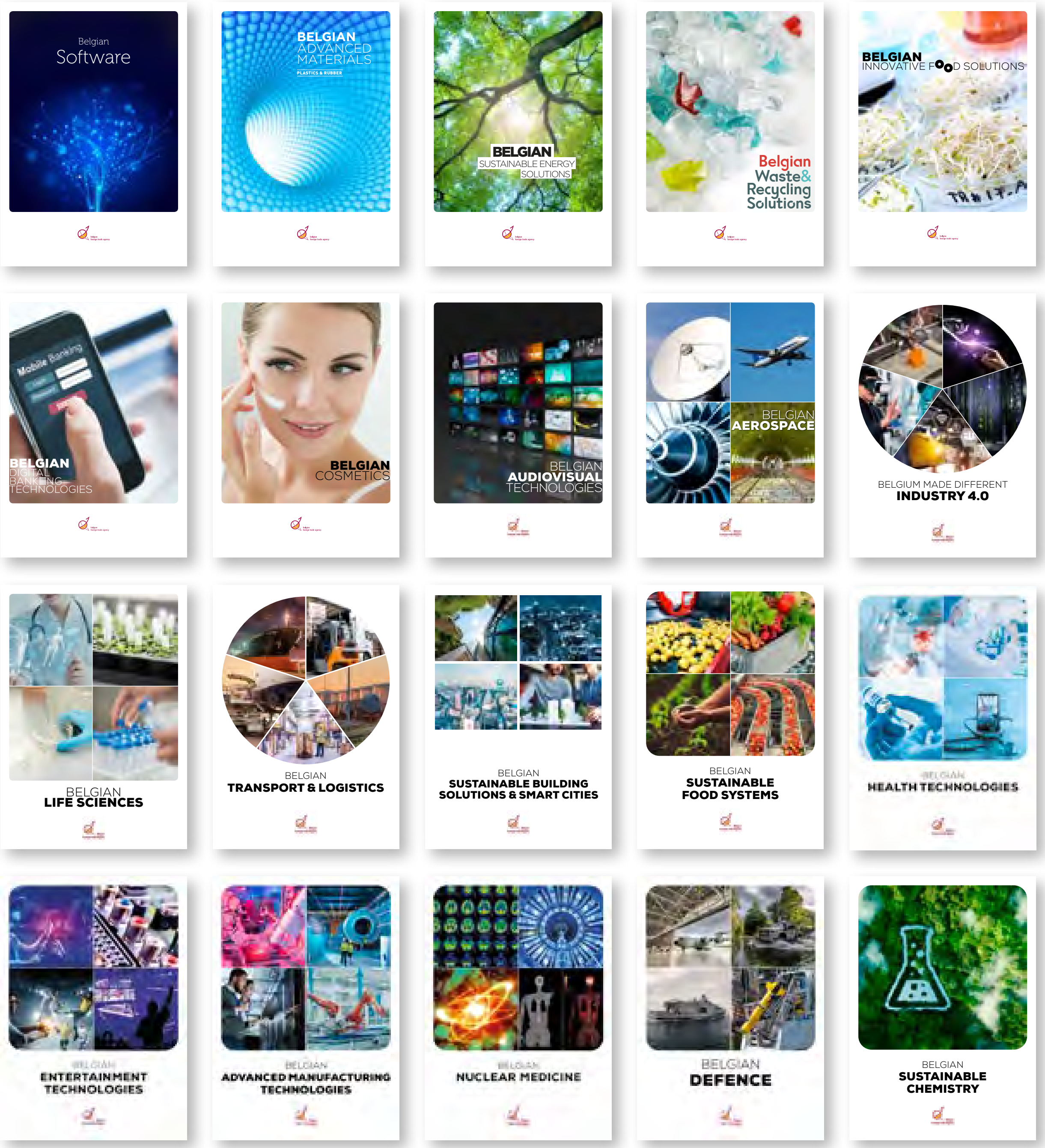
BELGIAN

CLEAN HYDROGEN

Belgian Foreign Trade Agency



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PRESENTATION OF THE SECTOR

THE SECTOR OF HYDROGEN

1. Hydrogen in the energy transition

Over the past decade, climate change has increasingly influenced energy policy, with governments adopting measures aimed at reducing greenhouse gas emissions while also addressing energy security and industrial competitiveness. The Paris Climate Agreement of 2015 was followed by policy frameworks such as the European Green Deal and the United States' Inflation Reduction Act, which together have shaped the direction of the global energy transition.

Hydrogen (H_2) has gained importance in this context because it provides an option for decarbonising sectors where electrification alone is technically or economically limited. These sectors include heavy industry, high temperature production processes, long distance transport, maritime shipping, aviation, and long duration energy storage. During the COVID era, hydrogen was widely presented as a key solution for hard-to-abate sectors, and while the initial hype has faded, it continues to attract attention as a necessary part of the decarbonisation toolbox.

Hydrogen is not emerging as a stand-alone solution but rather as a complementary component within a broader energy transition. Its role is closely linked to the expansion of renewable electricity and the need to integrate fluctuating renewable energy sources into reliable industrial and energy systems. For instance, hydrogen can absorb excess renewable power, provide seasonal storage, and replace fossil based feedstocks in chemical and refining processes. It also enables the production of renewable fuels for sectors such as shipping and aviation, where direct electrification remains challenging.

To understand hydrogen's role in the energy transition, it is essential to clarify what hydrogen actually is and how it is produced and transported. Unlike fossil fuels, hydrogen is not a primary energy source that is readily available in nature (but recent developments see 4.3.2). Although hydrogen is the most abundant element in the universe, on Earth it occurs only in very small quantities as natural hydrogen. It therefore has to be produced from other substances using energy inputs, after which it can be stored, transported and converted for end use. The way hydrogen is produced largely determines its climate impact, while its physical properties strongly influence how it can be moved across long distances. These characteristics explain why hydrogen production pathways, hydrogen carriers such as ammonia, and related terminology play a central role in current policy, industrial and infrastructure discussions (European Clean Hydrogen Observatory, n.d.).

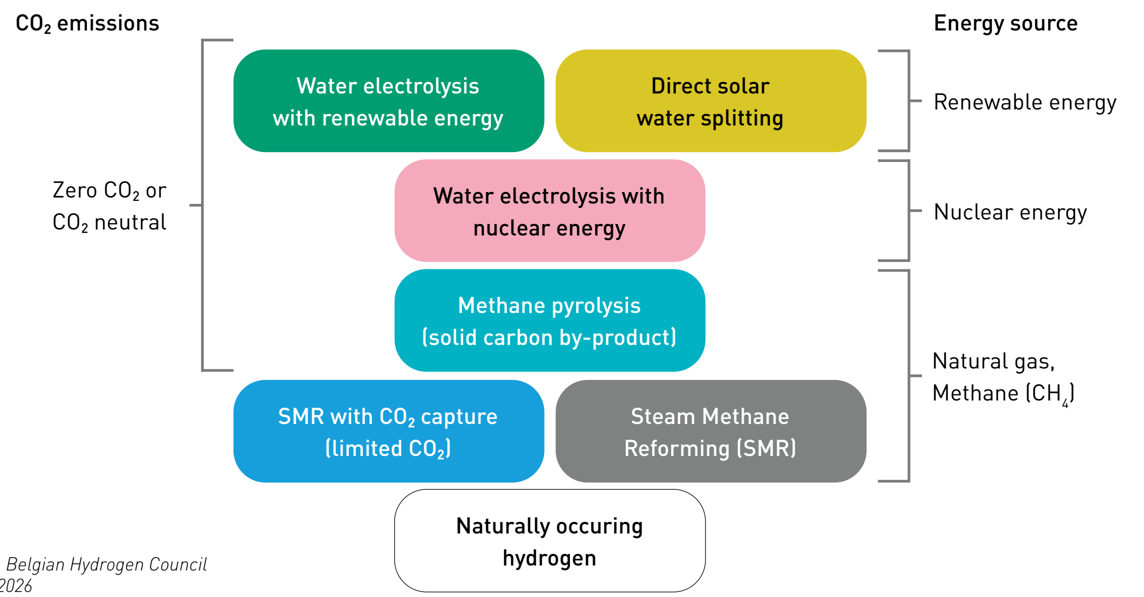
Table 1: Overview of (clean) Hydrogen in the energy system

Aspect	Key elements
Role & applications	Decarbonisation tool in industry including feedstock and high-temperature processes, use in heavy-duty transport such as trucks, shipping and aviation, limited role in power and buildings
System function	Energy carrier enabling storage of renewable electricity, supporting grid balancing, system flexibility and integration of variable renewables, while also serving as a key reactant for the production of synthetic fuels.
Production	Electrolysis based on renewable electricity, alongside other production pathways depending on the energy source (cf. Figure 1)
Storage & transport	Compressed gas and liquid hydrogen, storage in metal hydrides, use of chemical carriers such as ammonia and LOHCs, transport via pipelines (large-scale), delivery by tube trailers (fueling stations or industry)
Advantages	No direct CO_2 emissions at use, enables decarbonisation of hard-to-abate sectors, allows long-term storage and long-distance transport, supports energy security and circular processes
Challenges	Production costs, infrastructure requirements, energy losses during conversion, complexity of storage and transport, safety considerations, regulatory uncertainty and market acceptance
System position	Complementary to electrification, prioritised where direct electrification is not feasible

Source: Adapted from International Energy Agency (2019, 2024) & European Commission (2020)

Hydrogen is commonly classified according to its production pathway and associated greenhouse gas emissions. In policy and industry discussions, colour terminology is often used as a shorthand to distinguish between these pathways, although the colours themselves are not scientific definitions.

Figure 1: Hydrogen production pathways with their energy source, CO_2 emissions and corresponding colour



Source: Belgian Hydrogen Council (BHC), 2026

1.1 Clean hydrogen

Clean hydrogen refers to hydrogen produced with low greenhouse gas emissions over its full life cycle and includes both renewable and low-carbon hydrogen that meet defined emission thresholds. European and Belgian strategies focus on clean hydrogen rather than exclusively on green hydrogen due to the scale and timing of the transition. While renewable hydrogen remains the long-term objective, its availability is constrained by renewable capacity and infrastructure. For energy-intensive industries, an immediate shift to fully renewable hydrogen is often not feasible without impacting competitiveness.

As a result, the European Union defines clean hydrogen based on life-cycle emissions rather than production pathways. According to this view, developing the hydrogen economy does not rely on a single "colour", but on multiple low-emission pathways advancing in parallel, enabling early emissions reductions while supporting the gradual expansion of renewable hydrogen (Hydrogen Council, 2021).

1.2 Power-to-X

Power-to-X (PtX) refers to the conversion of renewable electricity from sources such as wind, solar, hydro or geothermal energy into hydrogen and other end products. Where electricity can be used directly, for example in buildings, rail or battery-electric mobility, direct electrification remains the preferred decarbonisation route. PtX becomes relevant when molecules are needed, either for energy storage or for applications where direct electrification is not feasible.

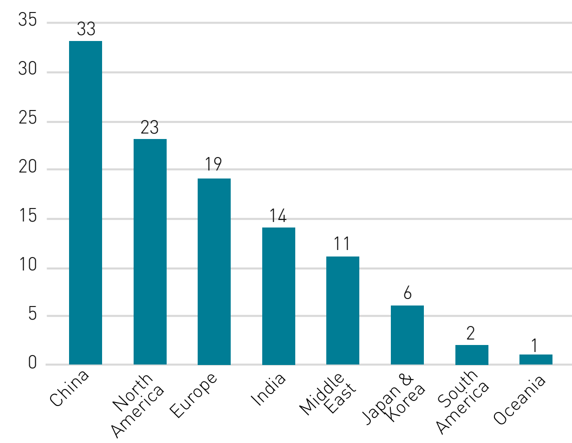
Electrolysis splits water into hydrogen and oxygen, producing hydrogen that can be used directly as an energy carrier or be further converted into derivatives. PtX therefore links renewable electricity to industrial feedstocks, transport fuels and energy storage. Hydrogen acts as the central "base molecule" in this system, enabling sector coupling by connecting the electricity sector with industry, transport and heat. In some cases, this enables decarbonisation by replacing carbon altogether, while in others it supports defossilisation by substituting fossil carbon with renewable or recycled carbon sources. Combined with nitrogen, it can be transformed into ammonia, which is relevant for fertilisers, chemicals and maritime fuels. Combined with renewable or non-fossil carbon, it can be converted into synthetic hydrocarbons such as methanol or aviation fuels (PtL-SAF) (Int. PtX Hub, 2026).

2. International hydrogen landscape

Achieving a viable global clean hydrogen economy will require unprecedented scale, coordination and international engagement. According to H2Global (2025a), investments of around USD 9 trillion will be needed by 2050 to enable the full take off of clean hydrogen worldwide, while around 69 million tonnes of clean hydrogen will already be required by 2030 to stay on track with the Paris climate goals. To help bridge the gap between production costs and market demand, international public support is beginning to mobilise, with more than USD 6 billion committed to the H2Global mechanism as of 2024. This momentum is reinforced by growing global engagement: 19 countries are involved with H2Global at various stages, ranging from concrete implementation efforts to knowledge sharing, with Belgium among the countries currently in active discussions to make use of the H2Global mechanism.

According to the Global Hydrogen Compass of the Hydrogen Council (2025), total committed investment in clean hydrogen now stands at around USD 110 billion. This represents an increase of approximately USD 35 billion since 2024, with average annual growth exceeding 50% since 2020. China and the United States together account for approximately 50% of this committed investment. Out of a global clean hydrogen pipeline of more than 1,700 projects, 510 projects are considered committed. This means they have either reached final investment decision, started construction, or entered operation.

Graph 1: Committed clean hydrogen investment by region (by 2030) in billion USD, in 2025



Source: Hydrogen Council, 2025

China's leading position is driven by the rapid scale-up of domestic electrolysis capacity. At around 19 GW (1.6 mtpa), China's renewable hydrogen capacity corresponds to roughly 55% of the global total. This expansion is closely aligned with strong central policy coordination, combined with a clear industrial focus on cost reduction and the development of domestic demand. In **North America**, approximately 2.2 mtpa of low-carbon hydrogen capacity has reached final investment decision, representing around 85% of the global total.

Europe ranks behind China and North America in terms of committed investment, with project momentum shaped primarily by regulatory frameworks rather than inherent cost advantages. Long-term demand is being driven by EU-wide climate and energy legislation, particularly in emissions-intensive sectors, providing a degree of visibility for future hydrogen uptake. At the same time, Europe's ability to translate this expected demand into operational capacity remains contingent on the timely and uniform application of agreed policies across Member States.

In **India** and the **Middle East**, clean hydrogen investment is being shaped by distinct but complementary models centred on cost efficiency and export potential. India's commitments are largely directed towards ammonia production, reflecting the strategic importance of the fertiliser sector. This direction is further reinforced by competitive outcomes from government-supported auctions. While this positions the country as a potential exporter over the longer term, near-term demand is expected to remain primarily domestic as part of efforts to reduce import dependence. Unlike other regions, the Middle East is developing hydrogen production at scale with a clear export focus. Of the 0.5 mtpa in committed capacity, a slight majority is renewable, with the remainder based on low-carbon pathways. Benefiting from low-cost renewable resources, with natural gas providing an additional low-carbon pathway, the region achieves highly competitive production costs. Investment is primarily driven by diversification strategies and rising European demand. (Hydrogen Council, 2025).

3. European hydrogen policy

Hydrogen in the European Union is not governed by a single, standalone law but instead regulated across multiple policy domains such as climate, energy, transport and industrial policy. This reflects the fact that hydrogen is intended to address several structural challenges at once: decarbonising hard-to-abate sectors, supporting industrial competitiveness and enhancing energy security.

Table 2: EU policy frameworks

Policy framework	Role in hydrogen development
European Green Deal	Sets the overall direction by anchoring climate neutrality by 2050 and positioning hydrogen as a key solution where electrification is not sufficient
Fit for 55	Translates this vision into binding legislation aligned with a 55% emissions reduction by 2030, shaping demand through sectoral targets and market rules
REPowerEU	Accelerates hydrogen deployment in response to energy security concerns, linking it to re- duced dependence on imported fossil fuels and increasing targets for renewable hydrogen
Clean Industrial Deal	Frames hydrogen within industrial competitiveness, aiming to decarbonise while preserving industrial capacity and limiting carbon leakage
Net-Zero Industry Act (NZIA)	Strengthens the manufacturing dimension by supporting clean technology deployment through a regulatory framework, streamlining permitting for electrolysers and fuel cells.

Source: European Commission, n.d.-a

3.1 Delegated acts on renewable and low-carbon hydrogen

On the production side, the EU hydrogen framework is built around certification rules designed to ensure environmental integrity, such as CertifHy, the EU's Guarantee of Origin system for hydrogen. Legal certainty for renewable hydrogen is provided through two Delegated Acts adopted in June 2023. Together, they define the conditions under which hydrogen, hydrogen-based fuels and other energy carriers qualify as Renewable Fuels of Non-Biological Origin (RFNBO)s, while the other sets out the methodology for calculating their life-cycle greenhouse gas emissions. Within this framework, a minimum greenhouse gas emission saving threshold of 70% is set, with emissions calculated across the full value chain, including electricity sourcing, processing and transport.

In addition to the framework for renewable hydrogen, the EU has also introduced rules for low-carbon hydrogen under the Gas and Hydrogen Market Directive (EU) 2024/1788. Low-carbon hydrogen is defined as hydrogen that achieves significant greenhouse gas emissions savings compared to fossil fuels. The Delegated Act on low-carbon hydrogen clarifies how these emissions savings must be calculated across the full life cycle, including upstream emissions, indirect effects and carbon capture performance. The methodology is aligned with the rules already established for renewable hydrogen, ensuring consistency across categories. The 70% emissions savings threshold applies to blue hydrogen produced with carbon capture, low-carbon electrolytic hydrogen using grid electricity, and hydrogen produced through methane pyrolysis (European Parliamentary Research Service, 2025).

3.2 Hydrogen consumption through binding demand

On the demand side, hydrogen uptake in the EU is driven primarily by binding regulatory targets rather than short-term market competitiveness. RED III raises the EU-wide renewable energy target to 42.5% by 2030 and introduces hydrogen-specific obligations, notably requiring that 42% of hydrogen used in industry must come from RFNBOs by 2030, increasing to 60% by 2035. In transport, renewable hydrogen-based fuels can contribute to meeting sectoral renewable energy targets, with RFNBOs required to account for at least 1% of total energy supplied to transport by 2030. This target can be met through the direct use of hydrogen in transport applications, as well as through the integration of hydrogen in fossil fuel refining processes.

Table 3: FuelEU maritime quotas (decline of greenhouse gas intensity)

-2%	2025
-6%	2030
-14.5%	2035
-31%	2040
-62%	2045
-80%	2050

Table 4: Aviation, SAF quotas (increased share of SAF)

2%	2025
70%	2050

Table 5: Aviation, synthetic fuels sub-target (increased share of sub-target)

1,2%	2030
35%	2050

Source: European Commission, n.d.-b

Sector-specific legislation also drives additional demand, with specific quota requirements outlined in Tables 3, 4 and 5. Under FuelEU Maritime, a declining greenhouse gas intensity limit is introduced for marine fuels used by ships calling at EU ports. ReFuelEU Aviation introduces a requirement to increase the share of sustainable aviation fuels, including a sub-target for synthetic fuels produced from renewable hydrogen.

Together, all these instruments are estimated to generate regulatory demand of up to 2.8 million tonnes of RFNBO hydrogen per year by 2030. In doing so, hydrogen consumption becomes anchored within the EU legal framework, providing long-term demand visibility for producers and investors. (Hydrogen Europe, 2025).

Table 6: Indirect policy drivers for clean hydrogen in the EU

Policy	*Type of Instrument*	*Market Segments Impacted*	*Specific Targets*
EU ETS	Cap and trade of emission allowances	Industry (refineries, steel, cement, glass, ce- ramics, pulp & paper, bulk organic chemicals), heat & power, aviation, maritime (2024), road transport & buildings (2024)	Accelerated yearly reduc- tion of cap, extension of ETS system to shipping and to road transport & buildings
CBAM	Carbon price on imports	Cement, steel, aluminum, fertilizer, carbon-in- tensive electricity	Carbon price on imports of targeted sectors, post-2026: extension to additional sectors
CO_2 emission performance standards	Limit on average emissions of new vehicles	Passenger cars and light commercial vehicles, heavy duty vehicles	Mandatory targets on aver- age CO_2 emissions of new EU fleet: -30/35% in 2030, proposed: -55% in 2030 and -100% in 2035

Source: Hydrogen Europe, 2025

The instruments in table 6 do not directly target the hydrogen sector, but they play an important role in shaping its development. By putting a price on carbon emissions and tightening emission standards, policies such as the EU ETS, CBAM and CO_2 emission performance standards increase the cost of carbon-intensive activities. This, in turn, creates strong market incentives for cleaner alternatives. As a result, renewable and low-carbon solutions such as hydrogen become more attractive, particularly in hard-to-abate sectors like industry and heavy transport.

3.3 Hydrogen infrastructure and markets

Strategic infrastructure planning is anchored in the revised Trans-European Networks for Energy (TEN-E), which explicitly integrates hydrogen pipelines, storage facilities and related infrastructure into EU-wide energy planning. Under TEN-E, cross-border hydrogen projects can be designated as Projects of Common Interest (PCI) or, where they involve third countries, as Projects of Mutual Interest (PMI). PCI status is reserved for projects that deliver clear European added value by involving at least two Member States. PMIs extend this logic to infrastructure connecting the EU with non-EU countries, provided that partner countries demonstrate a high degree of regulatory convergence with EU energy policy. For hydrogen, only transmission networks and associated infrastructure are eligible, underscoring the strategic importance of cross-border connectivity.

As of December 2025, the European Commission had granted PCI or PMI status to 235 cross-border energy projects, including around 100 hydrogen related projects. These designations trigger priority permitting procedures at national level and grant eligibility for EU financial support under the Connecting Europe Facility (CEF). According to Commission estimates, investment needs in European electricity, hydrogen and CO_2 infrastructure are expected to approach €1.5 trillion between 2024 and 2040. The current PCI and PMI portfolio contributes directly to meeting these long-term system requirements (European Commission, 2025a).

The European Hydrogen Backbone (EHB) is an industry-led initiative developed by a group of European energy infrastructure operators, proposing a dedicated hydrogen transport network across Europe. Unlike TEN-E, it is not a regulatory framework but a strategic vision that maps how hydrogen infrastructure could evolve, largely by repurposing existing gas pipelines and complementing them with new builds where necessary. Fluxys Belgium is one of the 33 partners (EHB, n.d).

Transport-related hydrogen infrastructure deployment is made legally binding through the Alternative Fuel Infrastructure Regulation (AFIR). By 2030, hydrogen refuelling stations must be installed in all urban nodes and at least every 200 kilometres along the Trans-European Network for Transport (TEN-T) core network, which defines the EU's strategic transport corridors and nodes. While TEN-T establishes where priority transport infrastructure should be developed, AFIR translates this network into binding obligations for alternative-fuel deployment. These obligations are supported by EU-level funding, including €189 million allocated under the Alternative Fuels Infrastructure Facility (AFIF), corresponding to approximately 63 hydrogen refuelling stations across the Union.

As of mid-2025, Belgium has 8 publicly accessible hydrogen refuelling stations (HRS), with 9 more in development (2 upgrades and 7 new builds), mainly for heavy-duty vehicle fleets. Further rollout will be needed to meet AFIR targets by 2030 (BHC, 2026).

3.4 Hydrogen financing

Hydrogen deployment in the EU is supported by a layered financing framework designed to address high upfront capital costs, operating cost gaps and persistent market uncertainty. At its core is the Innovation Fund, financed through revenues from the EU Emissions Trading System and representing one of the world's largest funding programmes for innovative net-zero technologies, with an estimated budget of around €40 billion for the period 2020–2030. Within this framework, clean hydrogen support is increasingly delivered through competitive auctions operated under the pillar of the European Hydrogen Bank, aligning public funding with verified production rather than upfront expenditure. The launch of the Hydrogen Mechanism under the European Hydrogen Bank in 2025 is intended to mobilise and connect off-takers and suppliers, facilitate demand aggregation and link market participants with financing and de-risking instruments (European Commission, n.d.).

This auction-based approach is complemented by the "Auctions-as-a-Service" mechanism, which allows Member States to allocate national funding via the EU-level auction platform to projects that meet Innovation Fund criteria but cannot be financed due to budgetary constraints. Project implementation and compliance are overseen by the European Climate, Infrastructure and Environment Executive Agency (CINEA), which accompanies projects through development, financial close and construction (CINEA, 2026).

Beyond auctions, large-scale cross-border investments are supported through Important Projects of Common European Interest (IPCEIs) on hydrogen. As of November 2024, the four hydrogen IPCEIs comprise 113 active projects across 16 Member States, as well as two projects in Norway, although ten projects have withdrawn. Together, these IPCEIs represent one of the largest coordinated public support frameworks for clean hydrogen globally, with €18.9 billion in approved state aid expected to trigger approximately €24.7 billion in private investment.

IPCEI Hy2Tech	IPCEI Hy2Use	IPCEI H2Infra	IPCEI Hy2Move
Novel technologies	Boosting supply & enabling first deployment	Production & infrastructure	Mobility & transport

Belgium has formally approved and participates in IPCEI **Hy2Tech**, IPCEI Hy2Use, and IPCEI **Hy2Move.**

IPCEI Hy2Tech is structured around four technological pillars: 1) hydrogen generation technologies, 2) fuel cell technologies, 3) storage, transportation and distribution technologies, and 4) end-user applications. Within this framework, Belgium is active in the hydrogen generation technology segment through Cummins and John Cockerill.

IPCEI Hy2Use focuses on two chains: hydrogen infrastructure and hydrogen applications in industry, and Belgium participates in both. Fluxys is active in hydrogen infrastructure, TECforLime contributes to hydrogen applications in industry, and ENGIE Belgium is involved across both value chains.

IPCEI Hy2Move features a Belgian company Breuer Technical Development (BTD) as associated partner.

Source: European Commission, 2025b

The European Clean Hydrogen Alliance (ECH2A) was launched in July 2020 as a key action under the EU Hydrogen Strategy, with the objective of mobilising investment and accelerating the deployment of clean hydrogen across the value chain. The Alliance was designed as an industrial coordination platform, bringing together industry, Member States and financial actors to structure a credible project pipeline. While it initially idntified around 840 potential projects, a revised assessment in early 2024 streamlined the portfolio to just over 420 projects, of which 77 had reached final investment decision by mid-December 2024.

Through the Recovery and Resilience Facility (RRF), at least €13.6 billion has been earmarked for hydrogen-related investments across 19 Member States. Embedded in national Recovery and Resilience Plans, these measures span the full value chain, from renewable hydrogen production and infrastructure development to storage and industrial applications. Beyond direct recovery funding, EU State aid frameworks provide Member States with additional flexibility to support hydrogen deployment (European Commission, 2025b).

Table 7: EU state aid frameworks related to hydrogen

Framework	Purpose for hydrogen
CEEAG (Climate, Environmental Protection and Energy Aid Guidelines)	Enables support for renewable hydrogen production and use, with over €11 billion already approved
TCTF (Temporary Crisis and Transition Framework)	Allows rapid support for renewable energy projects and domestic manufacturing of net-zero technologies, including electrolysers
GBER (General Block Exemption Regulation)	Simplifies approval procedures for State aid, including support for hydrogen and clean energy projects
R&D&I Framework (research, development and innovation)	Supports research, development and innovation in hydrogen technologies and related clean energy solutions

Source: European Commission, 2025b

3.5 EU Hydrogen Valleys

Hydrogen Valleys were elevated in the REPowerEU Plan as a strategic instrument to accelerate the expansion of Europe's hydrogen economy. Their added value lies in their systemic design: rather than supporting isolated production sites or end-use applications, they integrate renewable hydrogen generation, storage, distribution infrastructure and diversified demand within a defined regional perimeter. This integrated configuration enables the development of complete regional hydrogen value chains (European Clean Hydrogen Partnership, n.d.).

From a deployment perspective, Hydrogen Valleys address one of the main structural challenges of hydrogen markets: aligning production, infrastructure and demand at the same time. By bringing these elements together within one region, they reduce coordination problems, lower investment risk and make projects more predictable for investors. This helps move hydrogen beyond isolated pilot projects and provides practical experience that can improve future regulation and market design. In that sense, Hydrogen Valleys form a bridge between early demonstrations and fully developed hydrogen markets in Europe.

4. Belgian hydrogen landscape

The Belgian hydrogen landscape is evolving within an energy transition whose driving forces have clearly shifted in recent years. In an initial phase, hydrogen was primarily put forward as a key technology within climate policy. Ambitious European targets and a strong policy focus created a significant momentum, positioning hydrogen as an essential solution for the decarbonisation of sectors that are difficult to electrify.

At the same time, this development has been confronted with economic reality. As energy prices partially stabilised following the peaks of 2022, the cost competitiveness of hydrogen came into sharper focus. For many industrial applications, the business case has so far remained limited, resulting in a slower-than-expected uptake in effective demand. If European regulation is fully implemented and the set targets are effectively realised, demand for hydrogen is expected to increase significantly, exceeding current supply levels by a wide margin. This points to a structural need for large-scale imports, in addition to domestic production. This delay, however, does not imply stagnation. On the contrary, considerable progress has been made across the entire value chain in recent years. Technologies continue to advance, costs are gradually declining, and both infrastructure projects and industrial applications are becoming increasingly concrete. This has led to a growing maturity of the hydrogen ecosystem, with the foundations for large-scale deployment now significantly stronger than just a few years ago.

More recently, geopolitical developments in the Middle East once again highlight the vulnerability of international energy supply. Price volatility and disruptions in supply routes reinforce the awareness that energy security and strategic autonomy have become central policy priorities once again. In this context, hydrogen is acquiring a broader strategic relevance. In addition to its role in the decarbonisation of industry and transport, it is increasingly seen as a lever for energy independence and system resilience. Its ability to store, transport and diversify energy makes hydrogen a key component of a future energy system that is less exposed to external shocks.

The current energy consumption of Belgium is still largely based on molecules, and will remain so to a significant extent. Electrification will continue to expand, but cannot cover all applications. The future energy architecture will therefore be based on a complementary system in which electrons and molecules evolve alongside each other. Within this system, hydrogen will act as the "base" molecule, serving as a platform from which a wide range of applications and value chains can be developed. The development of a clean hydrogen economy is therefore a gradual process in which supply and demand evolve in interaction, supported by increasing maturity in technology, infrastructure and market organisation.

Strategic strengths of Belgium

Belgium benefits from a unique combination of structural strengths that position it as a key player in the emerging clean hydrogen economy. Its strategic location at the heart of North-West Europe, combined with strong cross-border integration, places the country at the centre of major industrial and energy networks. Located along the shortest routes between the North Sea and major industrial regions such as the Ruhr area and Luxembourg, Belgium is closely connected to European demand centres. Belgium is home to four major seaports, including the port Antwerp-Bruges, Europe's North Sea Port (Ghent), and the port of Oostende. Within this port system, Belgium also hosts the second-largest integrated chemical cluster in the world, providing a significant and immediate source of industrial demand for hydrogen.

In addition, Belgium possesses a highly developed and interconnected gas network that can be partly repurposed for hydrogen. Alongside this, the country has an existing network of around 600 km of private hydrogen pipelines in operation, further complemented by the development of an open-access hydrogen backbone.

Table 8: Top 3 R&D intensity (% of GDP) in the EU, in 2024

Sweden	3.57%
Belgium	3.36%
Austria	3.26%

Belgium is classified as a "Strong Innovator" in the European Innovation Scoreboard, ranking sixth among EU Member States in 2025. It also ranks among the top performers in terms of R&D intensity, placing second in the European Union in 2024.

Source: EIS, 2025

Belgium also benefits from advanced logistics capabilities and multimodal transport networks, supported by the presence of navigable waterways and a dense highway network. In addition, access to the North Sea and a growing offshore renewable energy capacity create opportunities for the production of green hydrogen in Flanders. Furthermore, Wallonia is home to leading players in electrolyser technologies, reinforcing Belgium's position in key segments of the hydrogen value chain. The presence of European institutions in Brussels, and the close proximity to EU decision-making, further strengthens its ability to align with and help shape the regulatory and policy framework of the hydrogen market. Belgium has also demonstrated its commitment to advancing the international trade of hydrogen and its derivatives, notably during its presidency of the Council of the European Union in 2024.

4.1 Belgian policy

4.1.1 Federal hydrogen strategy

Building on these structural strengths, the Belgian federal hydrogen strategy provides a coherent approach aimed at both decarbonisation and economic positioning. The strategy was first adopted in 2021 and further updated in 2022. It is grounded in two key realities, with electrification remaining the priority wherever technically and economically feasible. At the same time, Belgium will continue to rely on the import of molecules due to its limited domestic renewable energy potential in the short term and energy-intensive industrial base. The strategy places a strong emphasis on the development of hydrogen infrastructure and international networks. Against this backdrop, the strategy is structured around four pillars.

The first pillar focuses on positioning Belgium as an import and transit hub for renewable hydrogen and its derivatives in North-West Europe, leveraging its ports and central location to facilitate international energy flows. The second pillar aims to strengthen Belgium's technological and industrial ecosystem, supporting innovation, research and the scaling up of hydrogen applications. The third pillar seeks to develop a well-functioning hydrogen market, where demand creation, infrastructure and regulation come together to enable investments and facilitate transactions. The fourth pillar emphasises the importance of cooperation, both internally between federal and regional authorities and externally with European and international partners, in order to accelerate the deployment of the hydrogen value chain (Federal hydrogen strategy, 2022).

Figure 2: The role of hydrogen and its derivatives in Belgium

Role of H2 or its derivatives	Industry	Transport	Power	Buildings
Important and necessary lever for decarbonization (*Main use today*)	– Feedstock in (petro-) chemicals and refining – Reducing agent in steelmaking	– Bunkering fuel for ocean shipping – Fuel for international aviation		
Possibly interesting lever for decarbonization	– Fuel for industrial heating (high-to-mid temperatures)	– Fuel for heavy-duty vehicles – Non-electrified (freight) rail vehicles – Short-distance shipping & aviation	– Long-term / seasonal electricity storage – Firm and back-up power generation	– Heating where HP / DH is challenging – Small back-up generators
Sub-optimal path for decarbonization	– Fuel for industrial heating (low-to-mid temperatures)	– Electrified and passenger rail – Light-duty vehicles and passenger cars – 2- and 3-wheelers		– Heating where HP / DH is feasible
Policy implications	*Prioritize H2's role as feedstock and for high temperature industrial heating*	*Assess case by case, fuel for ocean shipping and international aviation first*	*Assess different options going forward (incl. H2 turbines, ammonia)*	*Non-priority, be very selective in where to use H2 vs. alternatives*

Notes : HP = Heat pump; DH = District heating

Source: Federal hydrogen strategy & Boston Consulting group, 2022

The strategy covers four main sectors, it identifies industry and heavy-duty mobility as the primary areas where clean hydrogen can play a meaningful role in decarbonisation. The strategy explicitly prioritises hydrogen use in sectors where alternatives are limited, while recommending a selective and case-by-case approach in other applications. In contrast, its use in buildings and power generation is currently not considered a priority, as alternative solutions such as electrification are generally more efficient and cost-effective in these segments.

The federal Hydrogen Law

A key step in the implementation of this approach is the adoption of a dedicated regulatory framework for hydrogen infrastructure. The federal Hydrogen Law, published in July of 2023, establishes the foundations for a transparent and well-functioning hydrogen transport system in Belgium. It ensures non-discriminatory access to the hydrogen transmission network, defines the procedures for the development of network plans and regulated tariffs, and designates the Commission for Electricity and Gas Regulation (CREG) as the competent regulatory authority. The law also provides for the appointment of a single national hydrogen network operator, responsible for the management of the transmission infrastructure. In April 2024, this role was assigned to Fluxys hydrogen, a subsidiary of Fluxys (Belgium, 2023).

4.1.2 Regional policies

Wallonia

The Walloon hydrogen strategy (2024) is structured around three strategic objectives for 2030, aimed at establishing Wallonia as a fully integrated hydrogen valley. These focus on aligning hydrogen supply and demand, strengthening the regional ecosystem for hydrogen technologies, and developing the necessary skills base. In this way, hydrogen is positioned as a decarbonisation tool, a driver of industrial development and workforce transformation.

These priorities are translated into ten operational objectives, with a strong emphasis on creating the conditions for a well-functioning hydrogen market. The approach includes identifying priority uses, establishing a regulatory framework, deploying support mechanisms, and developing infrastructure and import capacity. The remaining objectives focus on research, industrial valorisation and skills development, supporting the broader ambition to position Wallonia within emerging hydrogen value chains (Service public de Wallonie, 2024).

Flanders

The Flemish hydrogen vision (2020) is structured around five pillars: strengthening the research base, reinforcing the industrial ecosystem, stimulating the uptake of hydrogen technologies, promoting internationalisation, and supporting the sector through flanking policy measures. These pillars aim to develop a coherent hydrogen ecosystem across the full value chain (Vlaamse Regering, 2020).

The vision is further developed through initiatives such as the Waterstof Industrie Cluster (WIC), which contributes to translating these priorities into more concrete actions and projects. Alongside the federal Hydrogen Law, Flanders has developed a Hydrogen Decree addressing elements of hydrogen transport and distribution at regional level. The respective competences of the different governance levels are being further clarified in this context. In the 2024–2029 coalition agreement, the Flemish Government reaffirmed its commitment to hydrogen, including the intention to update the existing vision.

4.2 Belgian hydrogen ecosystem

While national and regional hydrogen strategies define the direction of travel, their implementation increasingly relies on a set of coordination platforms that structure collaboration across regions and translate policy ambitions into concrete projects.

At regional level, dedicated cluster organisations play a central role in structuring the ecosystem and function as key knowledge centres within the Belgian hydrogen landscape. In Flanders, WaterstofNet coordinates the Waterstof Industrie Cluster (WIC), bringing together actors across the full value chain. In Wallonia, Cluster TWEED performs a similar role through H2Hub Wallonia, which maps ongoing initiatives and supports the development of hydrogen projects within a broader energy transition framework. By consolidating expertise, facilitating knowledge exchange and connecting stakeholders, both platforms contribute to aligning industrial needs, research capabilities and public support mechanisms. Building on their regional roles, WaterstofNet and Cluster TWEED jointly established the Belgian Hydrogen Council in 2023, creating a national platform for alignment across the hydrogen value chain.

The Belgian Hydrogen Council adds a distinct dimension to this landscape by operating as a national, industry-driven coordination platform. Unlike government-led initiatives, it is steered by the hydrogen industry itself. In doing so, the Council represents the Belgian hydrogen ecosystem in national and international fora, while also advising policymakers on the implementation of federal and regional hydrogen strategies. This positioning allows it to bridge institutional levels and ensure that policy development remains closely aligned with industrial realities. A more detailed overview of the activities and initiatives of these organisations is provided in Chapter 3: Stakeholders.

BHC International cooperation

In the framework of the Belgian Economic Mission to India, the Belgian Hydrogen Council, together with Flanders Investment & Trade and GH2 India, signed a memorandum of understanding (MoU) to connect their respective hydrogen ecosystems. The agreement provides a basis for cooperation on innovation, trade and stakeholder engagement, including joint initiatives and exchanges on technology and policy. It reflects the complementarity between India's ambition to become a major exporter of renewable hydrogen and Belgium's role as an entry point for hydrogen into Europe.

In addition to the agreement with GH2 India, the Belgian Hydrogen Council has also concluded memoranda of understanding with several key international partners. These include collaborations with neighbouring European hydrogen associations such as NL Hydrogen, Nationaler Wasserstoffrat in Germany and France Hydrogène, as well as partnerships with hydrogen orchestrators in future export countries, including Oman, Brazil and Chile (Belgian Hydrogen Council, 2025).

4.3 Belgian hydrogen market development

4.3.1 Hydrogen demand

In 2024, hydrogen consumption in Europe reached approximately 7.8 million tonnes, a level broadly unchanged compared to 2023. In Belgium, demand follows a similar pattern, driven primarily by industrial applications. It remains heavily concentrated in traditional uses, particularly in refining and the chemical sector. More than 95% of European hydrogen is produced via steam methane reforming, while clean hydrogen currently accounts for only around 1.1% of installed production capacity (Hydrogen Europe, 2025).

The development of clean hydrogen is currently constrained by a structural imbalance between production costs and market demand. While costs are expected to decrease over time through economies of scale and efficiency improvements, they remain significantly higher than those of fossil or grey energy alternatives. Regulatory frameworks such as carbon pricing, taxes and quotas are likely to gradually increase the willingness to pay for cleaner solutions. Despite this, the market is hindered by the absence of long term, cost covering offtake agreements, preventing many projects from reaching a Final Investment Decision. This results in a circular challenge: cost reductions depend on scale, yet scale cannot be achieved without secured demand. On the demand side, willingness to pay a green premium remains limited in the absence of strong regulatory incentives, while the lack of supply security at competitive prices further restricts uptake. Together, these factors continue to delay the large scale deployment of clean fuels. This dynamic is commonly referred to by H2Global as the "offtake conundrum" (H2Global, 2025b).

Policy and regulatory frameworks at European level are expected to play a decisive role in stimulating demand for low carbon and renewable hydrogen. As previously outlined (see 3.2), demand side regulation is becoming an increasingly important driver in this context. In Belgium, possible steps are already being considered, including the introduction of RFNBO quotas in road transport starting at 1% in 2028 and rising to 4% by 2030. A multiplier mechanism would apply, effectively lowering the target, while a significant share could be met through hydrogen use in refineries. More broadly, the timely and full implementation of RED III will be essential to provide clarity and ensure a stable regulatory framework that can underpin demand growth. The Federal hydrogen strategy (2022) estimates that total domestic demand for both hydrogen molecules and hydrogen derivatives in Belgium could reach between 125 and 200 TWh per year by 2050, including bunker fuels.

4.3.2 Hydrogen production

At policy level, Belgium has not defined a specific target for clean hydrogen production in its Federal hydrogen strategy. However, more concrete ambitions are outlined in the National Recovery and Resilience Plan, which sets a target of at least 0.15 GW of electrolysis capacity to be operational by 2026. Looking further ahead, recent analysis by the IEA (2025) suggests that, if all announced projects are realised, Belgium could reach an electrolytic hydrogen production capacity of around 0.1 Mt, or 100,000 tonnes, per year by 2030.

- **Renewable hydrogen production (electrolysis)**

Renewable hydrogen production in Belgium is primarily based on electrolysis, using electricity to split water into hydrogen and oxygen. The carbon intensity of this pathway depends directly on the electricity mix, making access to renewable energy a key determinant of its sustainability. Belgium hosts a number of technologies across different stages of maturity, including alkaline and PEM electrolysers. Notably, John Cockerill positions itself as a global leader in pressurised alkaline electrolysers, reinforcing Belgium's technological capabilities in this segment.

HyOffwind (Zeebrugge)

- **Partners:** Virya Energy · HyoffGreen · Messer Group
- **Pioneering project**
- **Electrolyser capacity:** 25 MW, with potential expansion to 100 MW
- **Production:** ~3,700 tonnes H_2 per year
- **CO_2 reduction:** ~25,000 tonnes annually
- **First commercial H2 production:** September 2026

Located in the port of Zeebrugge, the project benefits from proximity to offshore wind capacity and existing energy infrastructure. It is designed to link renewable electricity production with industrial demand and mobility applications, and is expected to connect to the emerging European hydrogen network.

Vallhyège (Engis, Liège)

- **Partners:** Colruyt Group · Virya Energy · John Cockerill
- **Wallonia's first green hydrogen production unit**
- **Electrolyser capacity:** 15 MW, expandable to 25 MW
- **Production:** 1,500 tonnes H_2 per year

The project combines production with local end use, notably in logistics and heavy-duty transport. Hydrogen will be supplied to infrastructure at Trilogiport, as well as refuelling stations operated by DATS24, with potential extension to Liège Airport and aims to transform Wallonia into a "hydrogen valley."

Source: (Virya Energy, n.d.)

- **Hydrogen as a by-product**

A second pathway consists of hydrogen produced as a by-product of industrial processes, most notably chlor-alkali electrolysis in the chemical industry. In this case, hydrogen is generated alongside chlorine, meaning that output is determined by demand for the primary products rather than for hydrogen itself. The carbon intensity depends on the electricity mix: when powered by renewable electricity, this pathway can provide low-carbon or renewable hydrogen. In Belgium, INEOS, through its INEOS Inovyn subsidiary, is one of the main producers of by-product hydrogen and a major operator of chlor-alkali electrolysis in Europe (INEOS, n.d.).

While both electrolysis and co-product hydrogen can contribute to low-carbon supply, their expansion in Belgium is subject to structural constraints. Renewable energy remains limited and is often prioritised for direct electrification, where it delivers higher efficiency gains. In addition, relatively low renewable yields and high land scarcity contribute to higher production costs compared to other regions. These constraints are compounded by a high concentration of energy-intensive, hard-to-abate industries, which place significant pressure on available clean energy resources. Therefore, alternative production pathways are being explored to enable larger volumes of low-carbon hydrogen.

- **SMR/ATR with CCS**

A third pathway consists of producing hydrogen from natural gas combined with carbon capture and storage (CCS). This approach builds on established reforming technologies, such as steam methane reforming (SMR) or auto-thermal reforming (ATR), while capturing the majority of associated CO_2 emissions.

Belgium–Norway CO_2 storage agreement (Belgian state visit, 26 March 2026)

Belgium and Norway signed an agreement on Thursday 26 March 2026 to develop a cross-border CO_2 transport and storage chain. The project foresees the transport of captured CO_2 from Zeebrugge to storage sites on the Norwegian Continental Shelf, with a pipeline potentially operational by 2031.

The onshore network will be developed by Fluxys, while offshore transport and storage will be managed by Equinor. The agreement reinforces Belgium's role as a regional hub for CO_2 aggregation and reflects the growing importance of CCS infrastructure in supporting industrial decarbonisation (Belga News Agency, 2025).

Compared to electrolysis, this pathway enables the production of large volumes of hydrogen at relatively lower cost levels, particularly in the short to medium term. Support requirements are generally lower than for renewable hydrogen, with similar emission reductions indicating to be achievable at roughly one-third to one-quarter of the support. It also benefits from existing gas infrastructure and more stable input costs, which can reduce price volatility.

As carbon prices increase under the EU ETS, the willingness to pay for low-carbon hydrogen among industrial offtakers is expected to rise, thereby improving the economic viability of this pathway and reducing the need for additional public support over time. Beyond hydrogen production itself, this pathway contributes to the development of a parallel CO_2 value chain, including transport and storage infrastructure. At scale, it can therefore play a structuring role in the development of both hydrogen and carbon management systems

H2BE

Large-scale low-carbon hydrogen production with CCS

- **Developers:** ENGIE · Equinor
- **Technology:** Auto-thermal reforming (ATR) + CCS
- **Capacity:** ~1 GW
- **Production:** ~210,000 tonnes H_2/year
- **CO_2 reduction:** ~1.7 Mt CO_2/year
- **Capture rate:** >95%
- **Timeline:** Planned for the early 2030s

System integration:

- CO_2 transport and storage on the Norwegian Continental Shelf
- Cooperation with Fluxys for transport infrastructure
- Substitution of natural gas in industrial applications

Key characteristics:

- Based on mature and scalable technologies
- No reliance on critical raw materials (e.g. rare earths)
- Potential future use of biomethane, enabling further emission reductions

Source: (H2BE, n.d.)

- **Natural (white) hydrogen**

Natural hydrogen was identified in 2023 in the former mining basin of Lorraine, in northeastern France. Being part of the REGALOR 2 research project, which focuses on mapping subsurface gases. More recent assessments in March 2026 indicate that this deposit, estimated at around 34 million tonnes, may extend across national borders into Belgium. The estimated volume corresponds to roughly one third of current global annual hydrogen consumption. In energy terms, this represents approximately 1,120 TWh, equivalent to around 13 to 14 times Belgium's annual electricity consumption. This highlights the potential significance of the find at both European and Belgian level.

Against this backdrop, the Belgian federal government has decided to launch an exploration programme in the south of the country, where similar geological structures are present. A first phase will focus on subsurface mapping, to be carried out by the Geological Survey of Belgium, followed by targeted exploration activities. This process, expected to take two to three years, aims to assess the actual potential on Belgian territory. The possible presence of natural, or so called white hydrogen, is strategically relevant. Unlike industrial hydrogen, it does not require energy intensive production processes, offering the prospect of a local and low carbon energy source. In a context marked by geopolitical uncertainty and the need for industrial decarbonisation, such a resource could contribute to greater energy autonomy and competitiveness.

At the same time, caution remains warranted. These are still geological estimates, and it is unclear to what extent the resource can be technically and economically extracted. Potential environmental impacts, as well as the cross border nature of the reservoir, will also need to be carefully assessed. If confirmed, however, this discovery could enhance Belgium's energy independence by reducing reliance on imported energy sources (Bombaerts, *L'Echo*, 2026).

Linking supply and demand: Hybex

Bridging the structural gap between hydrogen supply and demand requires the development of market mechanisms that reduce uncertainty on both sides of the value chain. In Belgium, this led in 2023 to the launch of the HyBex project, jointly developed by the Port of Antwerp-Bruges, Fluxys and Hinicio, with the support of the federal government. The project was concluded with a final event at the Port House in Antwerp on 15 January 2025, where its main findings and conclusions were presented.

HyBex is designed as a marketplace bringing together producers, consumers, importers and exporters to enable the exchange of hydrogen, certificates and balancing products within a single platform. It combines trading, auction and balancing functionalities, allowing market participants to manage positions, access price signals and respond to system imbalances in real time.

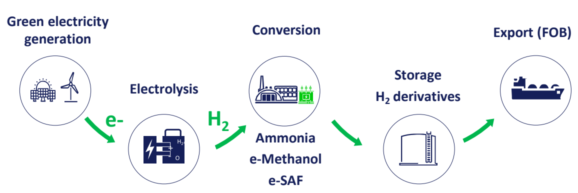
By introducing a structured trading environment, the initiative contributes to price formation, reduces information asymmetries and supports the development of bankable offtake agreements. In doing so, it directly addresses the "offtake conundrum" and facilitates a closer alignment between emerging supply and future demand (Port of Antwerp-Bruges, 2025).

4.3.3 Import of hydrogen and its derivatives

Given the limited availability of renewable energy and the high cost of domestic production, Belgium is expected to rely heavily on imports of renewable hydrogen and its derivatives to meet future demand. The Federal hydrogen strategy (2022) estimates that imports could reach around 20 TWh by 2030 and increase to 200–350 TWh by 2050, reflecting the structural gap between domestic supply and projected consumption.

Rather than importing pure hydrogen, most volumes are expected to be transported in the form of hydrogen derivatives, such as ammonia and methanol. These carriers offer higher energy density and are easier to store and transport over long distances, particularly via maritime routes. Upon arrival, they can either be used directly in industrial applications or converted back into hydrogen, depending on end-use requirements.

Figure 3: power-to-x import value chain



Source: De Cuyper, DEME, 2025

Belgium is positioning itself as a gateway for hydrogen imports into North-West Europe, combining maritime terminals with pipeline connections to industrial clusters in Belgium and neighbouring regions. This import strategy is supported by international partnerships and energy diplomacy initiatives, notably with countries offering favourable conditions for large-scale renewable production, including Oman, Morocco and Egypt. Belgian companies are also expanding their activities in hydrogen projects abroad, including in Namibia (see CMB.TECH Chapter 2).

DEME

Hyport Duqm (Oman)

- Electrolyser capacity: up to 1.5 GW
- Renewable capacity: >3 GW
- Production:
  - >180 kt H_2/year
  - >1 Mt green ammonia/year
- Phase 1:
  - 500 MW electrolysis
  - ~60 kt H_2/year
  - ~300 kt ammonia/year

Hyport Gargoub (Egypt)

- Electrolyser capacity: up to 3 GW
- Production:
  - up to 360 kt H_2/year
  - up to 2 Mt green ammonia/year

Hyport Morocco

- Electrolyser capacity: up to 1.5 GW
- Production:
  - up to 170 kt H_2/year

Relevance for Belgium:

- Designed for export of hydrogen derivatives (mainly ammonia) to Europe
- Illustrate the shift towards importing from regions with high renewable potential
- Support Belgium's positioning as a hydrogen gateway for North-West Europe

Source: De Cuyper, DEME, 2025

Belgian state visit to Chile

During the 2025 Belgian state visit to Chile, hydrogen cooperation was further reinforced through strategic agreements involving Brussels-based companies. In particular, Hinicio, a Brussels consultancy supported by hub.brussels, played a notable role in advancing technical and strategic collaboration in the Chilean hydrogen sector. In parallel, Fluxys Chile signed a memorandum of understanding (MoU) with ENAP to explore infrastructure opportunities for hydrogen and its derivatives in the Magallanes region (Fluxys, 2025).

4.3.4 Ports

Ports play a central role in the hydrogen value chain, as they concentrate the key functions required to connect global supply with industrial demand. Given that large-scale renewable hydrogen production is expected to take place outside Europe, ports act as the primary entry points for imported hydrogen and its derivatives. At the same time, they provide the infrastructure needed to store, handle and convert these molecules, for instance through terminals and cracking facilities for ammonia.

Beyond their import function, ports are also major centres of hydrogen consumption, due to the concentration of energy-intensive industries such as chemicals, refining and steel. This proximity between supply infrastructure and industrial demand reduces transport costs and facilitates early market development. In addition, ports are typically connected to extensive multimodal networks, including pipelines, rail and inland waterways, enabling the redistribution of hydrogen to inland demand centres. As such, they operate as both logistical hubs and industrial clusters within the clean hydrogen economy.

The Port of Oostende plays a specialised role as an innovation hub for hydrogen in maritime and offshore applications. Building on its expertise in offshore wind, it supports pilot projects such as green hydrogen bunkering for offshore vessels.

North Sea Port is a cross-border industrial cluster spanning multiple locations across Belgium and the Netherlands. As the largest hydrogen hub in the Benelux, it combines strong industrial demand with access to pipeline corridors, offshore wind landfall and multimodal transport, positioning it as a hub for hydrogen production, import and distribution.

The Port of Antwerp-Bruges, integrating the ports of Antwerp and Zeebrugge, functions as the largest import and distribution platform. It combines large-scale industrial demand with developing infrastructure for hydrogen derivatives, including storage and ammonia cracking, and connects to the European hinterland through extensive logistics networks

Air Liquide: the world's first industrial-scale ammonia cracking pilot unit

Converting imported ammonia into hydrogen

- Type: First industrial-scale ammonia cracking pilot
- Capacity: 30 tonnes of ammonia per day

The unit enables the conversion of ammonia into hydrogen, allowing ammonia to be used as a carrier for long-distance transport. This addresses one of the main constraints of hydrogen trade, namely the difficulty of transporting the molecule over large distances.

The process is based on high-temperature catalytic cracking, combined with heat recovery to improve energy efficiency. The conversion itself generates no direct CO_2 emissions.

By enabling the reconversion of imported ammonia into hydrogen at industrial scale, the project supports the development of international supply chains. It builds on existing global ammonia trade, estimated at around 25 million tonnes per year, and creates a pathway to import hydrogen from regions with more favourable renewable conditions.

Source: (Air Liquide, 2025)

4.3.5 Terminals and storage

The import of hydrogen and its derivatives requires dedicated terminal and storage infrastructure in port areas. Terminals handle the arrival of molecules by ship, while storage allows volumes to be buffered before they are used or transported further inland. Together, they ensure that large quantities can be handled and integrated into existing industrial systems. In practice, terminals for hydrogen derivatives are being developed alongside conversion technologies like ammonia cracking.

Several projects are underway in the Port of Antwerp-Bruges to develop terminal and storage capacity for hydrogen and its derivatives. These include Energy Park Antwerp, where Vopak plans to build storage infrastructure for molecules such as ammonia, liquid hydrogen and CO_2, and a joint initiative by Fluxys and Advario to develop an open-access ammonia import terminal. Another key project is Amplifhy Antwerp, led by VTTI, combines import and conversion through the development of an ammonia terminal and cracker, with hydrogen to be injected into the network (BHC, 2026).

4.3.6 Belgian hydrogen valleys

The developments above illustrate how the different components of the hydrogen value chain are increasingly being integrated within specific geographic areas. In this context, the concept of "hydrogen valleys" has gained importance at European level, referring to regions that bring together the full hydrogen ecosystem, from production and import to storage, distribution and end-use across multiple sectors.

By concentrating infrastructure, industrial demand and innovation within the same location, hydrogen valleys enable economies of scale, reduce transport costs and facilitate coordination between actors. As such, they are considered a key instrument to accelerate the deployment of hydrogen by moving from isolated projects to integrated systems.

FLHyPorts (Flemish Hydrogen Valley)

FLHyPorts brings together the Port of Antwerp-Bruges, North Sea Port and Port of Oostende as a hydrogen valley, covering the full value chain from production and import to storage, distribution and end-use.

Located within a limited geographic area, the three ports are complementary in their activities, combining industrial clusters in steel and chemicals with offshore wind expertise and energy import functions. The region already hosts multiple hydrogen projects, including green hydrogen production (HyOffwind, Terranova Hydrogen) and applications in industry, transport and maritime sectors.

The initiative is coordinated by WaterstofNet through the Waterstof Industrie Cluster, bringing together industrial and research partners, with support from the Flemish government. The project has recently secured European funding as the first recognised hydrogen valley in Flanders.

Source: WaterstofNet, n.d.-a

Green WaHyVe (Walloon Hydrogen Valley)

Green WaHyVe focuses on developing the hydrogen value chain in Wallonia, centred on renewable hydrogen production and its use in mobility and industry. The project builds on the region's strategic location and concentration of industrial activities, with a focus on applications in trucks and inland shipping, alongside potential industrial uses.

The project is led by Cluster TWEED, with partners including Virya Energy and John Cockerill, and supported by the Walloon Region.

It includes a hydrogen production volume of approximately 2,000 tonnes per year, based on water electrolysis using renewable electricity with an alkaline electrolyser. End uses focus on mobility applications, notably trucks and ships.

Source: H2Valleys, n.d.

4.3.7 Infrastructure

The development of a hydrogen economy ultimately depends on the availability of dedicated transport infrastructure capable of connecting production, import and end-use. In Belgium, this is taking shape through the gradual roll-out of an open-access hydrogen backbone, designed to link industrial clusters, ports and neighbouring markets. Belgium already has an existing network of around 600 km of private hydrogen pipelines in operation.

Table 9: phase 1 of the hydrogen backbone under construction

Project location	Network length (km)
Antwerp	~15
Connection Ghent – Antwerp	~37
Total	**~52**

A first phase of this network entered construction in March 2025, focusing on the Antwerp port area and the connection between Antwerp and Ghent. This initial corridor consists entirely of new-built pipelines and forms the backbone of the emerging hydrogen system. The network connects key industrial zones on both sides of the Scheldt, linked through a crossing under the river. The dedicated pipeline between Ghent and Antwerp, running via Zelzate, Kallo and Lillo, is designed to meet both short- and long-term industrial demand, with a transport capacity of up to 3 GWh/h.

Looking ahead, the network will be further expanded in phases and integrated into the wider European hydrogen system. Current plans foresee development along three main axes: a connection between the Liège industrial cluster and the German border, the expansion of the network around the Antwerp and Ghent port areas including interconnections with the Netherlands, and a link between Antwerp and Liège enabling further connections to Germany. In addition, cross-border interconnections with France are also envisaged[1].

1 This analysis is based on the indicative network development plan for the first ten-year period (2025–2034). All figures and tables included in Section 4.3.7 are reproduced or adapted from this source (Fluxys Belgium, 2025).

Table 10: Further phases of the hydrogen backbone

Axis	Project scope	Network length (km)	Target COD
Axis 1	Liège – German border connection	~34	2029
Axis 2	Ghent network expansion & connections	~28	2032+
Axis 2	Antwerp network expansion & connections	~8	2028–2032
Axis 2	Ghent – NL border interconnection	~4	2032
Axis 2	Antwerp – NL border interconnection	~11	2030
Axis 3	Antwerp – Liège connection	~180	2032
Total		~265	

Figure 5: future vision for the Belgian hydrogen network

Source: Fluxys Belgium, 202

The development and operation of this infrastructure is entrusted to Fluxys, a Brussels-based midstream international infrastructure group. Its subsidiary, Fluxys hydrogen, has been designated as Hydrogen Network Operator (HNO). This role includes not only the construction and management of the network, but also the coordination of market consultations. As further illustrated in Chapter 2, Fluxys plays a central role in connecting supply and demand across the evolving hydrogen system.

4.3.8 Hydrogen research

Research institutes and universities play a key role in supporting the development of the hydrogen ecosystem in Belgium, particularly through innovation, applied research and skills development. While a broad range of research organisations and clusters are discussed in Chapter 3: stakeholders, universities represent a distinct group of actors, contributing fundamental research and training the next generation of engineers and experts. The main academic institutions active in hydrogen-related research are listed in table 11.

Table 11: Universities involved with hydrogen research

- VUB (Brussels)
- ULB (Brussels)
- UMONS
- Liège University
- Université de Namur
- UCLouvain
- KU Leuven
- Ghent University
- UHasselt
- University of Antwerp
- VIVES University of Applied Sciences

Source: BHC, 2026

4.3.9 Technology

Belgium has developed into a recognised hub for hydrogen technologies, supported by a strong industrial base and advanced engineering capabilities. Across the value chain, a wide range of technologies are present, covering both upstream and downstream segments of the hydrogen economy.

These include hydrogen production technologies such as large-scale electrolysis and key enabling components, such as PTL's for electrolyser systems. The ecosystem also encompasses engineering and system integration capabilities for hydrogen and Power-to-X projects, as well as specialised expertise in techno-economic analysis, design and project optimisation.

Added to this, Belgium hosts technologies related to storage and handling of hydrogen and its derivatives, including large-scale multi-molecule infrastructure. Capabilities extend to hydrogen-based propulsion systems, including dual-fuel engines and combustion technologies, as well as testing and validation facilities for hydrogen applications across mobility and industrial use. The specific activities and technologies of 12 companies are discussed in more detail in Chapter 2.

H2WIN

H2WIN is developing enzyme-based catalysts as an alternative to platinum for use in fuel cells. Produced through fermentation, these catalysts offer a more sustainable approach and reduce reliance on critical raw materials.

The technology aims to replace conventional platinum-based catalysts in hydrogen systems, contributing to cost reduction and more environmentally friendly production processes.

Source: H2WIN, SOLHYD & Smart Hub Vlaams-Brabant, n.d.

Syensqo

Syensqo develops advanced materials that are used in key hydrogen technologies, including electrolysers and fuel cells. Its portfolio includes high-performance polymers and ionomers applied in membranes, electrode components and system elements across hydrogen installations.

These materials improve efficiency, durability and safety, while reducing the overall cost of hydrogen systems. By supplying critical components embedded throughout hydrogen technologies, from core cell materials to balance-of-plant applications,Syensqo supports the scalability and industrial deployment of clean hydrogen solutions globally.

Solhyd

A novel approach to hydrogen production combines photovoltaic systems with on-site hydrogen generation, converting water vapour from ambient air into hydrogen using sunlight. The technology operates without external water supply, grid connection or large-scale infrastructure, enabling decentralised and modular production.

A first project is being deployed in Wallonia within a 2 MW solar park, initially integrating around 50 kW of hydrogen capacity, with plans to scale up to MW level. Under Belgian conditions, production reaches around 15 tonnes of hydrogen per MW per year. By complementing conventional electrolysis, this approach offers added flexibility for solar projects, particularly in locations with limited grid access. The technology is supported by regional initiatives, including funding from POM Vlaams-Brabant to accelerate its industrialisation.

Solhyd is also involved in a partnership in Namibia, illustrating how Belgian innovation can be deployed in a development context. The project aims to provide renewable energy solutions to up to 100,000 families annually by 2030, reinforcing Belgium's role as both a technology developer and development partner.

4.4 Paths to 2050

Looking ahead to 2050, Belgium's energy system is expected to undergo a profound transformation. Driven by rising electricity demand, decarbonisation objectives and the need to strengthen energy security. Electricity consumption is projected to more than double, increasing from around 80 TWh in 2025 to between 155 and 170 TWh by 2050. Meeting this demand will require a significant expansion of both generation capacity and supporting infrastructure (EnergyVille, 2025).

Within this transition, the North Sea is emerging as a central pillar of Belgium's future energy system. Offshore wind, in particular, is expected to play a decisive role, with capacity expanding towards its near-full potential. Offshore wind also benefits from significantly higher capacity factors compared to other renewable sources, due to more consistent and stronger wind conditions at sea. On average, offshore wind farms operate at around 57% of their capacity, compared to approximately 32.5% for onshore wind and around 13% for solar PV. At the same time, cooperation in the North Sea region is intensifying. Through initiatives such as the Ostend Declaration, countries bordering the North Sea have committed to a joint expansion of offshore wind capacity to 120 GW by 2030 and 300 GW by 2050 (IEA, 2025).

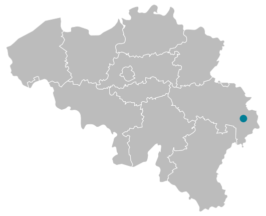
However, the large-scale integration of intermittent renewable energy introduces new system challenges. As offshore wind capacity expands, periods of excess electricity generation are expected to become more frequent, particularly during times of high wind output combined with low demand. This leads to increasing instances of curtailment, where renewable generation is temporarily reduced due to grid constraints or negative electricity prices. Such dynamics not only affect system efficiency, but also the economic viability and lifetime of renewable assets. By converting surplus renewable electricity into hydrogen through electrolysis, excess energy can be stored, transported and used at a later stage (WaterstofNet, n.d.-b).

At North Sea level, initiatives such as HyNOS emphasise the need to develop hydrogen infrastructure alongside electricity networks in order to fully unlock the potential of offshore wind. By enabling large-scale transport, storage and cross-border integration of energy, hydrogen is expected to play a complementary role in strengthening future system flexibility and resilience (HyNOS, 2026).

4.5 Conclusion

Hydrogen development in Belgium has entered a phase of increasing maturity, supported by a solid legislative framework, emerging market mechanisms, and progress in infrastructure across ports, terminals and transport networks. However, large-scale deployment now hinges on improving cost competitiveness, requiring a pragmatic approach that embraces multiple production pathways to accelerate market formation and strengthen energy independence. In this context, the effective and timely implementation of EU regulation remains essential to create a viable business case, provide demand certainty and enable decarbonisation. Building on its strong industrial base, strategic location and advanced research and innovation ecosystem, Belgium possesses all the key assets to develop a thriving clean hydrogen market in the years to come. At the same time, Belgian expertise and solutions are increasingly being deployed internationally, allowing Belgian companies to contribute to and benefit from the global expansion of hydrogen value chains.

SUCCESS STORIES IN BELGIUM



COMPANY

BREUER TECHNICAL DEVELOPMENT

REGION

Wallonia

Founded: 1986

Location: 4960 MALMEDY

Number of employees: 12

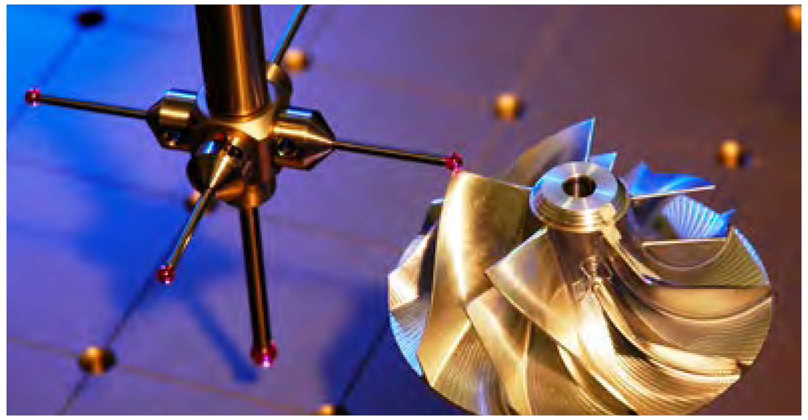
Start of exports: 1986

Patents:

- 2014 – 2016: HAVCOAT: PATENT 3543672 – BENCH for dynamic testing by electromagnetic charging of bearings
- 2012 – 2017: COSMOZ – Natural gas (CNG) driven engines : PATENT 3540206 – INTAKE SYSTEM WITH INTEGRATED AIR/ FUEL MIXER

btd BREUER TECHNICAL DEVELOPMENT

INTERVIEW WITH
Ernst Breuer,
CEO



What began as an early interest in rally mechanics, encouraged by their father who ran a car dealership, has evolved into a specialised engineering company supporting the development of advanced propulsion technologies. Based in Malmedy, Breuer Technical Development (BTD) has spent more than four decades working on combustion engine development and testing. Today, the company is expanding that expertise into the hydrogen economy, positioning itself as an independent testing and development partner for hydrogen engines, fuel cells and alternative fuels.

The origins of the company go back to the mechanical preparation of rally cars, where practical engineering formed the foundation of BTD's expertise. Over time, this experience grew into a professional engineering activity serving major automotive manufacturers. The company has since developed long-standing collaborations with international clients including Volkswagen, Audi, Toyota and Lamborghini.

A STRATEGIC SHIFT

"Hydrogen engines and fuel cells are a natural extension of what we have been doing for forty years"

BTD's core activity has always centred on the development and testing of combustion engines. Over the past decades, however, the priorities of engine development have shifted significantly. Where power output once dominated engineering discussions, emissions and efficiency have become the key focus, encouraging companies like BTD to explore alternative propulsion technologies.

The company began actively examining hydrogen solutions around 2020. Hydrogen combustion engines and fuel cells remain closely connected to fuel-based powertrains, making them a logical direction for BTD's engineering expertise. "We did not want to move into battery technologies because that is not our field of expertise. Hydrogen engines and fuel cells are a natural extension of what we have been doing for forty years," explains CEO Ernst Breuer. This strategic direction gained momentum through BTD's participation in the European IPCEI Hy2Move programme as associated partner.

IPCEI HY2MOVE

Within the framework of IPCEI Hy2Move, BTD is building a new independent test centre dedicated to hydrogen engines, fuel cells and e-fuels. Once operational, the facility will significantly expand the company's testing and engineering capabilities by offering specialised infrastructure for testing propulsion systems under a wide range of operating conditions.

A key objective of the project is to provide independent testing capacity for companies and research institutions that do not have their own development infrastructure. "Our goal is to provide the tools that allow them to develop their products," Breuer says. In addition to testing services, BTD will also support partners with design, prototyping and the development of hydrogen-powered drivetrains and components. The company also designs and builds its own single-cylinder research engines. Using a single cylinder makes testing easier because engineers have far better access to the cylinder itself, allowing them to install sensors and other measurement equipment. Compared to a full engine, these test engines are smaller, consume less fuel and are easier to handle when analysing combustion behaviour. Through these facilities, BTD can generate detailed test results on different fuels, engine behaviour and performance under a wide range of operating conditions, including emissions measurements.

TESTING UNDER EXTREME CONDITIONS

One of the most distinctive features of the new test centre is its ability to simulate extreme environmental conditions. Engines and fuel cell systems will be tested at temperatures as low as −30°C and at simulated altitudes of up to 10,000 metres while operating under load. Maintaining these conditions throughout full testing cycles requires significant cooling capacity and specialised engineering infrastructure.

While such conditions exceed the requirements of most road vehicles, they open the door to applications in more demanding sectors. "When we designed the facility, we deliberately extended the altitude range to 10,000 metres. That allows us to look not only at mobility on the ground, but also at future applications such as aviation," states Breuer. These capabilities may prove particularly relevant for emerging hydrogen applications in aviation, defence and specialised mobility systems.

TECHNOLOGY-NEUTRAL

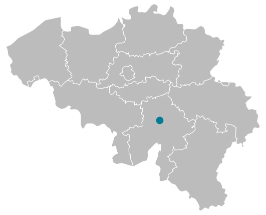
BTD approaches hydrogen technologies from a deliberately technology-neutral perspective. Rather than focusing on a single solution, the company believes hydrogen combustion engines and fuel cells will coexist, each serving different applications depending on operational requirements. Hydrogen combustion engines may offer advantages in heavy-duty applications or situations where existing engine architectures can be adapted, while fuel cells can deliver higher efficiency under lower load conditions. By supporting both technologies, BTD aims to contribute to the development of whichever propulsion solutions prove most effective.

FUTURE LEGACY

"Our ambition is to become a reference testing facility where companies come when they want reliable results"

Looking ahead, BTD aims to establish itself as a recognised reference testing facility for hydrogen propulsion systems in Europe. By combining decades of engine development expertise with new hydrogen-focused infrastructure, the company intends to support the next generation of mobility technologies and industrial applications.

"Our ambition is to become a reference testing facility where companies come when they want reliable results," concludes Breuer. For the CEO, the expansion into hydrogen also carries a personal dimension: one of his sons already works within the company while the second is expected to join in the near future. Together they represent the next generation that will continue building on BTD's engineering expertise while carrying forward the company's legacy of solid know-how, engineering quality and becoming a reference test facility, also beyond automotive purposes.



COMPANY

Ionect

REGION

Wallonia

Founded: 2024

Location: headquarters Brussels, with an office in Namur as well.

Number of employees: 5

Turnover (2025): 500 k€

Growth (2025): +600%

IONECT

INTERVIEW WITH
Marijn Blommaert,
Co-Founder

Ionect is an agile engineering partner supporting energy-intensive chemical industries in navigating complex low-carbon technologies. Founded in 2024, the Belgian engineering company assists industrial players, project developers, and technology providers in turning concepts into technically robust and economically viable projects. Therefore, they combine expertise in electrochemical technologies and practical engineering.

CREATION OF IONECT

"The real innovation in hydrogen is coming from start-ups and scaling companies."

Over the past decade, hydrogen technologies have developed significantly, yet many industrial players are still navigating how to translate these innovations into practical applications. That realisation ultimately became the direct trigger for the creation of Ionect. Together with a co-founder who previously worked on the development and international deployment of electrolyser units, Marijn Blommaert established Ionect to help bridge this divide. Rather than developing hydrogen infrastructure itself, the company focuses on ensuring that projects are technically sound and economically viable before they move towards large scale investment. "The real innovation in hydrogen is coming from start-ups and scaling companies. Large industrial players are still waiting to see how the market develops," states Marijn Blommaert, co-founder of Ionect.

Ionect is headquartered in Brussels and also operates an engineering office in Namur. While part of the company's activities focuses on studies and analytical work, the engineering team based in Wallonia carries out the technical core of its projects. From this office, engineers prepare technical documentation, develop project plans and perform CAPEX calculations that support the feasibility and design of hydrogen and Power-to-X installations. The Namur team also represents Ionect internationally at industry events such as Hyvolution in Paris, where the company showcases its engineering expertise to international stakeholders.

UPSTREAM IN THE VALUE CHAIN

"Clients often already have certain expertise in house. Our role is to review or develop the specific elements they need"

Ionect is structured as a high-expertise engineering company with deep roots in electrochemical technologies and industrial energy systems. The company supports hydrogen and Power-to-X projects throughout the full project lifecycle, helping industrial players translate emerging technologies into industrial, regulatory-compliant and investable solutions. Its activities often begin at the very start of the hydrogen value chain, in the conceptual and feasibility phases, where Ionect assists clients with techno-economic assessments, concept definition and technology selection for hydrogen and Power-to-X applications such as e-methanol and e-ammonia. From there, the company can remain involved as projects mature, contributing to process and safety engineering, supplier selection and scale-up strategies for industrial deployment.

These services are deliberately offered in a modular way, allowing companies to engage Ionect for specific aspects such as technology due diligence, system integration, safety analysis, permitting or scale-up support. This flexible approach enables the company to integrate into existing project teams while providing specialised hydrogen expertise where it is most needed, helping developers reduce uncertainty and make informed decisions. "Clients often already have certain expertise in house. Our role is to review or develop the specific elements they need," notes Blommaert.

A TECHNOLOGY-AGNOSTIC APPROACH

A defining characteristic of Ionect's engineering philosophy is its technology-neutral positioning. The company works with a wide range of hydrogen production technologies, including PEM, alkaline, AEM and SOEC electrolysers. Rather than promoting a specific technology, Ionect evaluates the available options based on the technical and economic requirements of each project. Operational conditions, integration with renewable electricity, system efficiency and long-term cost considerations all influence the final technology choice. This vendor-neutral approach enables the company to provide independent technical advice and to identify the most suitable solutions for each application.

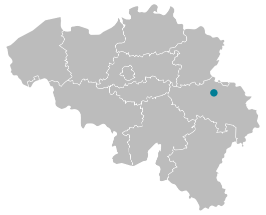
(INTER)NATIONAL PRESENCE

Although still a young company, Ionect has already established an international presence. Around half of its projects are currently located outside Belgium, with the Netherlands emerging as a particularly active market for hydrogen innovation. Spain is also attracting growing interest, notably through projects supported by the European Innovation Fund. In this international and technically demanding environment, partnerships play an important role. Ionect also collaborates with WHA International, a United States-based consultancy specialised in hydrogen design and safety studies, combining engineering expertise with internationally recognised hydrogen safety capabilities.

Operating across borders, however, also means navigating different regulatory environments. Even within Belgium, permitting procedures can vary significantly between regions, requiring companies to adapt their project development strategies to different regulatory frameworks. At the same time, Ionect benefits from Belgium's strong engineering tradition and its dense industrial landscape, which includes chemical clusters, ports and research institutions actively engaged in hydrogen development.

NEXT-GEN PROJECTS

Looking ahead, Ionect aims to further strengthen its role at the intersection of technological innovation and industrial deployment. Building on its expertise in electrochemical systems, its technology-agnostic engineering approach and its growing international network, the company plans to support the next generation of hydrogen and Power-to-X projects as they move from concept to industrial scale. In an increasingly complex hydrogen landscape, Ionect seeks to help ensure that promising technologies translate into projects that are technically robust and economically viable.



COMPANY

John Cockerill

REGION

Wallonia

Founded:1817

Location: Seraing, Liège, Belgium

Number of employees: 8300 for the John Cockerill Group, including 550 for the Hydrogen Business

Turnover (2025): Group: €1.6 billion

INTERVIEW WITH
Nicolas de Coignac,
CEO Hydrogen

In a hydrogen market often driven by announcements and ambition, John Cockerill Hydrogen stands apart through industrial continuity. Building on more than 200 years of industrial engineering expertise within the John Cockerill Group, its move into hydrogen is rooted in a long-standing focus on steel and engineering solutions for industry, where electrochemistry and materials expertise form a natural match.

This positioning was reinforced through long-standing collaboration with John Cockerill Jingli Hydrogen, initiated in 2018 and fully integrated into the Group's operations in 2022. Leveraging three decades of electrolysis manufacturing experience, the company entered the hydrogen market with proven technology, an established product base and an existing customer network.

PRESSURISED ALKALINE ELECTROLYSIS

John Cockerill Hydrogen supplies large-scale hydrogen production solutions. It ranges across the design, manufacturing and integration of electrolysis systems with balance-of-plant engineering and lifecycle services. At the core of its technology lies pressurised alkaline electrolysis, delivering high efficiency at lower capital and operating costs, without reliance on scarce raw materials. Its robustness and fast ramp-up make it suitable for large-scale deployment and integration with renewable energy.

This technology directly shapes the company's product offering. The S-series has established itself as the reference for capital-efficient projects, while the P-series targets operational performance with higher efficiency and flexibility. The balance between both depends primarily on electricity cost and the specific conditions of each project.

The development of next-generation electrolysers is reinforced by the integration of McPhy's technologies. By combining electrolysis expertise with targeted design improvements, including polymer-based frames, the company improves current solutions by 10 to 15%.

MODULAR AND STANDARDISED

John Cockerill Hydrogen's electrolysers are built on modular 5 MW stacks, forming the basis of large-scale installations typically developed at 20 to 50 MW, with a clear shift towards projects exceeding 100 MW. This modular architecture enables projects to be scaled through repeatable units, supporting a more standardised approach to system design.

This logic extends beyond the stack, to the full plant. Through Rely, its joint venture with Technip Energies, John Cockerill develops standardised, turnkey hydrogen production units and end-to-end large-scale solutions. This pioneering model reduces lead times and costs, improves warranty conditions and simplifies on-site construction.

MULTI-LOCAL STRATEGY

John Cockerill Hydrogen's multi-local strategy is closely linked to its manufacturing process. By combining production and service hubs across key regions, the company stays close to its customers while building capacity for large-scale deployment. In this market, logistics, installation and maintenance remain closely tied to manufacturing location, making proximity essential.

The multi-local strategy is also reflected in the company's regional industrial footprint. Through its partnership with AM Green in India, manufacturing is directly linked to secured offtake. The 640 MW Kakinada ammonia project anchors this industrial model and ranks as the second-largest project globally.

In Europe, the focus shifts towards control and integration. All operations are carried out in-house, driven by the limited availability of specialised suppliers such as for coatings. This results in higher capital intensity, but ensures full control over the manufacturing process. In North America and China, production is positioned closer to end markets, allowing the company to serve local demand while adapting to regional requirements.

THE EXPERIENCE CURVE

"The experience curve reflects accumulated manufacturing, translating into lower product costs over time."

Electrolyser manufacturing at John Cockerill Hydrogen is structured around two distinct stages: cell production and stack assembly. The first is built for fixed capacity, while the second can be scaled more progressively. This setup supports the manufacturing of large industrial stacks, within a production line engineered for high-throughput operations underlining the importance of repetition and process control.

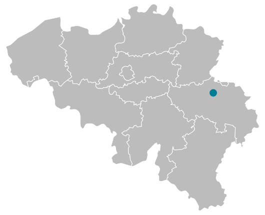
"The experience curve reflects accumulated manufacturing, translating into lower product costs over time," explains Nicolas de Coignac, CEO of John Cockerill Hydrogen. Achieving this level of accumulated manufacturing, however, requires sustained demand. In Europe, this is closely tied to the implementation of the Renewable Energy Directive across Member States and to regulatory frameworks that create predictable demand. As a co-founder, John Cockerill Hydrogen is therefore actively involved in initiatives such as the Electrolysers for Europe coalition (E4E), advocating for stronger demand-side measures, as well as a revision of RFNBO rules to simplify renewable hydrogen production requirements.

GLOBAL LEADER

"We are not building on dreams, but on demonstrated facts. Within five to ten years, we aim to be among the top tier of global leaders."

John Cockerill Hydrogen has built a solid project pipeline, with more than 1 GW in FEED studies in addition to a backlog of around 700 MW. This places the company among the leading industrial players in electrolysis, supported by a growing track record of large-scale projects across different regions.

Its ambition is to further strengthen this position in the coming years, while remaining grounded in industrial execution. "We are not building on dreams, but on demonstrated facts. Within five to ten years, we aim to be among the top tier of global leaders," de Coignac concludes.



COMPANY

GDTech

REGION

Wallonia

Location: Headquarters in Liège, Belgium

Number of employees: 120 employees in Belgium

Turnover (2025): €15.3 million revenue *(latest available figures – FY2024 approved in 2025)*

Growth (2025): Approx. +11% revenue growth compared to previous year (€15.29M vs €13.75M)

Investments (2025): More than €2.3 million invested in R&D, software development and equipment during the latest fiscal year

Start of exports: International activities developed progressively through European and North American operations

Awards and recognitions: Ranked 21st among large companies in the 2026 Trends Gazelles ranking for Wallonia

GDTECH group

INTERVIEW WITH
Guy Janssen,
CEO

As hydrogen technologies continue to advance at pace, the real challenge is increasingly to turn innovation into robust industrial solutions. Before a hydrogen storage system can be deployed, a fuel solution integrated, or a combustion technology operated safely at industrial scale, every component must be thoroughly tested, calculated and validated. Belgian engineering company Global Design Technology (GDTech) operates precisely at this intersection of technological innovation and industrial validation.

GDTech specialises in engineering services and advanced numerical simulation for complex industrial systems. While active across several high-tech industries, the company has steadily expanded its expertise in hydrogen technologies over the years. Long before clean hydrogen became a cornerstone of Europe's decarbonisation strategy, GDTech was already contributing to the sector through projects such as the development of next-generation hydrogen injectors.

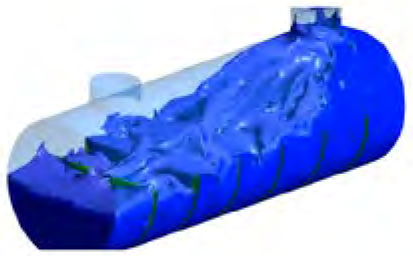
Today, the company supports industrial players across almost the entire hydrogen value chain, from electrolysis and storage to fuel cells, combustion technologies and cryogenic systems. GDTech does not manufacture hydrogen technologies itself. Instead, it helps clients simulate, optimise and validate them before they reach real-world deployment, reducing development risk while accelerating innovation.

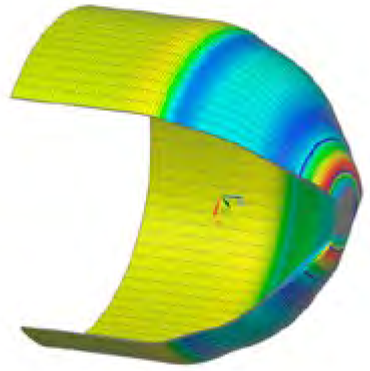
SIMULATING THE FUTURE OF HYDROGEN

At the heart of GDTech's work is a clear ambition: to turn complexity into predictability. Through advanced numerical simulation and multiphysics modelling, the company enables industrial partners to reproduce complex physical phenomena digitally, long before physical prototypes are built. "Our added value lies in our expertise in advanced numerical simulation and our ability to optimise and accelerate the development of complex industrial systems," says Guy Janssen, CEO of GDTech.

From computational fluid dynamics (CFD) and thermal management to combustion, mechanics, digital twins and advanced composite modelling, GDTech brings together multiple engineering disciplines to support clients throughout the product development cycle. Its teams are involved from the earliest design stages through to testing and manufacturing follow-up.

"Our added value lies in our expertise in advanced numerical simulation and our ability to optimise and accelerate the development of complex industrial systems."





"Hydrogen technologies require a high level of precision and reliability, especially in sectors where safety and predictability are critical."

GDTech's activities also extend to simulation software, where the company acts as a Business Partner and reseller for providers such as Siemens Digital Industries Software and ADAGOS. Its portfolio combines artificial intelligence, digital twin and neural-network applications with solutions for mechanical analysis, system modelling and fluid dynamics simulation.

This combination of engineering expertise and software integration enables GDTech to offer clients comprehensive support, including implementation, training, coaching and technical assistance. Companies can also progressively build these simulation capabilities within their own organisations.

Beyond efficiency gains, this virtual engineering approach also contributes directly to sustainability objectives. By replacing much of the traditional trial-and-error process with digital simulation, companies can reduce material consumption, lower energy use and shorten development cycles.

INTERNATIONAL H_2 COOPERATION

Among GDTech's hydrogen-related activities, high-pressure storage technologies have become a particularly important area of expertise. Lightweight composite tanks are expected to play a key role in the future of hydrogen mobility, especially in sectors such as aviation, maritime transport and defence, where performance requirements remain exceptionally demanding. "Hydrogen technologies require a high level of precision and reliability, especially in sectors where safety and predictability are critical," explains Janssen.

GDTech's cooperation activities include work with Honda R&D Japan on composite pressure tanks for hydrogen, alongside partnerships in Austria with companies such as Scioflex Hydrogen focused on material technologies. These initiatives are closely linked to the company's broader research efforts in composite high-pressure storage solutions. Through the Walloon research project COPHYDIS, GDTech is developing new methodologies for modelling composite hydrogen tanks, while the European M-ERA-NET HYPOLFAIL project examines how hydrogen affects the mechanical behaviour of reinforced composite materials used in high-pressure tanks.

GDTech is also involved in HYPSTER, a project exploring hydrogen distribution systems for aircraft engines, including liquid and gaseous hydrogen heat-exchanger technologies. Together, these initiatives highlight the company's growing role in forward-looking sectors where hydrogen is expected to be transformative.

BELGIAN ENGINEERING INNOVATION

According to GDTech, Belgium offers a strong environment for hydrogen innovation thanks to its highly skilled engineering talent and efficient research support mechanisms. Based in Liège, the company benefits from close proximity to major industrial and aerospace players such as Safran Aero Boosters, while also collaborating with clusters such as TWEED and Pôle Mecatech. Internationally, GDTech is active in France, Italy, the Benelux region and Canada/USA, combining in-house business development efforts with support from AWEX.

As the hydrogen economy continues to mature, the company aims to further refine its modelling methodologies while accelerating the commercialisation of next-generation hydrogen technologies. By enabling companies to simulate the future before building it, GDTech is helping turn ambitious hydrogen concepts into industrial reality.

INTERVIEW WITH
Leen Vanhamme,
Director Strategy & Sustainability

COMPANY

Fluxys

REGION

Brussels

Founded: 1929

Location: headquarters Brussels

Number of employees:
1500 Fluxys Group

Turnover (2025): 1367m€

Investments (2025): 330 m€

Fluxys operates as a midstream international infrastructure group, organising the transport, storage and terminaling of energy at scale. Founded in Brussels in 1929 as Distrigas, with the ambition of establishing Belgium as a European hub for the transport and transit of natural gas, the company has developed into a key infrastructure player connecting supply and demand across borders. Today, its infrastructure spans multiple countries across Europe, Latin America and the Middle East. By managing these flows rather than producing energy itself, Fluxys plays a central role in the energy system, while preparing it for the energy transition and a carbon-neutral society.

ELECTRONS AND MOLECULES

This evolution reflects a structural reality in Belgium's energy system, where molecules continue to account for a significant share of energy consumption (Next to 225 TWh of fuels, Belgium's 2025 energy consumption was 150 TWh of gas and 80 TWh of electricity). To reach carbon neutrality by 2050, a mix of complementary solutions will be necessary. Industry, heavy transport and parts of high temperature heating will continue to depend on molecules, requiring renewable and low carbon electrons and molecules to be part of an integrated energy system.

In this context, Fluxys adopts a broader system-wide perspective. Its participation in the Elia Group through NextGrid Holding reflects the importance of infrastructure for both energy vectors.

EXISTING STRENGTHS

"With parallel pipelines already in place, we can switch one to new molecules while maintaining gas flows in the other."

Fluxys builds on a dense and well-connected infrastructure developed over decades. In Belgium, this includes approximately 4,000 kilometres of pipelines, embedded in a wider system of 28,000 kilometres across the group, alongside 4 Liquified Natural Gas (LNG) Terminals with a yearly regasification capacity of 485 TWh.

The company envisages gradually repurposing this network for hydrogen and CO_2 depending on market demand, complemented where and when needed, by targeted new investments. This approach reduces both costs and lead times, contributing to industrial competitiveness. "With parallel pipelines already in place, we can switch one to new molecules while maintaining gas flows in the other as long as required by the market," explains Leen Vanhamme, Director Strategy & Sustainability at Fluxys.

MULTI-MOLECULE INFRASTRUCTURE

"A colour-neutral approach to hydrogen is essential to ensure availability and scale while keeping costs manageable in an early-stage market."

Infrastructure development is closely tied to market demand and the pace at which it materialises. Fluxys structures its investments around consultations with industrial players, which highlight the importance of long-term commitments and mechanisms that reduce early-stage risk. Without these, large-scale infrastructure is difficult to justify from an economic perspective.

At the same time, initial infrastructure projects are currently underway. Hydrogen pipelines in the port of Antwerp and between Antwerp and Ghent are under construction. These pipelines are designed as multi-molecule infrastructure, capable of transporting hydrogen, CO_2 or methane (natural gas, biomethane and synthetic methane), depending on market evolution. Fluxys aims to build open access, multi molecule pipeline networks aligned with market needs. "A colour-neutral approach to hydrogen is essential to ensure availability and scale while keeping costs manageable in an early-stage market," states Vanhamme.

CONNECTING BELGIUM

Beyond Belgium, Fluxys is actively involved in cross-border infrastructure development. As part of the European Hydrogen Backbone initiative, the company contributes to a network spanning 28 countries, largely based on repurposed gas infrastructure, including projects such as the German Core Grid, Hy4Link, and aligned cross border developments with OGE and Gasunie.

Belgium, located between the North Sea and major industrial regions such as the Ruhr area and Luxembourg, forms the shortest route between future supply and demand. This positions the country as a natural hub for incoming renewable and low-carbon molecules.

Fluxys is preparing for this by developing, together with Advario, an ammonia import terminal in the Port of Antwerp, with a FEED study ongoing and permitting procedures underway. In parallel, it is involved in initiatives such as HYNOS, which aim to integrate offshore wind and hydrogen production within a coordinated North Sea system.

HNO & CNO

Belgium was the first European country to designate in 2024 a Hydrogen Network Operator (HNO), appointing Fluxys through its subsidiary Fluxys hydrogen. In 2025 and 2026, the Walloon and Flemish regional authorities appointed the Fluxys subsidiaries Fluxys c-grid as CO_2 Network Operator (CNO) in the regions and Fluxys c-grid Antwerp for the Antwerp port area. As HNO, Fluxys works with other stakeholders to collect market demand information and determine the appropriate scale and timing of necessary infrastructure investments.

30X30X30s

Fluxys develops its infrastructure with a clear long-term view, with the ambition to offer customers, in the 2030s, the capacity to transport around 30 TWh of hydrogen and 30 million tonnes of CO_2 per year. While the pace of this evolution depends on market demand and in so far as the investment risk in the start-up phase of the market is brought to an acceptable level via support mechanisms, it provides a structured framework for investment decisions. Rather than waiting for the market to fully materialise, Fluxys is already rolling out initial infrastructure, preparing key cross-border corridors and establishing partnerships, while working closely with governments and regulators to ensure that the necessary framework conditions are in place. In doing so, the company ensures infrastructure enables supply and demand to connect as new energy markets emerge.

COMPANY

Hinicio

REGION

Brussels

Founded: 2006

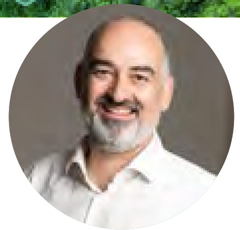
Location: Brussels

Number of employees: 57

Start of exports: 2007

Share of exports in turnover: 90%

Awards and recognitions: Best Hydrogen Service Provider in Latin America and the Caribbean (2024), Best Sustainable Energy Consulting Firm, Global Business Awards (2023), Global Top Hydrogen Consultancy Firm, Reuters Top 100 Innovators in Hydrogen (2023), CertifHy awarded Best Success Story by the Clean Hydrogen Partnership Joint Undertaking (2022), 17th Futurology's Most Innovative Renewable Energy Companies, Futurology (2021), Most Innovative Brussels-Based Renewable Energy Companies and Startups



INTERVIEW WITH
Patrick Maio,
Founder of Hinicio

Founded twenty years ago, Hinicio has established itself as one of the leading international consulting firms specialised in hydrogen and the decarbonisation of so-called hard-to-abate sectors. Worldwide, the company supports governments, financial institutions, industrial players and hydrogen project developers, from the earliest phases of reflection through to the final investment decision. Drawing on solid technical expertise and in-depth market and regulatory knowledge, Hinicio designs and deploys integrated solutions covering energy systems, air and maritime transport, as well as heavy duty mobility and process industries. Patrick Maio, founder of Hinicio, states from the outset:

"We connect what is technically feasible, regulatory compliant, and commercially competitive. The company supports projects across all workstreams, *technical, commercial, regulatory and financial, optimising and derisking entire value chains to ensure successful project developments."*

EXPERTISE STRUCTURED AROUND FOUR KEY PILLARS

Hinicio operates across the entire hydrogen value chain. Its offering is structured around four complementary pillars: public policies and regulation (impact analysis, compliance and certification), engineering and digital solutions (technical and economic optimisation of projects, system simulation and optimisation SaaS solution), markets and offtake (securing demand and defining effective business models), and M&A, investment and financing (fundraising and due diligence).

This integrated approach enables Hinicio to connect what is technically feasible, regulatory compliant and economically viable, a key factor in a sector that remains highly regulated and still in the process of structuring. *"Decarbonisation and low-carbon hydrogen are essentially regulated markets. Understanding public policies, possible evolution scenarios and their concrete impact business wise has become indispensable. It is not a peripheric topic to engineering optimal projects, it is a core strategic driver to technical definitions"* emphasises Patrick Maio.

INNOVATING FOR SUSTAINABLE HYDROGEN

Innovation at Hinicio does not rely on the development of industrial technologies, but on the ability to develop "enabling platforms" to help structure complex projects and secure their viability. For example CertifHy®, developed by Hinicio, is Europe's first Guarantees of Origin system for hydrogen. This certification is recognized by the European Commission. *"Hydrogen has neither colour nor smell. What makes the difference is the way it is produced, transported and used. Certification makes it possible to ensure the traceability and environmental performance of molecules"* explains Maio.

He further specifies the usefulness of certification: *"It ensures compliance with regulation or justifies the additional cost inherent in this type of production. Hydrogen-related projects in Europe are largely financed by the EU, and these require certification; it has become a prerequisite. Moreover, low carbon molecules that can be imported into Europe will have to be certified as having been produced with minimal environmental impact. Projects must meet a certain number of environmental criteria. This creates an impact that, in a way, creates a market to which we respond."*

"We connect what is technically feasible, regulatory compliant, and commercially competitive"

"Projects must meet a certain number of environmental criteria"

Maio also refers to the collaboration with the European Investment Bank (EIB): *"We work in consortium with Capgemini to support the EIB in the selection and preparation of hydrogen projects in Europe, supporting project developers in structuring their projects thanks to the so-called Project Development Assistance (PDA) Funds."*

In parallel, Hinicio has developed ANDREA®, a proprietary Power-to-X modelling and optimisation SaaS solution. This tool makes it possible to directly integrate technical, regulatory and market constraints into the project design by construction, and simulate multiple configurations under constraints, in order to identify the most robust architectures and the most relevant business cases for project developers. It also enables investors to perform project portfolio analysis and reviews.

AN INTERNATIONAL PLAYER FROM THE START

While the Belgian market remains limited in size, Hinicio is resolutely international. The company now has offices in Brussels, Paris, Rotterdam, Madrid, Santiago de Chile and Bogota, and has supported more than 300 public and private stakeholders worldwide.

In Latin America, Hinicio played a key role in the emergence of genuine hydrogen ecosystems, particularly in Chile and Colombia, a region that today represents 30 to 40% of its overall activity. Opportunities are significant for Patrick Maio: *"To produce green hydrogen, a lot of space is needed together with good natural conditions to develop renewable energy capacities such as wind, solar and hydropower, in order to develop large projects and reduce costs. In South America, there is a lot of space, plenty of sunshine and winds, like for example in Patagonia. As you get closer to the Equator, there is abundant sunshine and vast sparsely populated territories. These are ideal conditions to develop such projects. Access to water, required for water electrolysis, is also often less problematic than in other regions of the world, such as Africa."*

He adds: *"There is also a geopolitical dimension linked to the gradual phasing out of fossil fuels. As we are observing once again, with tensions in Middle East, we need to find sustainable technology pathways to continue working together, particularly with the MENA region. We work very well in Morocco, Egypt and the United Arab Emirates, but also Oman and Jordan. We also work in Africa, with Namibia and Mauritania. Actually, these regions will produce both for themselves and for us too in future. We just need to make it work and ensure strong co-benefits for all populations, to build a more sustainable and inclusive future."*

BELGIUM, A STRATEGIC HUB AT THE HEART OF EUROPE

The choice of Brussels is no coincidence. For Hinicio, Belgium offers a unique positioning: direct proximity to European institutions - with an ambitious energy-transition agenda, access to international well trained talent, and the presence of major value-chain players such as Fluxys, ENGIE, DEME, AIR LIQUIDE, TOTAL, CMB.TECH or the Port of Antwerp-Bruges.

Among the emblematic projects is HYBEX, developed in collaboration with Fluxys and the Port of Antwerp-Bruges, aiming to create a hydrogen marketplace in Belgium. Supported by public authorities, this project brought together local industrial and institutional players.

"HYBEX is a very good illustration of our know-how: structuring a market, connecting stakeholders and creating the conditions for credible development" explains Maio.

"Beyond the richness of the Belgian hydrogen ecosystem, the presence of industrial players in the middle of the value chain, as potential users, is important. Chemical and petrochemical industries as well as industrial facilities will have to be supplied with low-carbon hydrogen. Besides, Belgium is also a strategic transit point towards German industrial needs as underlined by the national hydrogen strategy."

Maio also highlights the support provided by the Belgian federal authorities: *"Together with Hinicio shareholders, the Ministry of Energy, in addition to European funds, financed early stage developments of CertifHy® which was a brand new enabling platform, before it actually became a self-sustainable venture"* .

HYDROGEN: THE FUTURE FOR TARGETED SECTORS

In the long term, Hinicio aims to become the world's leading strategic advisor in hydrogen. In the short and medium term, the company focuses its efforts on markets where hydrogen is most relevant: refineries, ammonia and fertilisers, green steel, maritime transport, heavy duty transport and sustainable aviation fuels. *"Hydrogen primarily targets heavy industries and uses that are difficult to decarbonise, and where alternative technologies such as direct electrification or battery storage as inadequate. These are the markets that will truly make a difference in terms of scalability and cost, with a direct climate impact. But this will take time and require consistent regulatory market signals."* he concludes.

COMPANY

Rely

REGION

Brussels

Founded: 2023

Location: headquarters - Brussels

Number of employees: 195

Shareholding: Technip Energies (60%), John Cockerill (40%)

Awards and recognitions: Investing in Hydrogen (London) – Project of the Year

INTERVIEW WITH
Damien Eyriès,
CEO

In a market often characterised by fragmented responsibilities and multiple interfaces, Rely operates as an independent technology integrator across the green hydrogen and Power-to-X value chain. They deliver large-scale plants that convert renewable electricity into green hydrogen and its derivatives such as green ammonia, e-methanol and sustainable aviation fuels. Rather than supplying isolated equipment, the company structures, designs and delivers complete industrial ecosystems, from feasibility studies and pre-FID optimisation to EPC execution, Energy Management Systems and operational support.

COMBINED EXPERTISE

> *"Standardisation is the foundation for scalable performance, bankability and speed to market."*

Rely is an asset-light joint venture between Technip Energies and John Cockerill, a structure that underpins much of its strategic positioning. By combining manufacturing expertise with decades of engineering and project execution experience, the company has built one of the first fully integrated product platforms in the Power-to-X market.

This integration materialised with the launch of Clear100+, a configurable 100 MW green hydrogen productised plant integrating 5 MW pressurised alkaline electrolysers developed by John Cockerill Hydrogen. Unlike competitors that often assemble projects through multiple disconnected vendors, Rely's approach standardises the invariable parts of engineering and equipment, while maintaining modular flexibility to adapt to site-specific requirements.

The result is not standardisation for its own sake, but a reduction in interfaces, execution risk and cost per molecule. Today, approximately 80% of projects in development follow this productised philosophy, reflecting a strong market appetite. "Standardisation is the foundation for scalable performance, bankability and speed to market," states Damien Eyriès, Rely CEO.

ONE-STOP-SHOP

Given the inherent variability of green hydrogen and Power-to-X projects, Rely distinguishes between two complementary approaches while maintaining their end-to-end commitment to the full project lifecycle. On the one hand, its product development strategy focuses on configurable, repeatable plants that significantly reduce lead times, minimise risk and improve cost predictability. On the other, when client specifications or local conditions demand it, the company executes tailor-made projects drawing from decades of EPC experience. This flexibility has proven decisive in international markets such as India, France and the Netherlands, where Rely is involved in some of the largest green hydrogen and Power-to-X initiatives currently under development.

Pre-FID phases typically range from six to twelve months, while full project execution can take up to 30 months. Leveraging Rely's standardized approach (notably through the Clear100+ productized plant), pre-FID works can be significantly accelerated, compressing them to as little as four months.

INNOVATION IN ACTION

> *"Our new service Project Enablement Studies allows us to optimise configuration from day one and significantly strengthen project economics."*

Rely's innovation strategy is structured around a Joint Innovation Platform shared with John Cockerill Hydrogen, effectively functioning as a dedicated R&D engine in Belgium, aimed at shortening the path from technological progress to large-scale industrial realisation.

The company also participates in advanced research initiatives, including work with TNO on Anion Exchange Membrane electrolyser technologies and industrial-scale testing campaigns done at a Fraunhofer facility in Germany to develop and validate a proprietary Energy Management System. This EMS, built on in-house expertise, enhances plant optimisation and may evolve into a licensable solution in its own right.

In parallel, Rely has introduced a new service based on their past experience, a new digital tool designed to support clients in structuring projects more effectively from the outset. "Our new service Project Enablement Studies allows us to optimise configuration from day one and significantly strengthen project economics," explains Eyriès.

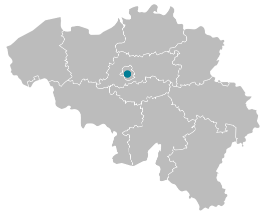
BELGIUM AS STRATEGIC ANCHOR

Although most projects are located outside Belgium, the country serves as Rely's strategic anchor. Brussels offers proximity to European institutions and lies between the headquarters of its parent companies in Paris and Liège, while Belgium's academic excellence, industrial tradition and hydrogen ecosystem provide a fertile environment for talent and innovation. Belgium's central location, strong research base and proximity to the Port of Antwerp further reinforce its role as a strategic gateway for European hydrogen flows. "We are fully ready to operate in Belgium, and active discussions are underway," adds Eyriès.

A REALISTIC VISION OF SCALE

Rely approaches the hydrogen market with measured pragmatism, reflecting its assessment of where supply and demand is likely to materialise in the coming decade. In the medium term, global capacity growth is expected to remain concentrated in e-SAF, refining and fertilisers, where green premiums can be absorbed more easily, while broader uptake will depend on stronger policy signals and technological breakthroughs. Europe is likely to rely partly on imported green ammonia, particularly from India and the Middle East, where renewable resources and cost structures offer structural advantages.

Against this backdrop, the real challenge is not technological feasibility but industrial execution. Large-scale deployment remains constrained by cost pressure, fragmented supply chains and lengthy development cycles. Rely's response is to reduce complexity through standardisation and integration, anchored by Clear100+, its flagship plant concept designed to further lower CAPEX, Levelised Cost of Hydrogen and operating expenditure. By combining productisation with full lifecycle delivery, the company seeks to shorten timelines, enhance bankability and establish a repeatable industrial model capable of supporting the hydrogen economy at scale.



COMPANY

Sweco

REGION

Brussels

Founded: 1958

Location: Stockholm, Zweden

Number of employees: ca. 23.000

Turnover: EUR 2.9 billion in 2025

INTERVIEW WITH
Gaëlla Delcour,
Business Unit Manager

©sachacnockaert

As hydrogen projects become more complex and interconnected, developers need partners who go beyond technical design. Sweco supports clients across the full hydrogen value chain: from early strategy and feasibility to engineering and implementation.

We are involved in hydrogen production plants, transport and storage infrastructure, import terminals and industrial applications, including Power-to-X. Its multidisciplinary teams guide projects through permitting, cost estimation and execution, while also addressing broader challenges such as logistics, infrastructure integration and stakeholder management. "We can look at the entire hydrogen picture. If the market changes direction, we can change direction with it," says Gaëlla Delcour, Business Unit Manager at Sweco.

TECHNOLOGY-NEUTRAL AND CLIENT-FOCUSED

A key strength of Sweco is its technology-neutral approach. Rather than promoting a single solution, Sweco evaluates different technologies independently and helps clients make informed decisions based on technical performance, operational feasibility and cost.

"We compare technologies in detail," says Delcour. "That allows our clients to move forward with clarity and confidence." For developers, this reduces risk in a market where technologies, regulations and business cases are still evolving.

ONE PARTNER ACROSS THE ENTIRE LIFECYCLE

Sweco's integrated approach delivers value well beyond offering multiple services. By combining strategic advisory, permitting and engineering within one organisation, the company ensures continuity throughout the project lifecycle.

This means projects don't lose time switching between partners or restarting from scratch at each phase. Early studies and permitting work feed directly into engineering, shortening timelines and avoiding duplication.

In practice, projects often evolve along the way. A concept initially focused on local hydrogen production may shift towards import, storage or industrial conversion. Because Sweco brings expertise across all these domains, clients can adapt without changing partners or losing momentum. "If we are involved from the start, we can move seamlessly into engineering," says Delcour. "That continuity significantly reduces lead times."

"We can look at the entire hydrogen picture. If the market changes direction, we can change direction with it."

©Tom D'haenens

"We compare technologies in detail. That allows our clients to move forward with clarity and confidence."

EFFICIENCY BY DESIGN

Continuity also translates into more efficient design processes. Preliminary engineering developed during permitting can be reused and refined, accelerating detailed design and reducing costs.

At the same time, close collaboration between disciplines allows potential technical or regulatory risks to be identified earlier. This gives clients more flexibility to adjust their projects in a rapidly changing market.

EUROPEAN EXPERTISE, LOCAL IMPACT

Originally founded in Sweden, Sweco operates as a strong European network that combines local expertise with international experience in hydrogen.

Belgian teams play a key role in feasibility studies, concept development and early engineering — not only for domestic projects, but also across borders in countries such as the Netherlands and Germany.

At the same time, Sweco draws on advanced hydrogen experience from Finland, where projects are further along in execution. The acquisition of Finnish engineering company Fimpec Group has strengthened capabilities in hydrogen production plants and large-scale industrial developments.

FROM PIONEERS TO LARGE-SCALE PROJECTS

This cross-border collaboration is already visible in projects such as VoltH2 in Delfzijl, one of the first large-scale green hydrogen initiatives in the Benelux. Sweco supported the project from permitting and subsidy applications to engineering and plant design.

In Belgium, Sweco contributed to studies for the future Fluxys hydrogen backbone, helping shape the infrastructure needed for large-scale hydrogen transport. These projects highlight the company's ability to combine local presence with international expertise and to translate ambition into concrete progress.

BRIDGING AMBITION AND REALITY

One of the main challenges in today's hydrogen market is no longer technology, but timing. Projects often depend on regulatory clarity, subsidy frameworks and long-term demand before reaching final investment decisions.

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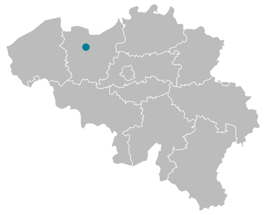
At the same time, opportunities are growing. Industrial players across sectors such as chemicals, metallurgy, food and pharmaceuticals are preparing their operations for hydrogen — whether through local production, imports, storage or process conversion.

Sweco supports this transition at every scale, from early feasibility studies and pilot projects to large industrial developments. By combining strategic insight with hands-on engineering expertise, we help clients move from ambition to implementation: turning hydrogen from a promise into a practical reality.

"If we are involved from the start, we can move seamlessly into engineering. That continuity significantly reduces lead times."



COMPANY

ABC Engines

REGION

Flanders

Founded: 1912

Location: Wiedauwkaai 43, 9000 Ghent

Number of employees: 450

Awards and recognitions:

- 2020 BeHydro wins the Corporate Blue Innovation Award
- 2020 BeHydro hydrogen dual fuel engine launched in Ghent
- 2022 Energy Globe Award
- 2022 Ghent Climate Prize
- 2022 BeHydro launches 100% hydrogen engines at World Hydrogen Summit
- 2025 Royal Visit Marks Launch of Hydrogen Engine Partnership Between Belgium and Japan
- 2025 EDF Supplier Development Finisher Trophy

ABC ENGINES

We power your future

BEHYDRO

THE HYDROGEN FUTURE IS NOW

INTERVIEW WITH
Tim Berckmoes,
CEO

With more than 110 years of experience in designing and manufacturing internal combustion engines (ICEs), ABC Engines (ABC) has established itself as a trusted player in heavy-duty power applications. From its headquarters in Ghent, the Belgian family-owned company develops and produces medium-speed engines for shipping, locomotive traction, and land-based power generation.

A defining feature of ABC Engines is its fully integrated model, where R&D and production are all located on the same site. This close interaction enables the company to move efficiently from concept to industrialisation, shortening development cycles and accelerating time to market. Within the hydrogen segment, ABC Engines operates through BeHydro, a joint venture with CMB.TECH, focusing on hydrogen-powered ICEs as a practical decarbonisation pathway whilst ensuring durability and efficiency.

COMBUSTION EXPERTISE

While much of the hydrogen debate has centred on fuel cells, the company has deliberately chosen to build on combustion technology, leveraging decades of in-house expertise in engine design. From an economic perspective, hydrogen combustion engines offer a clear advantage, with investment costs that are approximately three times lower than those of fuel cells. At the same time, they provide a level of robustness that is particularly valuable in today's market conditions. Unlike fuel cells, which are highly sensitive to fuel purity, hydrogen engines can operate reliably even when the hydrogen contains impurities such as nitrogen, water or traces of other gases. A third advantage lies in supply chain security: "All our core components are produced in Europe, without dependence on scarce raw materials, ensuring both supply chain security and technological autonomy," adds Tim Berckmoes, CEO of ABC Engines.

MULTI-FUEL TECHNOLOGY

Building on this combustion-based approach, ABC Engines places a strong emphasis on flexibility, recognising that fuel availability, pricing and infrastructure will continue to evolve. Rather than committing to a single energy carrier, the company develops engines that can operate across multiple fuels,

"Our hydrogen engines have reached a high TRL, with full certification, including for demanding maritime applications."

"Data centres are a particularly promising application, given their growing demand for large-scale, reliable and low-carbon energy."

allowing customers to adapt as the energy landscape changes.

This is particularly evident in its dual-fuel technology, which enables engines to run on hydrogen while seamlessly switching to conventional or renewable fuels when required. This reduces the risk for clients, who can begin integrating hydrogen without depending on fully mature infrastructure. This flexibility is further reinforced by the multi-fuel engine platform, Evolve, allowing customers to respond to shifting fuel availability and pricing. To support this transition, ABC Engines also provides training through its ABC Academy, guiding customers in adopting new propulsion systems with a focus on simplicity, reliability and ease of implementation.

CERTIFIED FRONTRUNNER

This combination of robustness and flexibility has allowed the company to position itself as both an early adopter and a frontrunner in hydrogen combustion technology. "Our hydrogen engines have reached a high Technology Readiness Level, with full certification, including for demanding maritime applications where safety and reliability standards are particularly stringent," states Berckmoes.

Early projects have demonstrated not only the technical viability of the technology, but also where market demand is beginning to take shape. Today, the strongest interest comes from maritime applications, particularly in segments such as tugboats, offshore operations and ferries, where operational profiles align well with hydrogen use. At the same time, ABC Engines is extending its reach beyond maritime. A pilot project involving a hydrogen-powered locomotive in Namibia highlights the potential for rail, especially in regions where hydrogen can be produced locally, while the company also sees significant opportunities in power generation. "Data centres are a particularly promising application, given their growing demand for large-scale, reliable and low-carbon energy," explains Berckmoes.

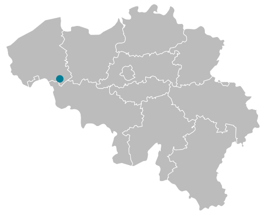
CIRCULARITY BY DESIGN

This focus on practical deployment is closely linked to their approach to manufacturing, where sustainability is addressed not only through fuel choice but also through the design and production of the engines themselves. The company operates its own foundries and relies heavily on recycled materials, with around 90% recycled content in its cast iron, reflecting a long-standing commitment to circularity. At the same time, continuous improvements in engine design have led to a significant reduction in the number of components, with newer generations featuring around 30% fewer parts. These are replaced by more advanced and integrated castings, increasing the complexity per component while simplifying the overall system.

POSITIONED TO SCALE

Despite the strong technological progress achieved to date, the large-scale deployment of hydrogen engines remains closely tied to external factors, most notably the availability and cost of green hydrogen and the development of the necessary infrastructure.

ABC's BeHydro hydrogen engines are fully developed, certified and commercially ready, reflecting a high level of technological readiness. The company now sees the transition less as a question of further technological development and more as a matter of market timing. In the meantime, continued investment in multi-fuel solutions ensures that customers retain the flexibility to navigate an uncertain energy landscape. By combining proven engineering expertise with a clear focus on practical deployment, ABC Engines is prepared to scale its solutions as soon as market conditions align.



COMPANY

Bekaert

REGION

Flanders

Founded: 1880, Zwevegem, Belgium

Location: Headquarters in Zwevegem, Belgium

Number of employees: 19 000

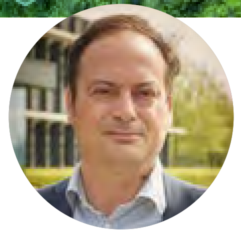
Turnover (2025): €3.7 billion in consolidated sales

Growth (2025): Like-for-like volume growth of +2% (€+16 million)

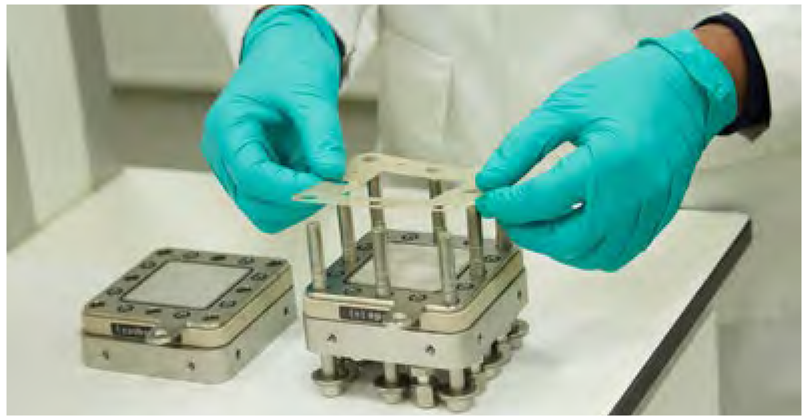
Investments (2025): €139 million in property, plant and equipment and €69 million in R&D and Innovation

Share of exports in turnover: Consolidated sales by region
EMEA: 42%
APAC: 31%
NAM: 21%
LATAM: 6%

Awards and recognitions: Bekaert's sustainability efforts were recognized by CDP with an 'A' score for Climate Change in 2025



INTERVIEW WITH
Edouard de Masson d'Autume,
VP Fiber & Hydrogen Technologies



"We combine global production capacity with next-generation PTL innovation. Our strength lies in industrialisation."

From steel wire drawing as its core craft to advanced materials such as titanium, Bekaert has evolved to support the production of electrolyser components that underpin the hydrogen economy. As a global leader in steel wire transformation and coating technologies, the Belgian group has translated more than a century of industrial expertise into a strategic position within one of clean hydrogen's most critical components: the porous transport layer (PTL). Rather than producing hydrogen itself, Bekaert operates in a niche manufacturing segment of the clean hydrogen value chain by supplying high-performance PTLs to electrolyser manufacturers worldwide.

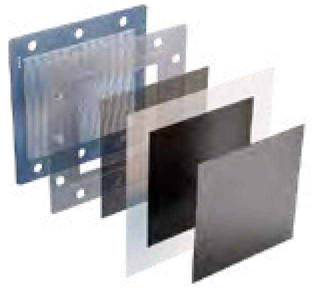
THE FUTURE OF ELECTROLYSIS

Bekaert's hydrogen activities build directly on its historic steel wire drawing expertise, which progressively evolved into advanced metal fibre technologies. Over time, this materials know-how led to the development of titanium-based fibre structures engineered specifically for electrochemical applications. The company's first PTLs were produced over twenty years ago in Japan, marking the beginning of its long-term collaboration with global electrolyser OEMs and establishing relationships that continue to shape PTL development today.

Within a proton exchange membrane (PEM) electrolyser, the PTL is a functional component that governs management of fluids and gasses, electrical conductivity and structural stability under corrosive operating conditions. Its design influences efficiency, durability and overall stack performance.

While alkaline water electrolysis (AWE) remains prevalent in markets such as China, where lower electricity costs and ample space for large-scale installations support its continued use. PEM technology has become the preferable solution in Europe due to its compact footprint and operational flexibility. PEM systems can ramp up and down rapidly, operate efficiently at partial load and tolerate frequent start-stop cycles, making them well suited for integration with intermittent renewable energy sources.

Bekaert also supplies PTLs for anion exchange membrane (AEM) electrolysers. AEM electrolysers operate in an alkaline environment and use a membrane that is permeable to hydroxide ions to split water into hydrogen and oxygen. The technology is considered an emerging solution within the electrolysis landscape, with the potential for a lower Levelized Cost of Hydrogen (LCOH). Today, approximately 5% of Bekaert's confirmed PTL orders relate to AEM systems. Although still developing, AEM is expected to gain relevance toward the end of the decade.



STRUCTURE, SCALE, SUPPLY

Its Currento® portfolio, available in titanium, nickel and stainless steel variants, reflects nearly two decades of collaboration with global OEMs and technology partners. What distinguishes Bekaert is the combination of innovation capability and global production scale. The company continues to advance next-generation PTL technologies, for example through its Hydrogen Innovation Hub in Deerlijk, Belgium. At the same time, manufacturing facilities in Europe, China and Japan support electrolyser manufacturers across major hydrogen markets while maintaining consistent product standards, which allows a quicker go to market and support customers across the full product lifecycle development. "We combine global production capacity with next-generation PTL innovation. Our strength lies in industrialisation," notes Edouard de Masson d'Autume - VP Fiber & Hydrogen Technologies at Bekaert.

Belgium continues to serve as an important anchor within this international network through direct collaborations with academic partners as well as active participation in collaborative research and demonstration projects with key technology developers in Europe and strategic partners globally.

ADVANCING TECHNOLOGY INTO READINESS

As hydrogen deployment evolves, technological optimisation within the electrolyser stack continues to progress. Within this context, Bekaert is advancing next generation solutions through the GRAND PIANO project. They are involved in the industrialisation of an advanced membrane electrode assembly (MEA) concept licensed from Toshiba. The technology applies iridium directly onto the PTL, forming what is known as a porous transport electrode configuration, enabling up to 90% reduction in iridium usage. For Bekaert, this development is less about raw material scarcity and more about efficiency and cost optimisation of the electrolyser system.

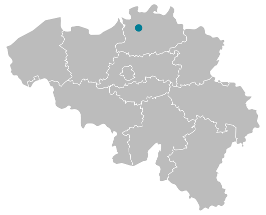
The broader GRAND PIANO initiative focuses on preparing automated gigawatt-scale production for PEM PTLs and developing commercial AEM PTL manufacturing capacity. The project timeline has been influenced by external factors, including slower-than-anticipated market development and the delayed transposition of RED III legislation in several EU Member States. These elements have affected overall investment momentum within the hydrogen sector. Despite these conditions, Bekaert continues to strengthen its industrial readiness through its production facilities, while maintaining expansion potential at its site in Wetteren so that output can be scaled efficiently when demand accelerates.

TURNING EXPERTISE INTO COMPETITIVENESS

Bekaert's hydrogen activities are embedded within its broader strategy of delivering sustainable material solutions across industries. By improving PTL performance and supporting cost efficiency within electrolyser systems, the company contributes to making renewable hydrogen more economically viable. "Success for us means making green hydrogen more affordable for our customers," concludes de Masson d'Autume.

From steel wire drawing expertise to global PTL manufacturing, Bekaert demonstrates how industrial heritage can evolve into a critical enabling role within the hydrogen manufacturing segment of electrolyser components. When materials perform reliably and efficiently at scale, operating costs decrease, strengthening hydrogen's competitiveness and facilitating activity throughout the downstream value chain.

"Success for us means making green hydrogen more affordable for our customers."



COMPANY

CMB.TECH

REGION

Flanders

Location: Antwerp

Number of offices: 11

Revenue (2025): 1,666,080 (in thousands of USD)

EBIT (2025): 577,821 (in thousands of USD)

EBITDA (2025): 965,789 (in thousands of USD)

Operational indicators (2025):
41,037 operating days
8,376,878 total nautical miles travelled
3,636 port calls
71 countries visited

INTERVIEW WITH
Roy Campe,
Chief Technology Officer

"All new vessels we order are future-proofed, either fitted with or prepared for low-carbon technologies."

From Antwerp to the world's major shipping routes, CMB.TECH is reshaping how maritime transport approaches decarbonisation. As one of the world's largest listed and diversified maritime groups, the company operates a fleet of around 250 vessels, including dry bulk vessels, crude oil tankers, chemical tankers, container ships and offshore energy vessels. Rather than betting on a single breakthrough, CMB.TECH has chosen a pragmatic, engineering-led transition strategy built around dual-fuel engines and the gradual introduction of low-carbon solutions such as hydrogen and ammonia.

ENGINEERING TOMORROW'S FLEET

Shipping is the core business of CMB.TECH, which designs, builds, owns and operates vessels worldwide. "All new vessels we order are future-proofed, either fitted with or prepared for low-carbon technologies," says Roy Campe, CTO at CMB.TECH.

Today, around 40 vessels in the fleet are already equipped with low-carbon solutions. Even without alternative fuels, newly built vessels can achieve fuel savings of around 30% compared to ships built ten years ago, which underlines that efficiency remains a cornerstone of decarbonisation. CMB.TECH focuses on fleet rejuvenation and owns a modern fleet today with an average age of around 6 years.

FROM PILOT TO PLATFORM

CMB.TECH has been active in hydrogen-powered shipping for nearly a decade. Starting with the Hydroville in 2017 and the Hydrobingo in 2021, the company deployed early vessels as real-world platforms for crews and regulators. This experience scaled rapidly in 2022 with the delivery of Hydrotug 1, the world's first hydrogen-powered tugboat, now operating in the Port of Antwerp-Bruges. Hydrogen applications have since expanded to crew transfer vessels such as the Hydrocat 48, 55 and 60. Their short routes and daily port returns make hydrogen propulsion operationally feasible, with storage and refuelling handled within a controlled port ecosystem.

Each hydrogen-powered vessel developed by CMB.TECH represents a world first, reflecting the company's step-by-step approach to scaling new technologies at sea. Central to this

achievement is its in-house dual-fuel hydrogen internal combustion engine technology (H_2ICE). These systems allow vessels to operate on conventional fuels while progressively increasing the share of hydrogen, ensuring reliability as fuel availability and infrastructure scale up.

SOLVING THE BOTTLENECK

Decarbonisation does not stop at the engine room but extends to the wider ecosystem required to make clean fuels workable in daily operations. As a part of their R&D strategy, CMB.TECH develops this broader infrastructure, including hydrogen storage modules, bunkering technologies, and advanced control systems that ensure safe and efficient fuel use.

"To overcome the chicken-and-egg problem of hydrogen availability, we developed mobile refuelling solutions," states Campe. The company operates 40-foot trailers at 500 bar, each capable of transporting close to one tonne of hydrogen, allowing ports and industrial sites to start hydrogen operations without waiting for permanent infrastructure.

CLEAN FUELS, VERTICALLY INTEGRATED

CMB.TECH sees green ammonia as the most promising solution for deep-sea shipping. Ammonia contains no carbon, produces no CO_2 during combustion and offers a higher volumetric energy density than hydrogen, making storage and long-distance operation more practical. CMB.TECH has already ordered eleven dual-fuel ammonia-powered vessels, with the first deliveries expected mid 2026. These two-stroke engines will operate primarily on ammonia, with a limited share of pilot fuel required for ignition, enabling significant emissions reductions at scale.

To secure access to future fuels, CMB.TECH is also investing upstream. In Namibia's Erongo region, the group has developed a green hydrogen production facility near the port of Walvis Bay, supplying local mobility and industrial applications. Namibia was a strategic choice due to its exceptional solar resources, available land, political stability and access to a deep sea port. As scale increases, hydrogen will be converted into green ammonia for storage and maritime transport. "We are building a 55-kilotonne ammonia storage facility and a large-scale green ammonia production site of 200,000 tonnes to cover part of our future fleet demand," Campe explains.

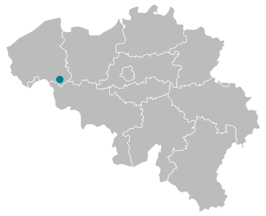
Rather than producing all its fuel in-house, CMB.TECH pursues a balanced sourcing strategy. Long-term offtake agreements with international partners complement its own production. CMB.TECH also supplies hydrogen and ammonia to customers, either from its own production or through third party sourcing.

TURNING STRATEGY INTO REALITY

CMB.TECH's experience with hydrogen propulsion at sea is further developed through BeHydro, its Belgian joint venture with engine manufacturer ABC. Building on operational knowledge gained from deploying hydrogen across different vessel types, BeHydro builds dual fuel and fully hydrogen-powered engines for marine, railway and power applications, enabling reduced or zero CO_2 emissions at the point of use. This direct link between real maritime deployment and engine development ensures that practical experience is translated into scalable propulsion technologies for other heavy-duty sectors.

As pressure mounts to decarbonise global shipping, the industry faces the challenge of aligning vessels, fuels and infrastructure at scale. CMB.TECH has positioned itself to navigate that shift, embedding low-carbon capability into the structure of its fleet and fuel strategy from Antwerp to Namibia and beyond.

"To overcome the chicken-and-egg problem of hydrogen availability, we developed mobile refuelling solutions."



INTERVIEW WITH
Peter Verrept,
CEO

COMPANY

Engicon nv (Geldof)

REGION

Flanders

Founded: 1969

Location: headquarters in Harelbeke

Number of employees: 220

Activity: engineering and construction contractor

Product: storage tanks and terminals, dry bulk handling installations, pressure vessels, etc.

Market: European leader with worldwide references in the energy and industrial sectors

For decades, the Belgian engineering and construction contractor Engicon nv, also known under the brand name Geldof has specialised in the design and construction of large industrial storage installations. As the global energy system evolves, this expertise is increasingly relevant in a new context: the infrastructure required to store and handle the molecules that will underpin the energy transition.

The company's origins date back to the industrial landscape along the River Leie, where it was initially founded to support the once-thriving flax industry. As that sector declined, Geldof gradually evolved into a supplier of industrial metal installations. Over time, the company expanded its activities into storage infrastructure and process installations for the chemical and energy sectors, building a reputation for complex industrial engineering and construction projects.

TAILORED SOLUTIONS

Today, Geldof delivers engineered solutions tailored to the specific needs of its clients across a wide range of industries. Its core activities include the design and construction of storage tanks, tank maintenance, pressure vessels and dry bulk storage and handling systems. Beyond these activities, the company also develops fully integrated and turnkey installations, including full-scope EPC (Engineering, Procurement and Construction) projects for tank terminals, bulk solids installations and industrial processing units.

Their projects are integrated steel solutions ranging from storage to handling and processing of bulk liquids, solids and gases. Combining engineering expertise, project management, construction capabilities, and supporting services, Geldof provides solutions that meet strict industrial safety and performance standards. Although storage tanks in industrial ports may appear identical at first glance, every installation is unique. Ground conditions, seismic constraints, storage capacity and the integration with existing piping systems all influence the final design. As a result, each tank requires its own engineering calculations, structural analysis and construction planning.

STORAGE OF HYDROGEN CARRIERS

Hydrogen is widely expected to play an important role in the decarbonisation of energy systems. Because storing and transporting hydrogen at large scale remains challenging, the sector increasingly looks at hydrogen carriers. Among these, ammonia currently attracts significant attention, although alternatives such as methanol and Liquid Organic Hydrogen Carriers (LOHC) are also being explored.

"The technology is there, but projects will only move forward when the business case is right."

For companies such as Geldof, this technological diversity is not a constraint. The company's expertise lies in designing and constructing the large storage infrastructure required to safely handle these molecules. In addition to large atmospheric storage tanks, ammonia infrastructure may also involve specialised installations such as storage spheres or bullets, which the company is also capable of delivering.

In the chemical industry, ammonia tanks typically store 20,000 to 25,000 m³. In an energy context, storage infrastructure operates at a much larger scale, with tanks of 100,000 m³ and larger. These installations are designed as long-term assets, operating for around fifty years with periodic maintenance.

TECHNOLOGICAL READINESS

Geldof identified the potential importance of hydrogen storage as early as 2019. Since then, the company has invested in specialised manufacturing equipment and engineering capabilities required to build large storage installations. Heavy plate rolling machines, advanced cutting technologies and improved welding systems allow the company to process the thick steel plates needed for large-scale energy infrastructure.

However, the development of hydrogen infrastructure depends on more than technological readiness. The broader ecosystem around the sector ultimately determines whether projects move forward. "The technology is there, but projects will only move forward when the business case is right," states Peter Verrept, CEO of Geldof.

THE BROADER ENERGY TRANSITION

"Our role is to provide the infrastructure that allows industry to move towards more sustainable energy systems."

While hydrogen forms an important part of its long-term outlook, Geldof's activities extend far beyond a single technology. In fact, around 90–95% of the company's activities are already linked to the energy transition and the broader greening of industry. The company contributes to a wide range of projects related to biomass infrastructure and CO_2 storage systems. "Our role is to provide the infrastructure that allows industry to move towards more sustainable energy systems," says Verrept.

A STRONG INDUSTRIAL ECOSYSTEM

Belgium hosts major industrial clusters, particularly around the Port of Antwerp, where chemical production, logistics and storage activities are closely interconnected. Industry organisations also play an important role in this ecosystem, such as Agoria, which helps represent industrial concerns and maintain constructive dialogue with policymakers.

Geldof's activities nevertheless extend well beyond Belgium. Today, the company operates mainly across Western Europe, where roughly 70% of its activities take place, including around 20% in Belgium.

STORING WHAT THE FUTURE HOLDS

Even once the business case is there, large industrial infrastructure projects require long development timelines. From engineering and permitting to construction and commissioning, these projects can take several years, making the EU's 2030 targets particularly challenging. Long-term policy stability and consistent strategic direction are therefore crucial for companies investing in large-scale energy infrastructure. Nonetheless, Geldof has been preparing since 2019 and when the conditions are right, the company is ready to store the future of energy.

Geldof
Engicon group

STAKEHOLDERS

BELGIAN CLEAN HYDROGEN

INTERREGIONAL

.TECH BELGIUM Energy

Energy TECH BELGIUM is Belgium's prime energy & chemicals-oriented ecosystem in which our members discover collaboration opportunities, share knowledge, and establish partnerships that drive innovation and growth.

We analyse the different drivers that shape this market : geopolitics, energy transition technologies and technologies that improve plant operations and overall asset efficiency. With this information, we enlighten our ecosystem members to further advance their strategic business development.

We do so by offering :

- A fully digital community platform nourished with business intelligence from around the globe.
- Exclusive encounters with international energy industry decision makers.
- Sharing-experience workshops on particular topics.

The members of Energy TECH BELGIUM comprise a dynamic network of Belgian-based companies, each delivering innovative solutions to the energy & chemicals sector. Their expertise spans all areas over the lifetime of key energy assets and chemical plants: from design to decommissioning, from engineering to construction, during operations and maintenance, from long-lead items to critical components, from automation to AI... You name it, we have it !

Specifically in hydrogen we represent companies that develop, build and install electrolyzers and/or their critical components as well as all other products and services to safely manufacture, transport, store and use hydrogen.

Through partnerships with leading Belgian and international organizations and institutions, we connect Belgian expertise with global opportunities, enabling businesses to meet the ever-changing demands of the energy and chemical market.

www.agoria.be/nl/tech-belgium/energy/energy-tech-belgium

BELGIAN HYDROGEN COUNCIL

The **Belgian Hydrogen Council** has been established in 2023, as a collaboration between the two regionally oriented organisations WaterstofNet and Cluster Tweed. The council serves four purposes:

- Advise the Belgian policy makers on regional and national level, on their hydrogen strategies and the translation of the relevant European directives. The strength of the BHC is that they formulate a joint position that is supported by the full value chain (from producers to consumers) and as such unites different interests.
- Serve as a unique contact point for similar national hydrogen organisations & associations in other countries. The BHC has set up close contacts with hydrogen associations of the neighbouring countries (NL,DE,FR,LUX) and with other countries that might be the hydrogen supplier of the future (Oman, India, Brazil, Chile..).
- Promote the Belgian hydrogen ecosystem on the international scene. The BHC presents Belgium in international hydrogen conferences and develops a the Belgian 'hydrogen' narrative.
- Connect the existing Belgian ecosystems in Flanders and Wallonia, coordinated by the founding organisations WaterstofNet and Cluster Tweed.

www.belgianhydrogencouncil.be

essenscia
Chemistry meets life sciences

essenscia, as the national federation representing Belgium's chemical and life sciences industry, plays a central role in advancing a competitive, technology-neutral, and climate-aligned hydrogen economy. With the sector acting both as a major producer and consumer of hydrogen—used primarily as an essential feedstock—essenscia leverages this strategic position to guide policy design and support the scale-up of renewable and low-carbon hydrogen solutions.

Through expert analyses, technical insights, and industry data, essenscia contributes structured input to regulatory processes, including the implementation of the EU Renewable Energy Directive (RED III). The federation advocates for clear definitions, feasible targets, and enabling conditions that encourage investment while safeguarding the competitiveness of energy intensive industries. It also promotes the recognition of industrial by-product hydrogen as a valuable resource for accelerating decarbonisation through cost-efficient pathways.

In close dialogue with public authorities and stakeholders, essenscia engages in consultations, data-driven assessments, and collaborative platforms to foster coherent planning and transparent information exchange. By aligning regulatory frameworks with industrial realities, the federation strengthens Belgium's hydrogen ecosystem and supports the country's broader climate and industrial ambitions, positioning Belgium as a forward-looking hub for clean hydrogen innovation.

www.essenscia.be

von KARMAN INSTITUTE FOR FLUID DYNAMICS

The von Karman Institute for Fluid Dynamics (VKI) is a leading international research and education center specialized in Fluid Dynamics whose expertise positions it as a strategic stakeholder in Belgium's clean hydrogen transition. With decades of experience in aeronautics, aerospace, turbomachinery, industrial, environmental, and complex fluid dynamics, VKI contributes essential knowledge to the development of hydrogen technologies across aviation, maritime transport, industrial processes, and energy systems. Its research combines advanced numerical simulation with state-of-the-art experimental facilities, including cryogenic laboratories, sloshing tables, and the current development of VKHylab, a test center with unique capabilities enabling detailed investigation of hydrogen storage, two-phase heat transfer, and cryogenic behavior under both terrestrial and microgravity conditions.

VKI plays a central role in major European and Belgian hydrogen projects, supporting the design of next-generation liquid hydrogen tanks, propulsion systems, and safety models. The Institute also collaborates with industry partners on hydrogen pipeline transport, electrolyser optimization, and heat-exchanger development. With the upcoming VKHylab, VKI strengthens Belgium's industrial capability to position hydrogen as a strategic pillar of Europe's energy transition.

www.vki.ac.be

sirris innovation forward

Sirris is Belgium's innovation centre for the technology industry and supports companies across the entire hydrogen value chain. We help technology providers and industrial users accelerate R&D and industrialisation through applied research, test & demonstration infrastructure, and hands-on engineering support. Hydrogen is a cross-domain focus at Sirris, with strong capabilities in components, manufacturing processes, and validation testing. A key asset is our climatic testing infrastructure, including **a large-scale climate** chamber (located in the Port of Antwerp) enabling controlled testing from **–60°C to +60°C** and wide humidity ranges, supporting validation of equipment and systems operating in harsh environments. The facility supports validation for multiple industries, including energy and aerospace, where reliability under harsh environmental conditions is critical.

In addition, Sirris co-developed the **world's first mobile large climate chamber**, enabling manufacturers to test large, heavy or sensitive machinery directly at their own production site under extreme temperatures from **–40°C to +60°C**. Sirris also develops and evaluates advanced manufacturing routes for hydrogen-related components, including exploratory work on **laser texturing and additive manufacturing approaches for membranes and electrodes**, and supports companies with prototype development, testing, and upscaling. Sirris is an active stakeholder in the Belgian hydrogen ecosystem, including involvement in the **Belgian Hydrogen Council**, and contributes to collaborative R&D initiatives to strengthen Belgium's clean hydrogen industry.

Case stories of Sirris supporting the hydrogen eco-system:
PowiDian tests hydrogen-powered generator under extreme conditions:
www.sirris.be/en/inspiration/powidian-tests-hydrogen-powered-generator-under-extreme-conditions
Hydrogen panels for all: www.sirris.be/en/solhyd-hydrogen-panels

REGIONAL

Flanders

flux50 ENERGISING THE FUTURE

Flux50: Catalyst for the Energy Transition in Flanders

Flux50 is the Flemish spearhead cluster for energy and acts as a key catalyst for the energy transition in Flanders. It serves as a central facilitator for innovative energy projects, developed in collaboration with more than 230 members and supported financially by VLAIO. Our members are active across the main economic sectors, including energy, industry, construction, chemicals, and mobility, as well as ICT, legal, and financial services.

Our ecosystem provides a unique platform where all actors involved in the energy transition, including generation, transmission, distribution, storage and end use, cooperate. Through this approach, we aim at positioning Flanders internationally as a Smart Energy Region.

Built on three core pillars: Inspire | Connect | Accelerate, the cluster bridges the gap between strategic ambitions and market ready (industrial) solutions. As a knowledge hub, Flux50 informs and inspires companies about technological breakthroughs while facilitating cross sector collaboration.

Flux50 aims to contribute to the industrial energy transition and strengthen competitiveness by unlocking affordable, secure and sustainable energy for both energy intensive (ETS) and mid-sized (ETS2) industries. In this context, HET Atrium, the Holistic Energy Transition Forum, operates as a thinktank addressing system integration barriers by bringing together stakeholders from different sectors and energy vectors. This platform prioritises solutions for grid congestion and flexibility, while positioning the North Sea as a hybrid energy hub to ensure security of supply and accelerate the deployment of innovative energy hubs in our harbours.

Hydrogen constitutes a cornerstone of this integrated vision. Flux50 facilitated the hydrogen import study **CLICK**, demonstrating that large scale import is both technically and economically feasible for the defossilisation of our industrial clusters.

Through the coordination and support of innovative projects via VLAIO that engage the entire value chain, from offshore wind production to applications in the chemical sector, Flux50 strengthens the role of Flemish harbours. This approach contributes to anchoring and positioning Flanders as a strategic energy hub within a cross border European network.

www.flux50.com

WaterstofNet

WaterstofNet is a knowledge and collaboration platform with focus on **sustainable hydrogen**, based in Turnhout. This non-profit organisation initiates and coordinates hydrogen projects since 2009, partnering with industry, knowledge institutes and government. WaterstofNet was the driving force behind the first hydrogen production sites and hydrogen mobility initiatives in Flanders and the Netherlands and is closely monitoring the international developments on hydrogen in order to identify the most interesting opportunities for the local industry. Very recently, WaterstofNet has succeeded in securing European funding for a **first 'Hydrogen valley' in Flanders**, an integrated ecosystem with hydrogen production, storage and end-use applications in the three Flemish sea ports.

Since 2016, WaterstofNet coordinates the **Waterstof Industrie Cluster (WIC)**, uniting **160 members** ¬mainly Flanders-based- representing the full hydrogen value chain, including hydrogen production, transport, technology and consumption. WaterstofNet organises the exchange of knowledge among the different members and facilitates in setting up collaborations and developing projects.

As coordinator of this cluster, WaterstofNet acts as a unique contact point and representative voice for matters relating to policy, towards the Flemish, Belgian and Dutch government.

Also on the international level, WaterstofNet is a reference organisation for our region by representing Belgium in the European hydrogen association 'Hydrogen Europe' and through participation in several European hydrogen projects.

Together with Cluster Tweed, WaterstofNet has established the Belgian Hydrogen Council in 2023.

www.waterstofnet.eu/en

The **Electrochemistry Excellence Centre (ELEC)**, part of **VITO – the Flemish Institute for Technological Research**, is a **trusted industrial innovation partner** supporting the development and deployment of clean hydrogen technologies. ELEC works with international companies and technology developers to **de-risk innovation, accelerate time-to-market, and turn advanced electrochemical concepts into industrially viable solutions**.

ELEC offers **end-to-end support for hydrogen technologies**, from component design and prototyping to independent testing and industrial validation. With a **multidisciplinary team of engineers and researchers** and a portfolio of **flexible, harmonised testing infrastructures,** ELEC enables both the **co-development of tailor-made components** and the **qualification of industrial materials and prototypes** under realistic operating conditions. Parallel testing capabilities and application-driven protocols allow partners to **rapidly screen, compare, and optimise technologies**, significantly reducing development cycles.

Covering **alkaline, AEM, PEM, and medium-temperature electrolysis technologies** across a wide range of **Technology Readiness Levels**, ELEC combines technical depth with a strong **techno-economic perspective**. By working with ELEC, industrial partners gain access to **independent validation, actionable data, and engineering-driven insight**, strengthening collaboration with Belgium as a reliable hub for clean hydrogen.

www.vito.be/en

Power-to-Molecules: towards a carbon-free industry

The transition to a sustainable industry requires innovative technologies that reduce dependence on fossil fuels.

Within EnergyVille, the Power-to-Molecules research line supports the hydrogen sector by developing scalable solutions for green hydrogen production and the conversion of CO_2 into valuable molecules, with a strong focus on advancing component, upscaling, sustainability and systems integration.

Research activities advance cost-effective hydrogen production through electrolysis, including alkaline, PEM and photo-electrochemical (PEC) technologies. Since 2021, researchers from VITO, imec and Hasselt University have developed advanced membrane electrode assemblies , nanomesh electrodes and catalyst in close collaboration with industrial partners. Recent investments in pilot-scale infrastructure enable nanomesh electrode upscaling, thorough lifetime testing, optimisation and validation of next-generation electrolysis systems, paving the way for industrial-scale green hydrogen production powered by renewable energy.

In parallel, technologies are being developed for the electrochemical and photo-electrochemical conversion of CO_2 into syngas, alcohol, and other value-added molecules, which are essential for e-fuels and sustainable chemicals. This includes advanced catalysts, gas diffusion electrodes and integrated CO_2 capture concepts.

Finally, a system-level approach is applied with modelling capacity, integrating technologies across the energy value chain while considering economic feasibility, market potential and regulatory frameworks, supporting the development of sustainable hydrogen-based industrial ecosystems.

www.energyville.be

OCAS is an industry-oriented and applied R&D company, with focus on metals, coatings and their applications. Amongst other disciplines, the interaction between Hydrogen and materials has been thoroughly investigated by OCAS skilled personnel both fundamentally and in practical applications. For more than 20 years, researchers have been building up experience in the scientific understanding of Hydrogen interaction, the quantification of Hydrogen, mechanical testing in Hydrogen atmosphere and numerical modelling for Hydrogen-metal behaviour enabling predictions and fit for purpose assessments.

As a proof of our continuous investment in differentiating test equipment and methodologies, in 2025 OCAS inaugurated its brand new GET (Global Energy Transition) Lab, where the testing of materials under static and dynamic conditions in high-pressure Hydrogen gas can be conducted in a safe and controlled manner. Beyond testing in Hydrogen gas, the new GET-lab also enables testing in other gases like CO2 and mixtures of Hydrogen, natural gas, and (in the future) other chemical compounds.

With this new lab, OCAS stays at the forefront of Hydrogen research and contributes to address future material challenges in the broader industry with regards to hydrogen-material compatibility by next generation innovative testing. OCAS is internationally renowned for its work and research in the field of Hydrogen and is founder of the SteelyHydrogen International Conference, a milestone event for the scientific and industrial community that is organised every 3-4 years in Ghent.

More info: ir Steven Keyzer, Business Development, steven.keyzer@ocas.technology

www.ocas.be

Ports

Port of Antwerp Bruges

Port of Antwerp-Bruges (POAB) is the second largest port in Europe and hosts the largest petrochemical cluster on the continent. In addition to that, POAB is the 5th largest bunkering hub in the world. In a fast-changing world with geopolitical turbulence, POAB is positioning itself to become a crucial clean hydrogen (derivatives) import and throughput hub for North-West Europe, just like it has been doing for LNG for decades. In this way, it can maintain these leading positions in the world, decarbonize its own petrochemical industry, increase energy independence, and ensure security of supply. To achieve this goal, POAB has developed a hydrogen strategy based on **three pillars**:

- **Supply** – Due to Belgium's limited availability of land and renewable energy potential, we will be largely dependent on imports for the sourcing of its low carbon molecules. POAB has been scanning the world for the most competitive regions and projects and tries to identify partnerships and potential investments in ports internationally (like in Oman, Brazil and Namibia) through our subsidiary Port of Antwerp-Bruges International (POABi).
- **Infrastructure** – Storage operators like Vopak, Advario, Sea Tank and VTTI are developing import terminals in our port to store hydrogen derivatives like ammonia. Air Liquide has the world's first commercial ammonia cracker operational in Antwerp, with Air Products also looking to build one. Fluxys is constructing hydrogen pipelines to connect the most important consumers in Belgium and Germany to these projects while Pipelink is developing an open access ammonia backbone in the Antwerp port area.
- **Offtake** – Our petrochemical cluster in Antwerp already consumes 500k tons of grey hydrogen while the maritime and aviation sector are likely to become new consumers under the right economic conditions. Through strong logistical connections with the European hinterland, including Germany, we also want to support these regions in their sustainability efforts by supplying hydrogen (carriers).

www.portofantwerpbruges.com

North Sea Port

The cross-border industry cluster at North Sea Port is currently the largest hydrogen hub in the Benelux region. The prominent presence of hydrogen activities will also attract new, innovative players.

North Sea Port is centrally located in important pipeline corridors in both Belgium (Zeebrugge-Antwerp) and the Netherlands (Rotterdam-Chemelot), and its location at the mouth of the Western Scheldt also makes it a promising hub for bunkering sustainable fuels.

If sustainable hydrogen is also produced on a large scale in other parts of the world, some of that hydrogen will be imported via North Sea Port. Together with large-scale local demand, as well as sustainable production, good space availability, storage capacity, offshore wind landfall, the presence of deep-sea port infrastructure and strong hinterland connections via road, rail and inland navigation, existing and future H2&CO2 pipeline networks, this lays the foundation for North Sea Port as a hydrogen hub on a European scale.

www.northseaport.com/en

Port Oostende

As an innovation-driven maritime hub at the North Sea, Port Oostende actively supports the development of Belgium's clean hydrogen ecosystem. Building on its strong track record in offshore renewable energy, the port provides an enabling environment for hydrogen production, demonstration, and deployment across the maritime and industrial value chain.

A recent milestone is the launch of the first green hydrogen bunkering station for offshore activities, developed by JERA Nex bp and now fully operational within the port. This pilot installation represents a major step towards decarbonising offshore wind operations. During the demonstration phase, vessels such as Windcat's Hydrocat 48 will be fuelled with green hydrogen, with the facility designed to supply multiple ships per day.

Port Oostende offers dedicated infrastructure, safe operational frameworks, and close collaboration with technology partners to advance the uptake of hydrogen in maritime applications. These initiatives contribute to broader regional and national climate objectives, supporting cleaner offshore logistics, sustainable mobility solutions, and low-carbon port operations.

By fostering pioneering hydrogen projects and strengthening its role within the blue economy, Port Oostende positions itself as a key accelerator in Belgium's transition towards a sustainable future.

www.portofoostende.be/en

Wallonia

The **Cluster TWEED** (Technologie Wallonne Énergie – Environnement et Développement durable) is an organization that brings together companies, research centers, universities, and public bodies active in the field of energy transition. Today, the association has over **250 members**. The cluster organizes several activities to foster exchanges between companies with shared interests, as well as between businesses and the public sector. TWEED also participates in international conferences to promote Walloon stakeholders and encourage partnerships abroad.

Cluster TWEED has positioned itself as a **recognized center of expertise** and a **trusted partner** for private and public actors involved in the sustainable challenges related to energy and hydrogen. The cluster offers cutting-edge expertise in **energy, hydrogen, heating networks, CO_2, sustainable mobility**, and **water** infrastructure.

Regarding hydrogen, **H2Hub Wallonia**, the dedicated hydrogen ecosystem within Cluster TWEED, serves as the **reference platform** for a comprehensive overview of hydrogen initiatives in Wallonia. Cluster TWEED is involved in the e-WallonHY initiative, which brings together various industrial and R&D players in Wallonia to combine their efforts and drive innovation through hydrogen technologies (materials, e-fuels, etc.). TWEED is also a partner in several Belgian and international projects (Horizon Europe, Interreg NWE, etc.) related to hydrogen.

Together with WaterstofNet, Cluster TWEED has established the Belgian Hydrogen Council in 2023.

www.clusters.wallonie.be/tweed/home.html

Accelerating the Sustainable Energy Transition through Innovation

Materia Nova is a Belgian research center and technology accelerator that develops circular materials and breakthrough processes to drive industrial decarbonization. Through its Sustainable Energy Transition (TED) R&I program, it addresses the entire hydrogen value chain:

- Production: Disruptive processes for turquoise hydrogen via methane plasmalysis (HECO2, H2PY flagships), ammonia reforming (SynFoNHY), and wastewater electrocatalysis (WalBioPower, FTJ-ILES).
- Storage & Transport: Innovation in polymer nanocomposites and barrier layers for 5th generation hydrogen tanks (FTJ ILES).
- Circular Re-use: New plasma reactors for e-fuels production (EFES).
- Energy Recovery: Clean electricity and heat from clean hydrogen thanks to 3rd generation solid oxide cells (CLUED-O).

Bridging the gap from lab to TRL7, Materia Nova ensures project resilience through a robust Life Cycle Thinking approach (Eco-design, LCA/LCC/S-LCA). This scientific rigor supports the center's ESG commitment, providing industry with sustainable, low-risk, and socially responsible pathways.

As a strategic partner of the Walloon S3 strategy and active member of the IIS e-WallonHy and CETWA, Materia Nova scales innovations to guarantee long-term competitiveness and environmental integrity for the hydrogen economy.

www.materianova.be/en

The research and development strategy of Certech is based on the synergies between three major themes, namely: environment, polymer materials technology, and chemistry and industrial processes, supported by an analytical and technological services platform.

Certech contributes to research and innovation activities that address environmentally friendly technologies while supporting sustainable economic development. These activities encompass the following topics :

- Local integration of mixed renewable electricity sources (for domestic or industrial use) through hydrogen production or energy storage in batteries.
- Reduction of hydrogen storage costs, for example through solid-state storage in porous materials, such as Metal-Organic Frameworks (MOFs). These MOFs must meet both technical and regulatory requirements. The porous solids are developed in dedicated continuous reactors to increase production capacity while reducing synthesis costs and environmental impact.

The equipment and tools available at Certech for the development of hydrogen technologies include:

- Characterization and quantification of hydrogen in gas mixtures.
- Microreactors for gas sorption on solid materials.
- Intensified continuous reactors for the synthesis of solid adsorbents.
- Autoclaves for hydrothermal synthesis.

www.certech.be

District Cleantech is an industrial hub accelerating the energy and industrial transition in Wallonia. Located in Charleroi on a former industrial site undergoing redevelopment, it brings together industrial players, startups, researchers, investors and public stakeholders to turn cleantech innovation into scalable industrial solutions.

Hydrogen is a key strategic focus through the Hydrogen, CCUS & Energy platform, addressing Belgium's specific challenges: limited availability of renewable electricity, high energy costs, and strong pressure to decarbonize industry. Rather than relying solely on electricity-intensive solutions, District Cleantech focuses on low-carbon hydrogen pathways with reduced electrical intensity. It supports pilot projects exploring breakthrough technologies such as enzymatic processes, plasma-based routes, advanced membranes and next-generation electrolysis, with the objective of accelerating industrial maturity.

While dedicated hydrogen testing facilities are currently under development, District Cleantech already enables testing and validation under real or near-industrial conditions through its ecosystem. This includes infrastructures operated by its members, such as CRM and BeBlue's fuel cell and materials testing capabilities, the combustion furnace at ULB, and hydrogen-related facilities available at MateriaNova and other partners.

In the long term, District Cleantech aims to contribute to the development of a Walloon Hydrogen Valley, supporting a full value chain from pilot projects to industrial scale-up.

www.districtcleantech.be

CRM Group (Centre for Research in Metallurgy) is a Belgian non-profit research center that has been supporting companies for more than 75 years in the development and Scale-up of innovative products, processes, and technologies across a broad spectrum of metal-related fields.

Within the hydrogen value chain, CRM has built extensive expertise covering hydrogen production by electrolysis, hydrogen–materials interactions, the use of hydrogen in industrial processes, and fuel cell applications for mobility. CRM has developed its own dedicated equipment to quantify diffusible hydrogen content (ISO 17025 accredited), and has earned a long standing reputation for its know how in hydrogen charging and measurement techniques, as well as in the understanding of hydrogen–metal interactions, hydrogen embrittlement mechanisms, and mitigation strategies.

In collaboration with Beblue, CRM has established a new testing platform equipped to perform mechanical and fatigue testing of materials and components under demanding conditions — including cryogenic environments and gaseous hydrogen — as well as high pressure hydrogen autoclave testing and permeation measurements.

CRM is also active in the development and industrialization support of alkaline electrolyzer electrodes, offering a complete value proposition that includes electrode manufacturing, characterization, and validation at both laboratory and pilot scale. In addition, CRM has designed and patented innovative coated metallic bipolar plates for fuel cell applications.

Lastly, CRM Group serves as the coordinator of the Walloon Strategic Innovation Initiative dedicated to accelerating the development of a low-carbon hydrogen economy in Wallonia through collaborative innovation, bringing together around one hundred partners from the region.

www.crmgroup.be/en

Cenaero is a leading private applied research center based in Gosselies, Belgium, dedicated to accelerating industrial innovation through advanced numerical simulation, artificial intelligence, and high performance computing. Internationally recognized through collaborations with major industrial partners such as Safran, Cenaero supports both large companies and SMEs in developing more efficient, competitive, and sustainable products. The center provides tailored R&D solutions and advanced digital engineering capabilities to address complex industrial challenges. Cenaero's expertise covers multidisciplinary simulation and optimization, including computational fluid dynamics, structural and thermal mechanics, acoustics, manufacturing process simulation, and lifetime prediction of complex systems. These competencies support innovation in aerospace, advanced manufacturing, energy, and Built Environment in both civil and military contexts.

In the development of advanced hydrogen (H_2) technologies, Cenaero develops thermo-electro-chemical models to optimize hydrogen production systems such as electrolysers and to improve conversion technologies including fuel cells, combustion engines, and thermal management subsystems. Cenaero also contributes to the design and reliability assessment of hydrogen storage and transport solutions, including composite storage tanks, hydrogen diffusion and permeation in pipes and ducts, and fluid-structure interactions in pressurized systems. Advanced simulation tools enable the optimization of critical components such as valves and pipelines through coating modeling, additive manufacturing design, and manufacturability analysis. In addition, Cenaero supports the integration of hydrogen technologies into real-world applications, from aerospace and transport systems to stationary energy infrastructures and smart energy management solutions.

Cenaero also operates the Walloon Tier-1 High-Performance Computing (HPC) infrastructure, enabling large-scale simulations and data-intensive research for industrial and academic partners, while supporting companies in adopting HPC technologies to accelerate innovation.

www.cenaero.be

Technifutur® is one of the 22 Wallonia-accredited vocational training centres. Established in 1991 by companies and social partners, it was the first competence center in the region and has consistently evolved to meet industrial needs.

Technifutur® delivers targeted training to company employees, jobseekers and schools. In 2024, the center trained 15,115 participants, collaborated with 588 companies and 220 schools, and delivered 664,411 hours of training and awareness sessions. Its strong regional ecosystem and international partnerships ensure programs remain aligned with current and future industrial demands.

In 2017, training offers were expanded into structured professional courses on light vehicles, including a hydrogen fuel cell vehicle course developed through the European project in collaboration with the ULiege.

Today, Technifutur® continues to expand its offers based on local industry needs, focusing on heavy duty vehicles, safety, and maintenance through the Northwest Europe Project called GreenSKHy including fuel cell and intern combustion engines technologies.

As a recognized actor in hydrogen training, Technifutur® is an active member of the Belgian Hydrogen Council and the Walloon hydrogen platform E-WallonHy, positioning the center at the core of the hydrogen ecosystem. By delivering industry-driven, future-ready training, Technifutur® strengthens workforce capabilities, supports economic resilience, and positions itself as a trusted partner for organizations seeking strategic skills.

www.technifutur.be

Brussels

Innoviris is the public organisation that funds and guides innovation, scientific research and science promotion in the Brussels-Capital Region. Within this framework, Innoviris co-finances and supports cutting-edge innovation projects

and scientific research both at startups and large companies, at research centres, the nonprofit sector and the public sector to stimulate creative solutions that can contribute to the Brussels region of tomorrow.

Our focus is on research and innovation projects that have the potential to address urban challenges, including in the areas of mobility, nutrition, health and social inclusion, to create quality employment and to contribute to the social and environmental transition of our economy.

To that end, the Regional Innovation Plan 2021-2027 serves as a compass to develop all subsidy and awareness-raising instruments, aligned with the objectives of the Strategy for Intelligent Specialisation and regional strategic plans.

Furthermore, we raise awareness about STEM directions and career opportunities, and about the role of science in society.

While facilitating collaborations within the local ecosystem, we represent the Brussels- Capital Region at national, European and international level in the field of research and innovation.

www.innoviris.brussels

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