressure with 94% energy efficiency, its technology significantly reduces the cost and complexity of hydrogen logistics, making large-scale adoption more feasible.

Bridging Storage and Transport Gaps: Hydro X's breakthrough

Hydrogen storage and transport remain among the most significant cost barriers to widespread adoption. Traditional methods, including ammonia-based carriers and liquefied hydrogen, involve high energy losses and complex infrastructure requirements. Hydro X's innovative technology offers a safer, more cost-effective alternative by enabling hydrogen to be stored and transported in a stable, water-based carrier.

This breakthrough has the potential to drastically reduce both CapEx and OpEx for hydrogen projects, making clean hydrogen more competitive with fossil fuels. By lowering storage and transportation costs, Hydro X is unlocking new commercial opportunities for clean hydrogen adoption worldwide. Its technology has already attracted interest from European hydrogen valley projects, particularly in regions focused on industrial decarbonization and large-scale hydrogen imports.

Eye on Europe —and Beyond

While the TERA-Award does not yet have a dedicated Europe-specific track, its future undoubtedly includes deeper engagement with European research institutions, investors, and industry alliances. As Europe scales up its hydrogen investments, Full Vision Capital's leadership sees increasing potential for collaboration, ensuring that European innovators can connect with global partners to accelerate hydrogen breakthroughs.

Alan Chan notes that fostering dialogue between European teams and counterparts from Asia, North America, and beyond is crucial for driving innovation. By sharing insights across regions, the TERA-Award helps catalyze advancements in hydrogen storage, transport, and production, strengthening the global hydrogen ecosystem.

The Road Ahead

From i2Cool and Luquos Energy to EnerVenue and Hydro X, TERA-Award has consistently showcased the real-world viability of clean-energy breakthroughs. By offering start-to-finish support—inclusive of funding, mentorship, and industrial networking—the award aims to reduce the time it takes for hydrogen innovators to go from prototype to market.

As long as the world grapples with urgent climate and energy challenges, TERA-Award will remain a key platform for aligning visionaries, resources, and results. With projects on the rise and new partnerships on the horizon, the drive toward a simpler, safer, and more cost-effective hydrogen economy has never been stronger.

Hydrogen & Start-ups: Lesson learnt from H2SITE

With the latest Competitiveness Compass, the European Commission has embraced many insights from the Draghi Report, emphasizing that Europe needs start-ups to thrive, as a key part of bridging the European Innovation Gap. Over the past 15 years, we've seen start-ups, even those that begin small, evolving into "unicorns" and transforming markets and sometime society. Why should hydrogen be any different? Despite achieving this requires the right supporting ecosystems which is not only limited to R&D and finance, Europe is still an R&D and IP intensive continent, and this poses the basis for generating successful start-ups if we also support an entrepreneurial mindset in research. Collaborations and Open Innovation are key, as well as designing the right funding instruments.

In this interview, we connect to H2SITE, a successful EU-based, R&D-generated start-up. During our interview with Andres Galnares, the CEO of H2SITE, we delved into the early days and challenges the company faced and the key milestones that have marked their journey so far. We will get into the start-up world and into the so-called midstream part of the value-chain: a segment often forgotten, even though its contribution can be quite significant for innovation and EU resilience.

H2SITE: from techies to a market-oriented company, an interview with the CEO, Andres Galnares

Can you briefly explain what has inspired H2SITE and what H2SITE does?

H2SITE was founded as a spin-off from two high-rank research and development centers: Tecnalia (Spain) and TU-Eindhiven (the Netherlands). The company was established in late 2019, with the goal of leveraging intellectual property developed over the past 15 years, to address hydrogen transportation challenges. ***"We took the intellectual property that had been developed by Tecnalia and TU-Eindhoven, among the best in EU for material science and process intensification, and put it into an empty shell. Since then, we've been developing and industrializing the technology, finding the adequate market fit"***

The company focuses on the midstream part of the hydrogen value chain, as its core technology is the integrated membrane reactor, which combines the reaction and separation stages of the process. This innovation makes the conversion process more efficient and requiring less energy. ***"We transport a molecule that contains a lot of hydrogen and meets three conditions: it is commoditized from a production perspective, commoditized from a supply chain perspective, and has a well-defined regulatory framework. Candidates include ammonia, DME, formic acid, and methanol".***

As it is, the technology can be applied across various traditional and emerging sectors: **Heavy-Duty transport,** by onboard ammonia cracking, **producing hydrogen** directly on-site through ammonia cracking or other processes, large infrastructure converting ammonia back to hydrogen at ports, **separation,** efficiently separating hydrogen from helium in natural hydrogen projects and **traditional refinery,** where we are able to have a very high hydrogen recovery factor where it is usually lost and use it back in the process.

What were the biggest challenges and success factors in the early days?

Early Challenges: Andres shared that the initial phase was marked by significant **technical and logistical challenges.** ***"At the very beginning, we had two very small demonstrators that worked but struggled a bit when doing what we wanted them to do,"*** he explained. Additionally, scaling the technology from the lab to industrial production posed numerous hurdles. The team, consisting of just three members, faced the added difficulty of the COVID-19 pandemic, which prevented them from meeting in person for the first six months. ***"One of us was in San Sebastián, another in Eindhoven, and I was in Paris, so that was relatively tough,"*** Andres recalled.

On the market side, **gaining acceptance** for a new technology was a significant challenge. **Demonstrating its clear benefits and reliability** was crucial to driving adoption. Ensuring cost competitiveness while navigating regulatory requirements and safety standards for developing the necessary hydrogen infrastructure, posed considerable hurdles.

Despite these hurdles, the team remained focused on their **goal.** ***"When the first seed was raised, with ENGIE like principal investor, we came to the conclusion that it was important for us to control the manufacturing process of the membranes very well,"*** Andres noted. This realization led them to establish a membrane fabrication line in 2021, a critical milestone that allowed them to control the entire manufacturing process from start to finish. ***"This milestone was crucial for understanding unit economics and ensuring high performance in both separation and reaction-related projects,"*** he emphasized.

Key Milestones: The establishment of the **membrane fabrication line** was just the beginning. Another significant milestone was the development of a 200 kg/day ammonia cracker in Birmingham. ***"This project demonstrated our ability to operate at a larger scale and provided valuable insights into the technology's performance and reliability,"*** Andres explained. In turn, this

unlocked commercial successes in various sectors. ***"These successes have shifted our focus from being primarily technology-driven to a more market-oriented approach,"*** Andres noted.

Support and Funding: Andres highlighted the importance of support and funding in their journey. Competing against well-established technologies like PSA (Pressure Swing Adsorption) with 60 years of operation posed a significant challenge. ***"The company, with the support both from Tecnalia and from Eindhoven, has been very active in developing projects or subsidized projects with regional, European, and even UK funding,"*** he said. This support has been instrumental in increasing the maturity of their technology. Thanks to these projects, ***"we have gathered more than 50,000 hours of running time, which gives us a lot of maturity when tackling commercial projects,"*** Andres added.

Fundraising and Strategic Partnerships. Not only public funding. H2SITE has completed three fundraising rounds: the seed round set by ENGIE, the Series A led by Breakthrough Energy Ventures, and the most recent round led by Hy24 and Net Zero Ventures. ***"Each round brought in strategic partners who have been instrumental in the company's growth,"*** Andres detailed.

"ENGIE New Ventures supported us in launching the development during the Seed round. The A round was still quite technology-focused, and we had two super important partners, Breakthrough and Equinor Ventures, join the CAP table," he said.

The latest round has positioned H2SITE for further growth, particularly in infrastructure-related projects. ***"This strategic investment has allowed H2SITE to raise between 60 and 70 million euros in total, providing a comfortable position compared to their humble beginnings in 2020."*** Andres reflected.

When asked **what should the perfect EU funding instrument for start-ups look like,** Andres replied that ***"long-term funding commitments are crucial for scaling hydrogen technologies, while innovation grants drive technological progress."*** He emphasized the need for ***"high funding intensity low TRL funding, but also first of a kind type of large-scale project."*** Along the way, funding should be ***"flexible, with different speeds, and comprehensive, blending grants, equity investments, and low-interest loans to support various growth stages."*** The funding instrument should ***"create demand for hydrogen technologies through subsidies or mandates."*** Regulatory support and collaboration between startups, established companies, and research institutions are also essential. ***"Investing in education and training programs ensures startups have access to skilled talent,"*** Andres concluded.

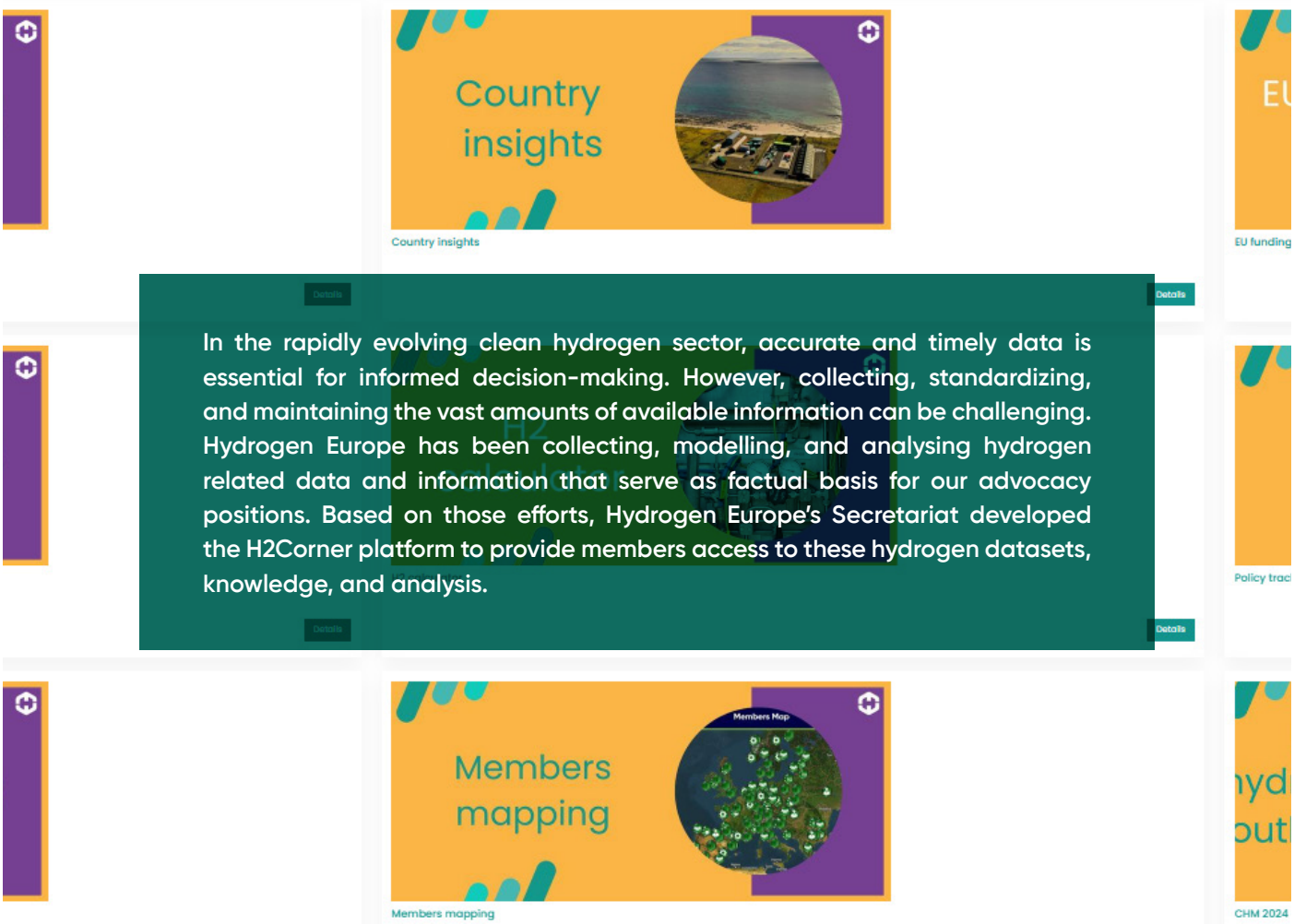
Conclusions and a look to the Future: H2SITE's journey from a small team facing technical challenges to a company achieving significant milestones and commercial success can be inspirational. What about the future?

"Decarbonisation of hard to abate industry, SAF, heavy duty transport and maritime", was Andres' reply. For the rest: ***"It's a long run, not a sprint. Technology will enhance efficiency in the existing hydrogen industry, and our approach is to be pragmatic and patient when tackling emerging applications."***

By Marco Molica-Colella,
R&D manager, Hydrogen Europe

POLICY & MARKET UPDATES

H2Corner: A hydrogen data and insights hub for Hydrogen Europe members



In the rapidly evolving clean hydrogen sector, accurate and timely data is essential for informed decision-making. However, collecting, standardizing, and maintaining the vast amounts of available information can be challenging. Hydrogen Europe has been collecting, modelling, and analysing hydrogen related data and information that serve as factual basis for our advocacy positions. Based on those efforts, Hydrogen Europe's Secretariat developed the H2Corner platform to provide members access to these hydrogen datasets, knowledge, and analysis.

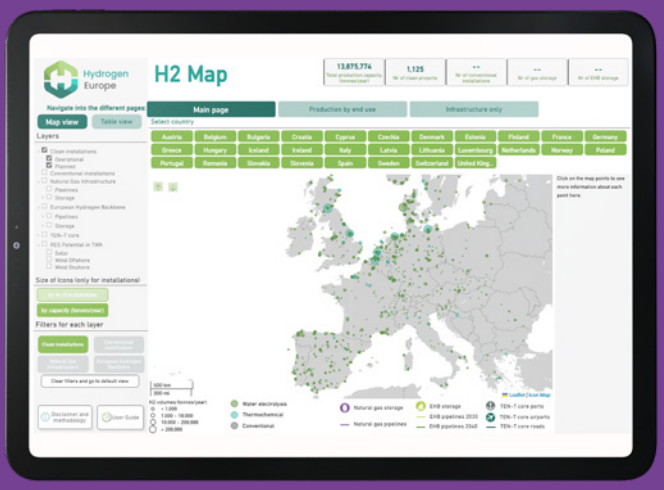
Products and key features of the platform

The H2Corner platform is organized into different products, each tailored to address specific aspects of the hydrogen ecosystem. These products range from dynamic dashboards to comprehensive reports, designed to provide members with easy access to critical information and relate to conventional installations and current hydrogen demand, planned clean hydrogen projects, electrolyser manufacturing, national and EU funding schemes, national strategies, and a member mapping tool to support member's collaboration.

Below, you will find detailed descriptions of each product.

Interactive map

The Interactive map is a geospatial hub for hydrogen industry data in Europe, covering existing and planned production projects, infrastructure, and renewable energy sources (RES) potential. Users can customize their view by selecting specific data layers and filtering by country. A table view provides additional details on each mapped point, enhancing the user's understanding of the data.

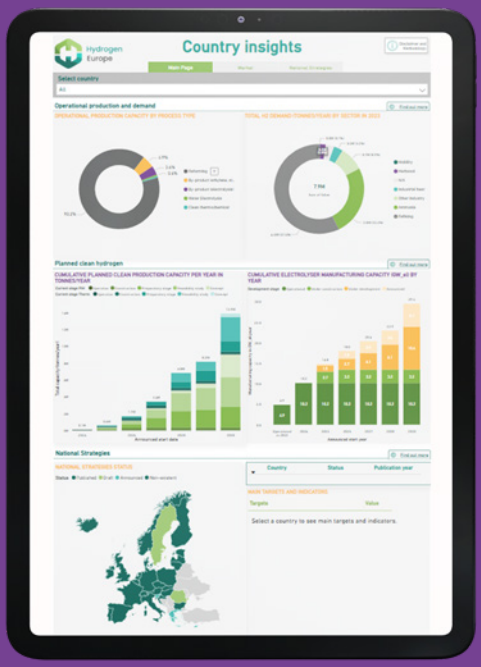


EXAMPLE USE CASE:

Do you want to identify all clean hydrogen projects in Spain, understand their development stages, and check nearby pipelines plans? The Interactive map provides a clear geospatial representation of it, providing access to detailed project information.

Country insights

The Country insights dashboard provides aggregated data on current and planned hydrogen production and demand, along with existing national strategies. Users can filter by country or select multiple countries to compare regional trends.



The dashboard is composed of three pages:

- The main page provides a summary of the main insights, including market size and strategies.
- The market page offers a detailed analysis and insights into the current market and planned production and consumption projects.
- The National strategies page provides detailed information about national hydrogen strategies in Europe.

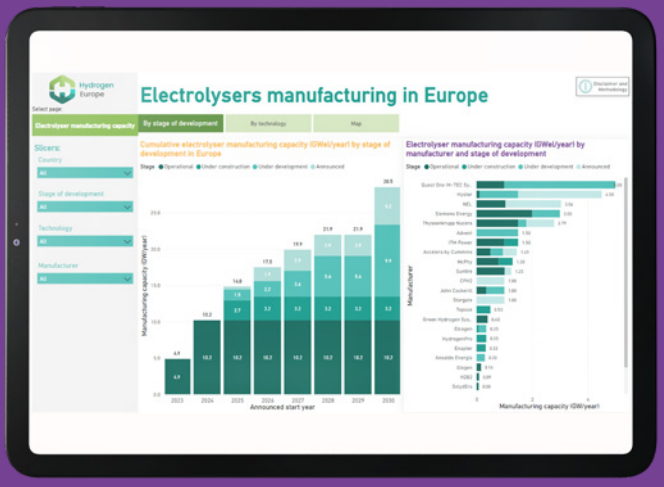
EXAMPLE USE CASE:

Do you want to understand Germany's current hydrogen demand and planned clean production plans?

The Country insights is the right product to find this information, offering different details and types of visuals for a comprehensive and complete overview.

Electrolyser manufacturing in Europe

The Electrolyser manufacturing dashboard provides an overview of current capacities and expansion plans for electrolyser manufacturing factories across Europe up to 2030. Users can find information categorized by stage of development, manufacturer, and type of technology. The dashboard includes a geospatial map displaying factories by development stage and size.

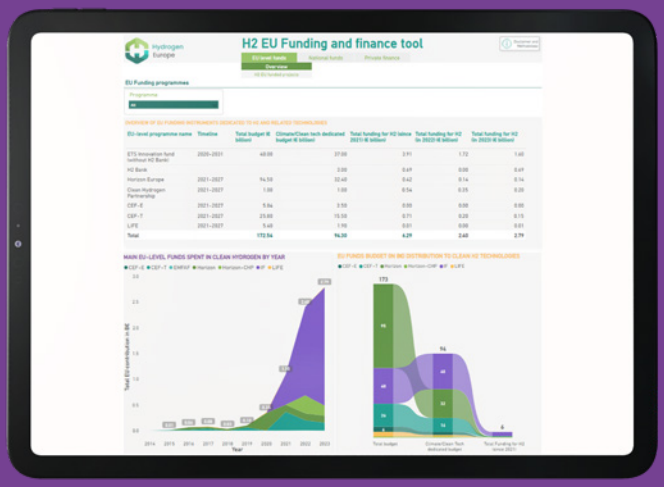


EXAMPLE USE CASE:

Do you want to find manufacturers of alkaline electrolysers in Europe? This product allows you to view this information in an easy-to-visualize and analyse format.

EU Funding & financing

The H2 EU funding and finance tool provides a comprehensive overview of the primary EU-level and national funding schemes available for hydrogen-related technologies as well as start-ups and fundraising in the sector.



The dashboard is composed of three pages:

- The EU level funds page includes an overview of main EU funding schemes, the respective budgets allocated for hydrogen, and a list of projects funded by the EU.
- The national funds page provides an overview of the key national funding schemes.
- The private finance page offers an overview of hydrogen-related start-ups and fundraises.

EXAMPLE USE CASE:

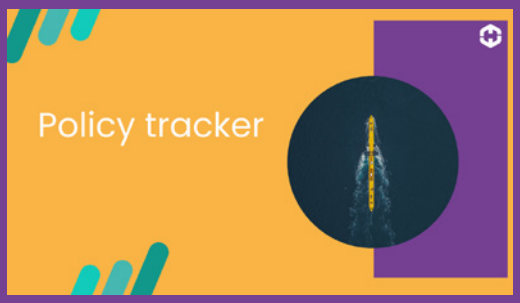
Do you want to know how much EU funding has been allocated to hydrogen projects and which companies received support? This tool offers a structured view of investments in the sector.

Policy tracker

The Policy tracker tool is a one-stop shop for members to stay informed on regulatory files on the EU level regarding hydrogen.

The tracker includes all the relevant files from the previous legislative cycle, such as important Fit for 55 files and REPowerEU-related legislation, as well as key non-legislative items like the European Hydrogen Strategy. It also provides boiled-down versions of political priorities of the Commission President and key political groups at the start of the new cycle.
For each dossier, the report offers an overview of the file, an evaluation of hydrogen-relevant aspects, a description of important secondary legislation, and a consistently updated timeline.

EXAMPLE USE CASE:
Do you want to know the deadline for implementing the revised RED? Or are you curious about the rules for electrolysers being eligible for ETS free allowances? This report compiles all relevant regulatory information in one place.



Advanced project tracker

The Advanced project tracker is a quarterly report covering clean hydrogen projects that have become operational, entered construction, or reached Final Investment Decision (FID) within each quarter.

The report includes:

- An overview of current operational and construction clean hydrogen production volumes, split by end use, average size, location, and development trends.
- Quarterly updates on new operational or FID/construction-stage projects, including projects investment and technology details.
- A comprehensive list of operational and under construction projects.

EXAMPLE USE CASE:
Do you want to know which projects reached FID in the last year? This tracker allows you to find it along with detailed project information.

We encourage all members to explore H2Corner and discover the wealth of information and insights it offers. Your feedback is invaluable to us, and we invite you to get in touch with any suggestions that can help us improve the platform further. Additionally, we welcome you to share your projects and information updates with us, ensuring that H2Corner remains a comprehensive and current resource for the community.

Access to H2Corner is exclusive for Hydrogen Europe Corporate members and Global partners. We look forward to your engagement in utilizing and shaping this valuable tool.

POLICY & MARKET UPDATES

The importance of hydrogen for sustainable agriculture: the case of low-carbon ammonia fertilisers

The hydrogen sector is set to play a crucial role in decarbonising hard-to-abate industries where direct electricity use is limited, thus providing a significant opportunity for the fertiliser industry. Fertilisers are essential for global food security, yet their production is highly carbon intensive. Ammonia, a key nitrogen fertiliser component, contributes approximately 2.6 gigatonnes of CO2 emissions annually globally, more than global aviation and shipping combined[2]. The shift to green ammonia, produced via clean hydrogen, presents a transformative pathway to reducing the fertiliser industry's carbon footprint.

Strong demand for clean hydrogen is vital to scaling a global hydrogen economy and contributing to its cost reduction, yet in its early years the sector has struggled with demand predictability. Fertiliser production could be a major use case, with hydrogen-based ammonia driving the demand necessary for clean hydrogen expansion. By integrating clean hydrogen, the fertiliser industry can catalyse hydrogen market growth while reducing its emissions. Producers will need long-term market signals and purchase commitments to justify capital expenditures. Ambitious policies and regulatory clarity would further strengthen market confidence and encourage broader adoption.

In Europe, the ammonia sector is confronted with rising production costs, increased import competition, and stricter climate regulations. EU ammonia output dropped from 15.7 million tonnes in 2020 to 10.7 million tonnes in 2023 due to high energy prices and competition from lower-cost producers. In 2023, 38% of the EU's nitrogen fertiliser consumption relied on imports, primarily from

2 / Yunhu Gao and André Cabrera Serrenho. 'Greenhouse gas emissions from nitrogen fertilisers could be reduce by up to one-fifth of current levels by 2050 with combined interventions.' *Nature Food* (2023). DOI: 10.1038/s43016-023-00698-w

Russia and Algeria (Eurostat). Establishing a secure market for low-carbon fertilizers will be key to maintain the competitiveness and sustainability of the industry. This requires stable regulatory frameworks, incentives for low-carbon ammonia offtake, including financial mechanisms to bridge cost gaps between conventional and clean hydrogen-based production.

The cost disparity between low-emission hydrogen and conventional ammonia feedstock remains indeed a significant barrier for producers and farmers to switch. Policy support and production scaling can drive cost reductions, ensuring that sustainable alternatives remain viable. Affordability is key to preventing adverse impacts on food security, particularly in vulnerable regions. A shift to low-emission ammonia can enhance global food security by stabilising fertiliser supplies while reducing environmental impacts. Financial tools like green bonds, carbon credits, and investment funds can help bridge the gap between innovation and market readiness. Organisations such as UNIDO and FAO are already working with developing countries on sustainable fertilizer production and use.

Setting robust greenhouse gas (GHG) emission standards is also essential. Standardised methodologies for assessing emissions in food production will enhance transparency and credibility. A harmonized framework enables producers, retailers, and consumers to make informed choices, fostering sustainable food supply chains.

Decarbonising fertilisers requires global efforts beyond Europe. **India,** a major fertiliser consumer and second largest producer in the world, is implementing policies to scale renewable ammonia production and reduce import dependency. The National Green Hydrogen Mission supports domestic hydrogen production through subsidies and research. Given its growing population, increasing energy demand and heavy reliance on imports, India faces a major decarbonization challenge. Investments in clean energy and hydrogen technologies can enhance domestic fertiliser production, and therefore domestic food security, while placing India as a key global exporter of clean ammonia. Leveraging vast renewable energy resources while aligning policy with sustainability goals will allow India to contribute significantly to global low-carbon fertiliser efforts.

In the MENA region, countries such as Morocco, Egypt, Saudi Arabia, and the UAE are capitalising on abundant renewable resources to become green hydrogen hubs. Egypt, for example, is well-positioned to lead sustainable fertiliser production in the region. Its renewable energy potential allows for scaling low-carbon ammonia production, benefiting both domestic agriculture and export markets. Egypt's strategic location, strong port infrastructure and trade routes further enable **Egypt** to become a regional hub for sustainable fertiliser production and global supply.

Brazil could also play a pivotal role in shaping global decarbonisation efforts for fertilisers. The G20 Rio de Janeiro Leaders' Declaration reaffirmed commitments to combating world hunger while advancing decarbonisation—an agenda aligned with the county's position as a leading agricultural producer. As the host of **COP30,** Brazil will have a unique opportunity to push for stronger international commitments on low-carbon hydrogen and fertilisers. Strengthening international cooperation and building relevant public-private partnerships to mobilise investments, will be essential to ensuring a viable and scalable transition.

Building on the former Global Fertilisers Challenge, and its recent Vision for Agriculture and Food, the EU is encouraged to pursue its engagement with global partners to promote ambitious yet achievable sustainability targets for fertilisers and their uptake. Europe's experience highlights the importance of aligning stakeholders—governments, industries, and investors—through clear regulatory frameworks, ambitious targets, and financial mechanisms to bridge cost disparities, but also the need to address demand as underlined in the Clean Industrial Deal. Strong demand signals from sectors like fertilisers will be key to help the hydrogen industry scale, drive innovation and reduce costs. Transitioning to low-carbon ammonia fertilisers will not only support sustainable agriculture but also lay the foundation for an integrated global hydrogen economy, fostering international cooperation, development and trade.

By Vera Ventura,
Advocacy Officer, Hydrogen Europe

POLICY & MARKET UPDATES

The Clean Industrial Deal and what it means for hydrogen

On February 26, 2025, the European Commission presented its Clean Industrial Deal (CID), a comprehensive strategy aimed at bolstering Europe's industrial competitiveness while advancing decarbonisation efforts. The initiative is a response to rising geopolitical tensions, slow economic growth, and global technological competition.

The CID seeks to integrate climate action with industrial, economic, and trade policies, positioning Europe as a leader in innovation and sustainable growth. This, through creating market conditions that benefit competitiveness, decarbonisation, and resilient production in the European Union.

The Commission's plan aims to achieve this by reducing energy costs, simplifying procedures, securing funding for innovation, and enhancing the resilience of European supply chains. Finally, by promoting EU standards, fair international competition, and reciprocity in global market access.

The Communication will be followed by a number of legislative and non- legislative initiatives to be adopted in the short and medium term. Lowering energy prices and boosting electrification are central to the EU's strategy to revitalise its industrial base. As such, the Commission is prioritising incentives for electrification, expanding energy infrastructure – particularly renewable capacity – and promoting more favourable contractual arrangements, including an upcoming European Grids Package.

Funding framework

A cornerstone of the CID is its robust funding framework. The Commission recognises three priorities for funding and investments: strengthening EU-level funding, leveraging private investment, and mobilising state aid.

Around EU-level funding, the Commission plans to establish the Industrial Decarbonisation Bank with an ambitious budget of €100 billion. This will be sourced from the existing Innovation fund, ETS revenues, and through revisions in the InvestEU programme. It should enable technology-neutral support across industrial sectors, including carbon contracts for difference (CCFD). A lot remains unclear, however, including the project selection criteria. The design of the fund will need to ensure competitiveness between projects, and a fair distribution of support across Member States.

Already in Q3 of this year the Commission will launch a €1 billion auction under the Industrial Decarbonisation Bank, while €4 billion will be mobilised from the Innovation fund in 2025 for clean tech and battery manufacturing. A third Hydrogen Bank auction will also be launched in Q3 2025, also worth €1 billion. Although the Industrial Decarbonisation Bank promises to move funds rapidly, 1/3 of its budget will rely on voluntary contributions from Member States, risking them to be subject to national priorities, potentially fragmenting the market and disadvantaging transnational projects such as those related to European hydrogen infrastructure.

Private investment is expected to play a significant role in complementing public funds. The Commission relies on mechanisms such as blended finance, loan guarantees, and equity investments aiming to leverage private capital into clean technology projects. By amending the InvestEU Regulation, the Commission intends to increase the program's risk-bearing capacity, thereby mobilising up to €50 billion in additional financing. This augmentation is targeted at investments in clean technologies, clean mobility, and waste reduction.

State Aid is the third pillar of the CID's funding wing. The CID has scheduled the creation of a Clean Industrial Deal State Aid Framework for Q2 of this year. This text, published for consultation two weeks after the release of the CID, unveils that the new framework will run until 2030. It also reveals inconsistencies and limitations that may hinder hydrogen production and use.

IPCEIs will also be amended to include one-stop shops, which should provide dedicated funding solutions, plugging into InvestEU and enhance coordination between project promoters and Member States. A Clean Tech Guarantee Facility and the lending pilot program together with the EIB have also been proposed but are not mentioned in the timeline. They are supposed to cover long tenure but also bridge loans, as well as tools to cover traffic volume risk in energy infrastructure development. The vagueness of the text is worrisome, as is the lack of mentions of small- or midcaps anywhere in the text. It risks smaller innovative actors, crucial for technology advancement, to be neglected or overlooked.

Hydrogen at the heart of the Clean Industrial Deal

The Clean Industrial Deal's funding measures have the potential to significantly bolster the European hydrogen sector by de-risking investments and accelerating large-scale deployment. The launch of the Hydrogen Bank's third call will substantially stimulate market dynamics by reducing financial risk and uncertainty for investors and suppliers alike. The creation of the Clean Industrial Deal State Aid Framework tries to provide streamlined and simplified rules for Member States to support hydrogen projects, fostering a more predictable and competitive environment. By easing bureaucratic barriers, this framework directly supports industrial efforts to adopt hydrogen-based solutions.

On all three fronts of funding, these initiatives not only address capital expenditure challenges but also ensure the long-term competitiveness and sustainability of Europe's hydrogen sector. That said, the CID funding framework, while ambitious, leaves uncertainty around the practical implementation of policies. Therefore, the proof of the pudding is in the eating; and in the case of the Clean Industrial Deal, a lot will depend on the implementation of these measures both at EU and at Member States level.

By Stanislas Demeestere, Policy Officer, Hydrogen Europe
& Marton Antal, Policy Officer, Hydrogen Europe

POLICY & MARKET UPDATES

Jorgo Chatzimarkakis is the new Chair of the European Net Zero Alliance

Hydrogen Europe CEO Jorgo Chatzimarkakis has been appointed as the new Chair of the European Net Zero Alliance (ENZA) for the first half of 2025. ENZA brings together key industry players committed to achieving the EU's net-zero goals, and Chatzimarkakis' leadership will play a crucial role in advancing this mission at a pivotal time for Europe's energy transition.

Concerning his appointment, Chatzimarkakis highlighted ENZA's commitment to supporting the incoming European Commission in maintaining the net-zero trajectory:

"It is an honour to chair the European Net Zero Alliance for the first half of 2025. We are committed to supporting the new European Commission in its efforts to stick to the objective of achieving net-zero by 2050. We want to deliver the implementation of the European Net Zero Industry Act by coordinating our strategies, which represent an important part of the European economy."

ENZA champions a holistic and technology-neutral approach to decarbonisation, ensuring that different energy vectors are integrated into a resilient and flexible energy system. Hydrogen plays a fundamental role in the journey to net-zero since as an energy vector that can bridge clean energy production technologies with clean energy demand, and leveraging its potential for a decarbonised future is fundamental if the EU wants to achieve its net-zero targets.

THE FOUR PILLARS OF ENZA ARE THE FOLLOWING:

enza
European Net Zero Alliance

- **Sustainability** for the roll-out of all renewable, low-carbon and circular solutions enabling the transition towards a net-zero economy.
- **Competitiveness** for the EU industry to thrive and to develop, manufacture and deploy competitive clean energy technologies.
- **Inclusion** for a future that is fair and beneficial for all EU communities, businesses and citizens, and where no-one is left behind.
- And, finally, **synergy** for a whole-economy approach to decarbonisation that supports the integration of different energy vectors, infrastructures and technology neutral solutions to achieve a resilient, efficient and flexible energy system for all end-user sectors.

Indeed, 3 + 1 infrastructures that underpin sector integration are cheaper than one, and this specific systemic efficiency is what Chatzimarkakis will be advocating. It is time Europe shifts its silo concept of the energy system where electrification is the only avenue for decarbonisation and, instead, integrates clean molecules and net-zero technologies to achieve a faster, cheaper, and more efficient energy transition.

This appointment comes at a time when Europe is defining its path towards 2040, making strategic decisions on energy infrastructure, competitiveness and the clean industry. Hydrogen Europe is confident that under Chatzimarkakis leadership, ENZA will help shape a robust and future-proof energy system that delivers on climate and industrial objectives alike.

We look forward to the collaboration ahead and to driving Europe's net-zero ambition forward with renewed commitment and strategic coordination.

POLICY & MARKET UPDATES

Hydrogen Europe Unveils H2Corner to Boost Industry Intelligence on Funding and Finance

In February 2025, Hydrogen Europe launched H2Corner, a new platform designed to provide its members with access to critical hydrogen-related datasets, knowledge, and analysis. Among its key features is the EU Funding and Finance Dashboard, a comprehensive tool that maps out both EU-level and national funding schemes available for hydrogen technologies.

Beyond the dashboard, Hydrogen Europe has introduced two additional resources to guide stakeholders through the complex funding landscape. The EU-Money Map offers an in-depth analysis of European hydrogen funding schemes, highlighting upcoming opportunities, while the National Schemes Map provides a comparative overview of global funding programs, with detailed insights into select national initiatives.

This article explores how H2Corner is shaping industry intelligence, focusing on its ability to track political and financial developments. Using the 2025 funding call announcements under the Clean Industrial Deal (CID) as a case study, we examine the CID's funding proposals, highlight key opportunities, and demonstrate how H2Corner serves as a vital resource for navigating the evolving hydrogen funding landscape.

The Industrial Decarbonization Bank (IDB)

The IDB is part of the CID and proposes a €100 billion budget, though much of it comes from existing sources:

- €20 billion from the Innovation Fund (IF)
- €30 billion from voluntary Member State contributions
- €33 billion from the EU ETS (post-2028)
- The remainder from InvestEU

In 2025, three key funding opportunities will be launched:

- €1 billion pilot auction for industrial decarbonisation
- €4 billion IF call for clean tech and battery manufacturing
- €1 billion third European Hydrogen Bank (EHB) auction

These initiatives signal a significant push toward accelerating Europe's clean energy transition, including hydrogen.

1 Pilot auction for industrial decarbonisation: A step toward demand-side funding

National funding for hydrogen remains heavily skewed toward supply-side initiatives, with limited financial support for offtake. Data from the National Funding Dashboard (Figure 1) highlights this imbalance, showing that few countries allocate substantial resources to demand-side funding. Notable exceptions include Germany's Carbon Contracts for Difference program and the H2Global two-sided auction model.

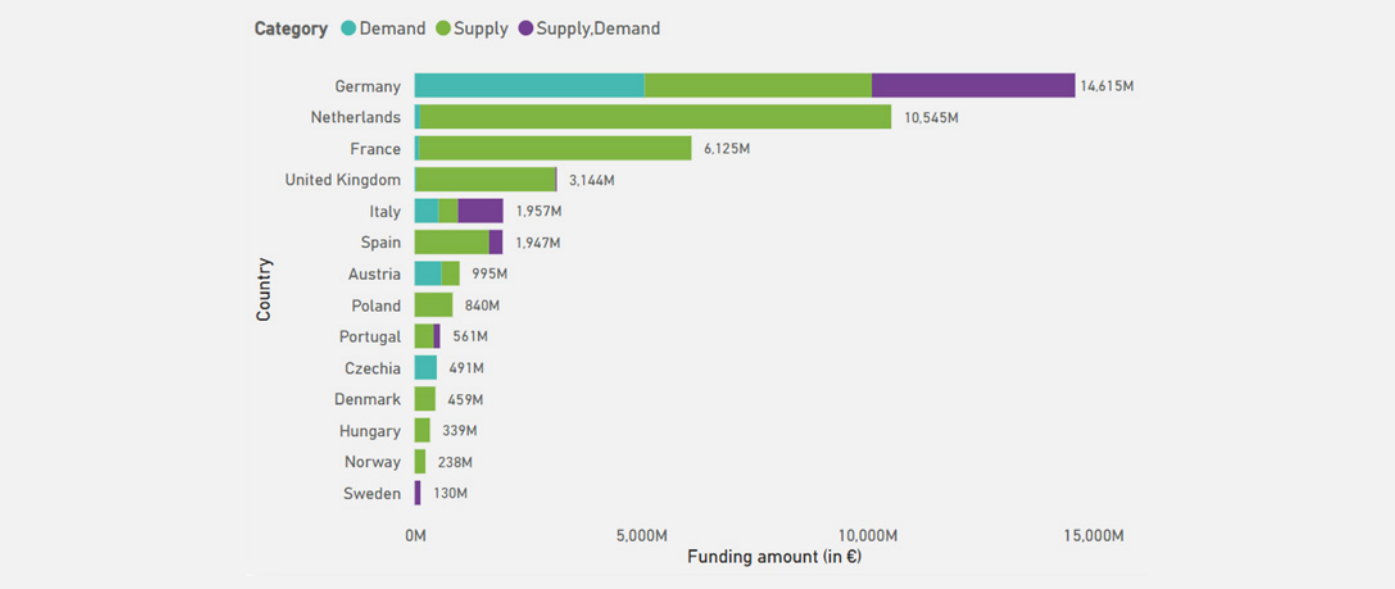


Figure 1 - National total funding size dedicated to H2 per country split by category of supply, demand[4]

3 / More information on the Clean Industrial Deal can be found here (only available for HE members).
4 / Hydrogen Europe, H2Corner, H2 EU Funding and finance tool, National Funds.

On a global scale, demand-side funding remains rare. The National Schemes Map reveals that while India and Japan have introduced demand-side auctions (Figure 2), similar initiatives are still uncommon worldwide.

Scheme						
Name	H2 Bank domestic leg	H2 Production Business Model (HPBM)	IRA – Production Tax Credit	H2 Headstart Programme	SIGHT Programme	Gx transition – Clean H2 Production
Production pathways	Renewable H2	Renewable & low carbon H2	Renewable & low carbon H2	Renewable H2	Renewable H2 & renewable NH3 production	Renewable H2 & Low carbon H2
Scope	Supply	Supply	Supply	Supply	Supply & demand	Supply & demand
Instrument	Fixed premium (10 years, cap 4.5€/kg)	CfD (15 years)	Production tax credit (10 years, cap 0.6-3$/kg)	Production credit (10 years)	CfD (3 years, cap 0.56-0.34€/kgH2; 0.9-0.6€/kgNH3)	CfD (15 years)
Selection Process	Competitive bidding	Competitive bidding	Competitive bidding	Competitive bidding	Competitive bidding	TBC
Award Criteria	Bid price	Deliverability, cost, supply chain dev., electr. system benefits	Lifecycle emissions, wages and apprentices	Non-weighted merit criteria	Reference price	Reference price
Aid cumulation	Excluded (flex. on offtakers & infra)	Possible	Allowed (stackability)	Excluded	Excluded	TBC
Local content	No (but info on ELYS' origins)	NO	Yes, credit value increase	N/A	YES	N/A
Budget	€800M (total €3B)	Round 2 (HAR2, 2024): €2.3B	Uncapped	€2.4B (AUS 4B)	€2B (for all modes)	€20.2B (Yen 3T)

Figure 2 - Comparison of international schemes for H2[5]

To maintain Europe's competitiveness in the hydrogen economy, establishing a strong demand-focused funding mechanism is essential. Hydrogen Europe has long advocated for such measures and welcomes the upcoming €1 billion pilot auction aimed at decarbonizing industrial processes.

Members can leverage tools provided by H2Corner to understand the global funding landscape, and understand the significance and its potential of the pilot auction to shape the future of Europe's hydrogen market.

2 Innovation Fund €4 billion call: Europe's most important hydrogen funding

The CID has announced a €4 billion call for the IF in 2025, reinforcing its role as the EU's primary funding mechanism for hydrogen. According to the H2Corner EU-level funds overview, the IF currently provides the bulk of EU hydrogen funding—accounting for 73% of total financial support (Figure 3). Additionally, the H2Corner platform offers a dedicated H2 EU Funded Projects tab, providing a comprehensive list of all projects that have secured IF backing.

5 / Hydrogen Europe, H2Corner, H2 EU Funding and finance tool, National Schemes Map.

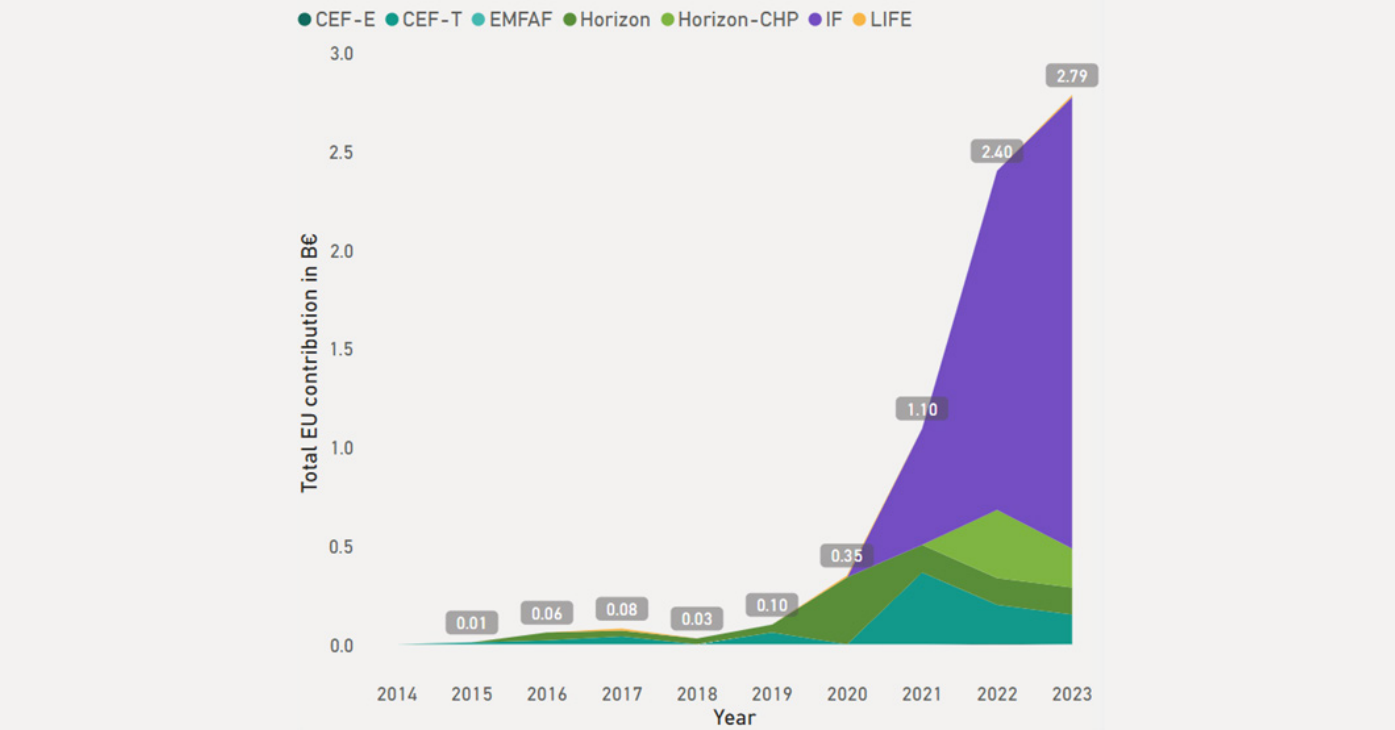


Figure 3 - Main EU-Level funds spent in clean H2 by year[6]

The EU-Money Map presentation delivers deeper insights into how the IF allocates its resources and how much funding is allocated within each. For instance, in the 2023 IF call, 35% of the funding designated for Clean Tech Manufacturing was directed toward the hydrogen sector (Figure 4).

Cut off date	Projects	H2 projects	% of H2 projects	Total funding	Funding for H2	% funding for H2
1st LSC (Oct20)	7	3	43%	€1.15B	€588,145,266	**51.1%**
1st SSC (Dec20)	30	4	13,3%	€109.2M	€17,832,714	**16,3%**
2nd LSC (Oct21)	16	6	37,5%	€1.78B	€569,076,645	**31.9%**
2nd SSC (March22)	16	3	18,7%	€59.4M	€12,028,971	**20.2%**
3rd LSC (Nov22)	36	19	53%	€ 3.3B	€1,621,715,528	**49%**
3rd SSC (March23)	17	2	11,8%	€ 59M	€7,245,685	**12%**
4th LSC/SSC (Nov 23)	85	27	30%	€ 4.8B	€1,634,092,309	**33.3%**
TOTAL	**207**	**64**	**30.9%**	**€ 11B**	**€4,450,137,118**	**40.2%**

Figure 4 - Innovation Fund H2 support summary[7]

Given the IF's central role in financing hydrogen, as presented in the H2Corner, Hydrogen Europe welcomes the newly announced €4 billion call.

By utilizing the tools available in H2Corner, stakeholders can track past EU funding trends and better anticipate how future allocations might shape the European hydrogen market.

6 / Hydrogen Europe, H2Corner, H2 EU Funding and finance tool, EU level funds.
7 / Hydrogen Europe, H2Corner, H2 EU Funding and finance tool, EU Money Map.

3 3rd EHB auction: An instrument to support the most competitive projects

Hydrogen Europe has supports the upcoming €1 billion third EHB auction, a critical step in advancing Europe's hydrogen economy. The H2Corner platform plays a vital role by offering valuable resources, including the H2 EU Funded Projects list, which provides an overview of all projects that have signed grant agreements for the first EHB auction (Figure 5).

PROJECTS LIST

Programme	Project acronym	Project title	Call acronym	Call year	Project EU contribution	Project status	Country	Partners
INNOVFUND	Catalina	Catalina	InnovFund-2023-AUC-RFNBO-Hydrogen	2023	€ 230,463,819	Ongoing	Spain	Copenhagen Infrastructure Partners (CIP)
INNOVFUND	eNRG Lahti	Lahti Power-to-Gas project - project by Nordic Ren-Gas - eNRG Lahti	InnovFund-2023-AUC-RFNBO-Hydrogen	2023	€ 45,228,375	Ongoing	Finland	Enrg Lahti Oy; Nordic Ren-Gas Oy
INNOVFUND	Grey2Green-II	Sines Refinery Transformation from Grey to Green Hydrogen – Phase II: 200 MW by 2028	InnovFund-2023-AUC-RFNBO-Hydrogen	2023	€ 84,227,910	Ongoing	Portugal	GALP
INNOVFUND	HYSENCIA	Large-scale solar to RFNBO hydrogen production plant in Aragón, Spain, for industrial and mobility applications	InnovFund-2023-AUC-RFNBO-Hydrogen	2023	€ 8,104,918	Ongoing	Spain	Angus Enterprise SL
INNOVFUND	MP2X	MadoquaPower2X	InnovFund-2023-AUC-RFNBO-Hydrogen	2023	€ 245,178,772	Ongoing	Portugal	Madoqua
INNOVFUND	SKIGA	Skipavika Green Ammonia	InnovFund-2023-AUC-RFNBO-Hydrogen	2023	€ 81,317,443	Ongoing	Norway	Fuella As; Skiga

Figure 5 - List of funded European projects in the 1st EHB auction[8]

In addition, the EU-Money Map presentation offers information about the upcoming funding round, highlighting objectives, budget, and timeline of the second EHB auction (Figure 6) and more.

This example shows how the data and the presentations offer complementary information. This provides Hydrogen Europe's members with a thorough overview, helping European project developers correctly assessing the policy announcements.

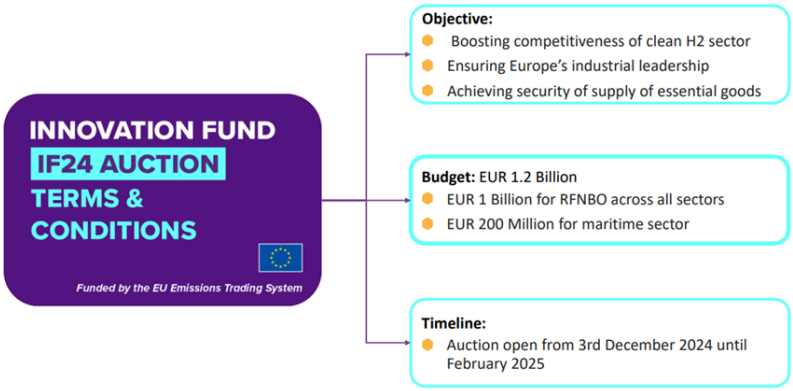


Figure 6 - Overview of 2nd EHB auction[9]

Leveraging H2Corner for strategic insights

As highlighted by the example of the CID's announced calls 2025, the H2Corner provides analyses for Hydrogen Europe members to stay updated on European and national funding developments.

With the announcement of the CID, new funding streams were introduced, also focusing on the hydrogen offtake sector. In the end, the success of the IDB will depend on whether the full EUR 100 billion materializes. Hydrogen Europe remains cautious about the reliance of the IDB on repurposed funds and voluntary contributions.

By Olivia Staudenmayer,
Funding Analyst, Hydrogen Europe

8 / Hydrogen Europe, H2Corner, H2 EU Funding and finance tool, EU Money Map.
9 / Hydrogen Europe, H2Corner, H2 EU Funding and finance tool, EU Money Map.

WE HEARD YOU.

You spoke, we heard you, we took action.

The European Hydrogen Week, Europe's leading hydrogen event is coming into 2025 with some big news.
We are happy to announce that from this year, the week of all-things hydrogen will be split into two bi-annual events, alternating every year.

European Hydrogen Week 2025

Conference

European Hydrogen Week 2026

Expo+Conference

We look forward to welcoming you to the **2025 European Hydrogen Week Conference edition** - the reshaped version of the event that is coming with more: more content, more high-level discussions, more networking and more collaborations.

Let's dive into the hydrogen world by creating connections, establishing synergies, forging partnerships, and exchanging on all things hydrogen. Be part of the European Hydrogen Week Conference 2025, taking place in Brussels from **29 September to 3 October.**

And don't forget about next year: preparations for the **2026 European Hydrogen Week Expo+Conference edition** are already in the oven. In 2026, we will be back at Brussels Expo with all our booths, as well as our different conference stages. Stay tuned for more!

SAVE THE DATE

29 September - 03 October 2025
The Square
Brussels, Belgium
euhydrogenweek.eu

Events Overview

1. H2 TALK: FROM HYPE TO PIPE: HOW HYDROGEN VALLEYS DRIVE THE H2 ECONOMY

Monday 24 March

15:00-16:30 CET, ONLINE

CLICK HERE TO REGISTER >>

EVENT DESCRIPTION:

European hydrogen valleys are a key component of the global energy and climate transition. They are projects comprising geographic areas, where several applications are combined into an integrated hydrogen ecosystem covering the entire value chain with significant consumption of hydrogen across multiple end-uses.

In Europe, hydrogen valleys are recognised as a fundamental way of demonstrating the viability of hydrogen technologies to improve the sustainability and energy security of regions. The EU supports hydrogen valleys development in Member States as demonstrated by the **Joint Declaration on Hydrogen Valleys** (signed March 2023) as well as the **Staff Working Document "Towards a roadmap for accelerating the deployment of Hydrogen valleys across Europe: challenges and opportunities** (published June 2024). Hydrogen valleys were also highlighted in the report of Mario Draghi on EU's competitiveness, as a successful example of cooperation between public and private sector to accelerate technology development and drive growth in EU regions.

In Europe, parallel to policy action, funding has been allocated on an annual basis via the Clean Hydrogen Partnership to support the build-up of the regional hydrogen ecosystems. Funding was further boosted by an additional EUR 200 million in May 2022 through RePowerEU, with the intention to double their number by 2025. This action is contributing to the objectives of the European Hydrogen Strategy, the EU Green Deal, and the Fit for 55 package to decouple Europe from Russian energy dependency by 2030 and reach climate neutrality of the continent by 2050. To date, more than 20 valleys have been funded from various European funds, with ongoing funding available at least until 2027 and hopefully with continuation in the next Multiannual Financial Framework for 2028 - 2035. However, challenges remain, particularly related to how to secure the commitment of those who use hydrogen for decarbonisation.

On a global scale too, governments are increasing their support to hydrogen ecosystems. The US has made available USD 8 billion for large-scale hydrogen production hubs across the country, while Australia is investing AUD 500 million and South Korea has supported the establishment of three hydrogen hubs.

With this H2Talk Hydrogen Europe aims to highlight the importance of hydrogen valleys and their role in the context of the new economic and political realities, and in line with the Clean Industrial Deal. The discussion will showcase lessons learned from ongoing European and international projects and what the key factors are for their success when preparing a project that will apply hydrogen technologies in real-working environments. We will discuss the importance of funding and how regions all over the globe can work together to address challenges and support the economic sustainability of hydrogen projects. Finally, the webinar aims to assess what actions need to be taken by stakeholders to integrate valleys into the larger European hydrogen market to deliver on the ambitious targets until 2030.

2. HYDROGEN EUROPE SPRING MARKET DRINKS RECEPTION

Thursday 10 April

18:30-21:30 CET, IN-PERSON
COMET LOUISE, PLACE STÉPHANIE 20, 1050, BRUSSELS

CLICK HERE TO REGISTER >>

EVENT DESCRIPTION:

Join us for the Hydrogen Europe Spring Market. This gathering marks the beginning of a year-long series of seasonal markets designed to bring together members and stakeholders of the hydrogen sector. Taking place in the heart of Brussels, this in-person event offers a **unique networking opportunity, fostering collaborations that will shape the future of hydrogen innovation.**

During the evening, come taste the HYDROGIN®, thyssenkrupp nucera's signature drink with a hydrogen-inspired twist!

EXCLUSIVE
TO MEMBERS AND INVITED GUESTS OF HYDROGEN EUROPE

3. H2 TALK: BRIDGING THE FUNDING GAP: DE-RISKING THE H2 GRID AND IMPLEMENTING THE DECARBONIZED GAS & HYDROGEN PACKAGE

Wednesday 16 April

15:00-16:30 CET, ONLINE

CLICK HERE TO REGISTER >>

EVENT DESCRIPTION:

The EU Hydrogen and Gas Decarbonisation Package [1] adopted in May 2024 updates the rules on the EU natural gas market and introduces a new regulatory framework for dedicated hydrogen infrastructure. EU countries have until mid-2026 to transpose it into national law. Once transposed, the revised rules will create a level-playing field for the hydrogen market and infrastructure and remove barriers that hamper their development. However, the rules alone won't suffice to ensure infrastructure deployment: funding remains the main challenge for our sector.

Funding hydrogen infrastructure through traditional regulated tariffs (fees paid by network users) could result in extremely high fees for early users, making hydrogen less affordable and potentially discouraging further demand. To address this issue, the Regulation on hydrogen and decarbonised gas market grants Member States the authority to allow hydrogen network operators to recover infrastructure costs over time through inter-temporal cost allocation mechanisms. This scheme is in use already, for instance in Germany to fund its core grid (Kernnetz). Also, significant funding for infrastructure comes from the Connecting Europe Facility through selection of projects of common interest (PCI).

Still, a significant funding gap remains between the scale of investment required and the availability of risk-mitigation mechanisms. The high upfront costs, long payback periods, demand uncertainty, and misaligned timelines between infrastructure and project development create a challenging investment environment, discouraging private capital from engaging at scale. To unlock investment, effective de-risking strategies must be systematically deployed.

Several risk-sharing tools are being tested to reduce financial exposure for investors and lenders, but their implementation remains limited. Despite the transformational impact these mechanisms could have on attracting private finance, their adoption within the clean hydrogen sector at the EU level remains rare.

This chapter of the H2 talk series will explore how to mobilise financial instruments necessary to finance hydrogen infrastructure. We will explore various financing mechanisms put forward by the European Union and its members states to facilitate investment decisions by providing public money and therewith de-risking projects, while analysing the gap that still exists between the needs for de-risking and current schemes.

Our panel will bring together high-level experts and decision-makers to discuss the needs stemming from the implementation of the Gas & H2 Package, the challenges in terms of finding the right tools for financing infrastructure deployment – that fit the needs of projects located in different countries and geographies, with local specificities and requirements.

[1] Consisting of Directive (EU) 2024/1788 and Regulation (EU) 2024/1789

4. MEET THE CANDIDATES

Monday 16 June

10:00-13:00 CET, ONLINE

MEMBERS ONLY AREA >>

EVENT DESCRIPTION:

To streamline the General Assembly meeting scheduled for Tuesday, 24 June 2025, a webinar will take place on Monday, 16 June, for candidates to introduce themselves. Please note that participation in this event is exclusive to members of Hydrogen Europe.

More information regarding the agenda, **registration link and next steps will be shared with members on Members Only Area closer to the day.**

5. HYDROGEN EUROPE GENERAL ASSEMBLY

Tuesday 24 June

14:00-17:00 CET, HYBRID
AVENUE MARNIX 23, 1000, BRUSSELS

MEMBERS ONLY AREA >>

EVENT DESCRIPTION:

Hydrogen Europe General Assembly takes place twice per year and the next one will be in a hybrid format, allowing our members to join online or in Brussels. Please note that participation in this event is exclusive to members of Hydrogen Europe.

More information regarding the agenda, **registration link and next steps will be shared with members on Members Only Area closer to the day.**

6. HYDROGEN EUROPE SUMMER MARKET DRINKS RECEPTION

Tuesday 24 June

18:30-21:30 CET, IN-PERSON
ROOFTOP 58, RUE DE L'ÉVÊQUE 1, 1000 BRUSSELS

CLICK HERE TO REGISTER >>

EVENT DESCRIPTION:

Join us at the Hydrogen Europe Summer Market Drinks Reception that will take place in Brussels. Our invitees will have the opportunity to come together with members and stakeholders of the hydrogen sector, in a **vibrant networking atmosphere.** It is a great opportunity with good food and drinks, set in a beautiful Summer Market ambiance! Kindy note that this event is reserved for the Hydrogen Europe Members and invited guests.

During the evening, come taste the HYDROGIN®, thyssenkrupp nucera's signature drink with a hydrogen-inspired twist!

EXCLUSIVE
TO MEMBERS AND INVITED GUESTS OF HYDROGEN EUROPE

A warm welcome to all our new Hydrogen Europe members

INDUSTRY CORPORATE MEMBERS:

CATAGEN Limited

CATAGEN provides patented green emissions testing services to global automotive manufacturers. Its expertise in the mobility sector and global emissions standards has led the company to develop ClimaHtech - net zero technologies including: Biohydrogen Reactors, E-Fuel reactors (SAF and e-diesel) and Hydrogen Compression to clean and decarbonise the air.

CONTACT
info@catagen.com

Celeroton TurboCell AG

Celeroton TurboCell is a Swiss based technology leader developing and manufacturing ultra-high-speed electric turbo compressors and drive systems for fuel cell applications. Our state-of-the-art products are used in a broad range of applications including material handling, heavy duty, stationary and maritime.

CONTACT
info@celeroton-turbocell.com

Danfoss Drives Oy

Danfoss engineers solutions increase machine productivity, reduce emissions, lower energy consumption, and enable electrification. Our solutions are used in such areas as refrigeration, air conditioning, heating, power conversion, motor control, industrial machinery, automotive, marine, and off-and on-highway equipment. We also provide solutions for renewable energy and district-energy infrastructures.

CONTACT
danfoss.fi@danfoss.com

ENERTRAG SE

ENERTRAG has been advancing the energy transition for over 25 years. Our more than 1,200 employees design, build and operate integrated power plants. We yearly generate 2,000 gigawatt hours of electricity from the wind and sun and have been producing green hydrogen since 2011. We are developing 3 GW electrolysis capacity worldwide.

CONTACT
enertrag@enertrag.com

Europlan Engineering Services Limited

Established in 1977, Dublin-based Europlan Group offers engineering design, project management, procurement, and health and safety consultancy services. With a global presence, they specialize in commercial, industrial, oil and gas, and power sectors, leveraging extensive experience in global energy projects to provide trusted expertise and sustainable solutions.

CONTACT
Info@europlanservices.com

Hyppo Hydrogen Solutions Ltd

Hyppo hydrogen solutions was established in the UK in 2022 and is recognised as a leader in the UK's emerging green hydrogen economy. Hyppo is building the demand side of the hydrogen value chain through transport and remote power services that utilise hydrogen powered equipment and hydrogen as a fuel.

CONTACT
info@hyppo.co.uk

Navalprogetti S.r.l.

Navalprogetti Srl, based in Trieste, Italy, is a ship design company specialized in naval architecture, marine and industrial engineering and ship surveying. Established in the early 1970s, it offers comprehensive services for marine and offshore industries, including vessel design, conversion, and technical support in R&D projects involving hydrogen and ammonia since 2018.

CONTACT
info@navalprogetti.net

Quanto Nano RnD d.o.o.

Quanto Nano is an innovative nanotechnology company with proprietary technology and large patent portfolio, developing cutting-edge solutions with a focus on clean energy and material science breakthroughs. Our flagship QNCR catalyst reactant enables efficient on demand hydrogen production, underlining our commitment for advancing Europe's green transition and hydrogen economy.

CONTACT
info@quanto-nano.com

See Hydrogen Ltd

See Hydrogen Ltd. is a Bulgarian start-up aiming to build a hydrogen ecosystem for road transport along Eastern Europe's TEN-T corridors, focusing on trucks. Bringing together experts from various fields, we drive hydrogen innovation to accelerate clean energy adoption. Our mission is to establish a hydrogen backbone in Southeast Europe, addressing local decarbonization challenges while facilitating a corridor between Turkey and Central/Western Europe. Currently, we are developing a Hydrogen Innovation Development & Training Regional Center, serving as the core for deploying this hydrogen corridor.

CONTACT
blagoy.burdin@seehydrogen.com

SHS – Stahl Holding Saar GmbH & Co. KGaA

SHS – Stahl-Holding-Saar is an operational management holding company with around 13,000 employees. As Germany's third largest steel producer, its companies produce around 5 million tons of steel that is ready for shipment. It actively performs tasks for the two major steel companies in Saarland, Aktien-Gesellschaft der Dillinger Hüttenwerke (Dillinger) and Saarstahl AG. In December 2023, the EU Commission approved the funding of the common decarbonisation project Power4Steel by Dillinger, Saarstahl and the joint subsidiary ROGESA Roheisengesellschaft Saar mbH in the amount of 2.6 billion euros by the federal and state governments.

CONTACT
info@stahl-holding-saar.de

Supercritical Solutions Ltd

Supercritical is revolutionising green hydrogen with the world's first high-pressure, ultra-efficient electrolyser. Delivering hydrogen at 220+ bar with 42kWh/kgH2 efficiency, we cut costs and overcome industry barriers. Our scalable, PFAS-free technology targets hydrogen under £1/kgH2 this decade, accelerating the transition from grey to green energy for a zero-emission future.

CONTACT
contact@supercriticaltech.com

NON-INDUSTRY CORPORATE MEMBERS:

Spilett new technologies GmbH

Spilett specializes in consulting for renewable energy, hydrogen, fuel cells, electromobility, and climate protection. Services include project development, financing, implementation, and evaluation. We also offer tailored software development, social transformation design, and educational materials to engage stakeholders and the public effectively.

CONTACT
info@spilett.de

GLOBAL PARTNERS:

EVOLOH

At EVOLOH, we enable access to low-cost hydrogen for GW-scale projects worldwide. Our high-throughput manufacturing leverages advanced techniques, local supply chains, and commodity materials like steel and plastic. By eliminating reliance on rare earths and reducing production costs, we provide scalable, sustainable solutions to meet the growing demand for renewable hydrogen.

CONTACT
noa.kerner@evoloh.com

PROGRAMME MEMBERS:

ArianeGroup GmbH

Grâce aux lanceurs de la famille Ariane, ArianeGroup dispose d'un savoir-faire unique dans le domaine de la conception, de la production, des tests et de l'exploitation des systèmes propulsifs à hydrogène liquide. Nous en faisons aujourd'hui bénéficier d'autres secteurs industriels engagés dans la transition énergétique, comme celui du transport aéronautique, maritime, ferroviaire, fluvial ou routier.

CONTACT
digitalcom@ariane.group

F6S EU TECH INNOVATION NETWORK DESIGNATED ACTIVITY COMPANY

F6S will unlock Hydrogen Europe access to global innovators. F6S is a leading network/platform for growth in the commercial, corporate, government, university and other innovation spaces, helping thousands of such initiatives worldwide. We help the right startups, SMEs, researchers, innovators and founders connect with these opportunities to increase impact.

CONTACT
nuno@f6s.com

Hydrolite Ltd.

HYDROLITE Ltd. is a start-up company focusing on novel hydrogen technologies for energy storage and conversion based on its proprietary, world-leading alkaline exchange membrane (AEM) electrode and stack technology. Featuring high-efficiency power-to-hydrogen (Electrolyzer) and hydrogen-to-power (Fuel Cell) devices, HYDROLITE's disruptive AEM technology reduces costs and delivers high performance and versatility.

CONTACT
ervin.tal-gutelmacher@hydrolite-h2.com

Institute Materials for Electronics and Energy Technology, FAU

The Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU) with 40,000 students is closely linked to the Helmholtz Institute Erlangen-Nürnberg, the Max Planck Institute for the Science of Light as well as two Fraunhofer institutes located in Erlangen. The group of Prof. Brabec at FAU has long standing experience in solution processable organic semiconductor technologies.

CONTACT
i-MEET@ww.uni-erlangen.de

National University of Science and Technology POLITEHNICA Bucharest

University POLITEHNICA Bucharest trains specialists in different domains that can use valuable scientific and technical knowledge, contributing to the progress of the Romanian society and the contemporary world. POLITEHNICA ensures a performant education, developed and perfected through a complex research activity, according to the exigencies of the modern information society.

CONTACT
cabinet.rector@upb.ro

PROACT INDUSTRIAL SAFETY CONSULTANTS PC

PROACT offers specialized consulting focused on Process and Machinery Safety as well as Industrial Support. We have conducted numerous industrial safety studies for a lot of leading companies in various sectors including cement, oil & gas, food, pharmaceutical, chemicals, metallurgical etc. in Greece, Cyprus, Turkey, the Balkans and the U.A.E.

CONTACT
info@proact.gr

ProPuls GmbH

The SME ProPuls GmbH is an engineering office specializing in energy systems. Its core expertise lies in the development and automation of energy plants, including electrical power, heating, cooling, and hydrogen systems. Additionally, ProPuls designs and manufactures PEM and AEM water electrolysis stacks and systems for high-pressure hydrogen production.

CONTACT
sales@propuls.de

EUROPEAN REGIONAL MEMBERS:

Université de Technologie de Belfort-Montbéliard

UTBM is a public higher education and research institution located in the towns of Belfort, Sévenans, and Montbéliard in France. UTBM has a scientific, cultural, and objective and is a member of a group of Universities of Technology. UTBM develops research activities in cohesion with the industrial environment, focusing on land transport and energy, with a focus on hydrogen energy and other alternative energy sources.

CONTACT
direction@utbm.fr

Université Libre de Bruxelles

The Aero-Thermo-Mechanics department of Université Libre de Bruxelles conducts various research topics on thermal-fluid systems for aeronautical, aerospace and energy applications. In this latter field, along the BRITE consortium, ATM aims at contributing to a clean, fair and smooth energy transition.

CONTACT
polytech@ulb.be

Job Market

Hydrogen & Cleantech Business Developer

Esade Entrepreneurship Institute

Full Time, Spain, Barcelona

16-03-2025

This position is part of an exciting European project focusing on the development of clean hydrogen solutions and long-term sustainable business models. It also aims to foster high-growth, impactful energy and climate businesses by offering a community-driven environment that encourages collaboration and innovation among students, alumni, and external entrepreneurs. Joining Esade means becoming part of a dynamic team dedicated to groundbreaking research, innovation, and entrepreneurship support.

MAIN RESPONSIBILITIES:

- Cleantech Business Model Development: lead and manage Esade's participation in the European project, focused on analyzing and developing of new business models in the energy sector.
- Energy and Climatech startup program management: oversee and execute a variety of supporting activities (including incubation and acceleration) of new ventures in the energy and Climatech field.
- Contribute and lead the organization and dissemination of activities and events.

MORE INFO: https://hydrogeneurope.eu/job-market/hydrogen-cleantech-business-developer/

Personal Assistant

Hydrogen Europe

Full Time, Brussels

31-03-2025

MAIN RESPONSIBILITIES:

- Support the c-level management (2 people) with the organization of their agenda, including scheduling meetings, appointments, and travel arrangements.
- Manage executives' calendars, including scheduling meetings, appointments, and travel arrangements.
- Prepare and organize documents, reports, and presentations for meetings.
- Handle confidential information with a high level of professionalism and discretion.
- Act as a point of contact between executives and internal/external stakeholders.
- Assist in coordinating and executing company events and projects.
- Conduct research and prepare summaries to support decision-making.
- Monitor and manage email correspondence, responding on behalf of executives when appropriate.
- Perform general administrative duties, including expense tracking and office management tasks.
- Support the organization of travel requests and accommodation for the whole team

MORE INFO: https://hydrogeneurope.eu/job-market/personal-assistant/

Communications Intern

Hydrogen Europe

Full Time, Brussels

31-03-2025

MAIN RESPONSIBILITIES:

- Supporting the work of the Communications team,
- Supporting the delivery of communications and marketing activities related to the EU Hydrogen Week event,
- Support in the preparation of presentations for meetings and in drafting reports,
- Support in the management and production of content for social media campaigns and newsletters,
- Updating and maintaining websites,
- Together with the other team members, come up with fresh, innovative ideas for both formats and contents of communication tools,
- Ad hoc support of the Hydrogen Europe Team.

MORE INFO: https://hydrogeneurope.eu/job-market/communications-intern-2/

Researcher in the Development of Electrolyzers and Fuel Cells

Eurecat

Full Time, Spain, Barcelona, Mataró

30-04-2025

The Functional Printing & Embedded Devices Unit develops innovative solutions based on functional materials and devices.

This Unit has the knowledge and experience to contribute from research concepts to prototyping and manufacturing. The Unit can cover the entire TRL chain, from the conceptualization of the idea to prototype validation, including design, proof of concept, material analysis, processes, prototyping, and characterization.

The specialization areas of the Unit include the formulation of functional inks, printing and coating processes for lightweight and flexible devices, their characterization, and in terms of electronics, the design, development, and manufacturing of conventional PCB electronics and hybrid electronics. The teams is looking for a researcher to support the Energy Devices line.

The candidate will carry out tasks within projects related to the development of printed devices, specifically membrane-electrode assembly (MEA) for fuel cells and electrolyzers applied to hydrogen production and utilization. In particular, the tasks include:

MAIN RESPONSIBILITIES:

- Review of the state of the art.
- Design and prototyping of devices.
- Processing of membranes and catalysts, as well as material printing using screen printing and spray coating.
- Physicochemical characterization of materials (electrical, electrochemical, optical, and morphological characterization techniques, etc.).
- Assembly, simulation, and characterization of electrolyzer and/or fuel cell units.
- Analysis and presentation of results, and preparation of technical reports.

MORE INFO: https://hydrogeneurope.eu/job-market/researcher-in-the-development-of-electrolyzers-and-fuel-cells/

NOT YET A MEMBER?

Join us with the attached QR code

#10

THE HYDROGEN EUROPE QUARTERLY