


Investment Opportunities in Belgium/Wallonia

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Introduction

Belgium is considered to be the capital of Europe as it is located at the crossroads of English, German and Latin cultures. Its capital city, Brussels, is the seat of the European Union, and welcomes several other international institutions such as the headquarter of NATO. Belgium offers therefore a direct access to decision makers both at the political level and in the private sector in a very international and multicultural environment.

From Belgium, companies can reach 66% of the European market in less than 6 hours, which represents around 500 million of consumers. It takes even less than 2 hours to reach the continent's main financial cities, such as London, Paris, Frankfurt and Luxembourg.

Belgium's southern region, Wallonia, is particularly well connected to the world with 2 airports. Brussels South Charleroi Airport is the 2nd national airport after Brussels Airport with over 190 destinations. It is also among the most punctual in the world.

Liège Airport, CEIV Pharma certified, is the 1st Belgian Cargo Airport. During the COVID-19 crisis, it has been designated by the WHO as its Europe's logistics platform. Liège Airport is also an important business center with a total of 10 000 employees and it welcomes multinational companies like Alibaba. The region also has a particularly attractive multimodal network, as the Walloon motorway and rail networks are among the densest in Europe.

But Belgium/Wallonia is not only strategic by its location. It is also **a country oriented towards innovation.** According to the European Innovation Scoreboard 2023, Belgium's overall innovation performance is 125.8% higher than the European average . Belgium was also found to have improved its innovation performance by 14.1% between 2016 and 2023, well above the European average of 8.5%.

These scores made Belgium the 5th most innovative country in the European Union ranking ahead of Germany (7th), Luxembourg (8th) and France (11th) . Belgium is also the 1st country in terms of R&D intensity (with 3,44% of GDP invested in R&D). With 15,8 researchers per 1000 employees, the country has also the highest rate of researchers per capita. Therefore, if you are looking to develop new solutions, you should definitely consider to partner with Belgium as the country has all the resources in terms of skilled workforce and infrastructures!

Over the years, the country has specialized in various sectors, enabling the emergence of strong ecosystems. These ecosystems cover a wide range of areas, from **biotechnologies, plastics recycling, renewable energies and decarbonization.** The aim of this document is to present Belgium/Wallonia's strengths in these strategic sectors, as well as the various investment opportunities available.

[1]European Commission, European Innovation Scoreboard 2023, p .55.
[2]European Commission, European Innovation Scoreboard 2023, p.28.

Life sciences

With a century of experience in pharmaceutical, Belgium/Wallonia has attained unique expertise in the research, development, production of vaccines and biological medecines, and excels in the fields of cells and gene therapies. Life sciences is the first strategic sector of Wallonia's economy, representing around 8% of the GDP.

State-of-the art ecosystem

Wallonia has particularly active and innovative scientific and academic ecosystems, which have been created by investing equally in the growth of scientific excellence on the one hand, and entrepreneurial leadership on the other.

Wallonia is home to several key players and has a complete value chain going from research, early biotechs, late-stage biotechs, CRO, CMO and CDMOS.

The presence of multinationals such as GSK Vaccines, Baxter, Johnson & Johnson, UCB, IBA, Zoetis, Abbvie , Eurogentec-Kaneka, Takeda, Lonza... also acts as a driving force for SMEs and start-ups, in addition to creating sustained relationships with clusters and other international partners. Companies such as OncoDNA, Univercells and Promethera are all examples of companies in the sector that were founded in Wallonia before expanding internationally.

More broadly, the Walloon life sciences ecosystem is also ideally located at the heart of other major Western European ecosystems, and close to other major players such as Pfizer and Ghent University for clinical trials.

Biotech hubs in Wallonia

As a veritable hub for life sciences, Wallonia offers over 100,000 sqm of office and lab space:

- **Biopark Charleroi:** home to leading cell therapy companies and the future EU Biotech Campus. With 3 research academic institutes and more than 3200 highly skilled people, it has 60.000m² building in services and 50.000 m² ongoing developments.
- **Liege Science Park:** the park offers specialized services for companies focusing on biotechs with a focus on public-private collaborations. Liège Science Park's location on the edge of the university campus gives permanent contacts with the multidisciplinary departments of the University of Liège. The park's reputation is also enhanced by the presence of business incubators and specialized high-tech centers.
- **Louvain-La-Neuve Science Park:** all resident companies benefit from access to the Louvain Innovation Network, an ecosystem for staying at the forefront of innovation and developing new projects in partnership with companies and universities, with over 3,000 researchers and doctoral students, 200 laboratories, 21 research institutes, 33 technology platforms and 2 university clinics. By 2025, at a few kilometers from Louvain-La-Neuve, Quantum Biospace will offer 18 hectares of «tailor-made real estate solutions» for biotech companies. There will be offices and laboratories for research and development, space for manufacturing and marketing new products, and service facilities (hotel, restaurant and conference center). Its mission is to accelerate the emergence of groundbreaking approaches to drug discovery, development, and manufacturing, situated at the intersection of BioTech and DeepTech. This represents a significant paradigm shift in the biopharmaceutical industry, primarily steered by Artificial Intelligence within the DeepTech domain, reshaping biopharmaceutical R&D.
- **Novalis Science Park :** is home to the Novalis Business Centre, a 6,000 m² building equipped with high-tech laboratories and a high level of security. In partnership with the academic world, this park is home to high value-added companies. These companies are active in the animal and environmental health sector, with links to human health. Dedicated to biotechnologies in fields such as immunology and cell therapy, the Center hosts a preclinical hub that is unique in Europe.

Companies established in the Walloon Region can also benefit from the **strong expertise and ecosystem around IMEC**, which is located nearby.

Strong expertise in clinical trials

With a strong expertise in the field of clinical trials, Belgian ranks above the European average in first-in-human trials. Belgium is consistently ranked among European leaders (2nd) in clinical trials per capita, trials testing cancer drugs, and trials testing rare diseases. The country also played a key role in clinical trials testing the life-saving mRNA vaccine. On average, **20% of all European cancer drug clinical trials are conducted in Belgium.**

Opportunities

- **R&D Collaboration:** Partnering with Wallonia-based biotech research centers to co-develop new drug formulations, medical technologies, or healthcare solutions tailored for diseases prevalent in Saudi Arabia: cardiovascular, diabetes, oncology, obesity, hypertension, etc.
- **Establishment of Biotech Parks:** Using the model of successful biotech hubs in Wallonia, Saudi investors could create biotech parks in Saudi Arabia, leveraging Walloon expertise.
- **Pharma Investments:** Investing in established Walloon biopharma companies such as Therathrame, EyeDPharma, ONCODNA, UNIZIMA, etc., either directly or through venture capital funds that specialize in life sciences.
- **Case study 1:** co-investment of a Saudi fund specialized in healthcare such as SHI (Suleiman Al Habib Investment arm) or the PIF with Wallonie Entreprendre (WE) which is the government investment arm by the region of Wallonia in Belgium, one of the leading global regions in life sciences and biotech. They are exploring potential collaborations with international investors across multiple opportunities in Wallonia and globally (Venture, PE, Pre-IPO, Public Markets, etc.).
- **Case study 2:** Investment or collaboration with a leading Walloon biotech company to bring innovative health treatments to Saudi healthcare institutions.

Waste management & Recycling

> Europe's Recycling valley approaches waste management in a comprehensive way, integrating technological innovation, policy development, public engagement, and public-private collaboration across sectors. This holistic strategy positions Wallonia as a leader in sustainable waste management and recycling efforts.

Integrated ecosystem

With state-of-the-art sorting centres, specialist R&D centres, world-class production units, a network of plastics manufacturers and support companies (industry 4.0, etc.), public support in the form of tax incentives for investment in sustainable businesses, as well as subsidies for research and development, not to mention strong customer sectors such as construction, agri-food, water, bio-pharma and greentech, the Walloon waste management and recycling ecosystem is attractive right across the value chain.

Ambitious targets

Belgium's recycling targets exceed those of the rest of Europe, with the ambition of finding a recycling solution for all household packaging put on the market by 2025. Wallonia, for its part, has set itself the target of achieving a recycling rate of 65% by 2025.

EV batteries ecosystem

Wallonia is establishing itself on the international stage by attracting major investment in the electric battery sector. The Walloon government recently selected seven projects, including that of Chinese company Nuode, to develop an innovative battery ecosystem. Unlike other European regions, which are attracting massive investment in the battery sector, Wallonia's approach focuses on innovation rather than quantity of funding. The public Wallonie Entreprendre fund launched a 50 million € call for projects to create a battery ecosystem. Rather than competing with gigafactories, **Wallonia is focusing on creating added value by concentrating on recycling and the manufacture of battery components.** Seven projects were selected following six months of evaluation, representing a total investment of 713 million euros. The most significant project is that of Nuode, a listed Chinese company which plans to invest 500 million euros in the construction of a copper foil production plant. This essential component is used to manufacture Li-ion batteries for electric vehicles. Other notable projects in addition to Nuode include Prayon, a Belgian chemical producer targeting the growing Li-ion battery market. Prayon plans to build a polyphosphoric acid production unit. Recycling initiatives such as Revatech and EnviroBelgium, as well as start-ups such as Octave and Watt4Ever, complete the ecosystem with a focus on battery reconditioning and recycling.

Wallonia is also ideally situated right next to the Hauts-de-France battery ecosystem, where several gigafactories are being set up to produce electric batteries.

Focus on innovation

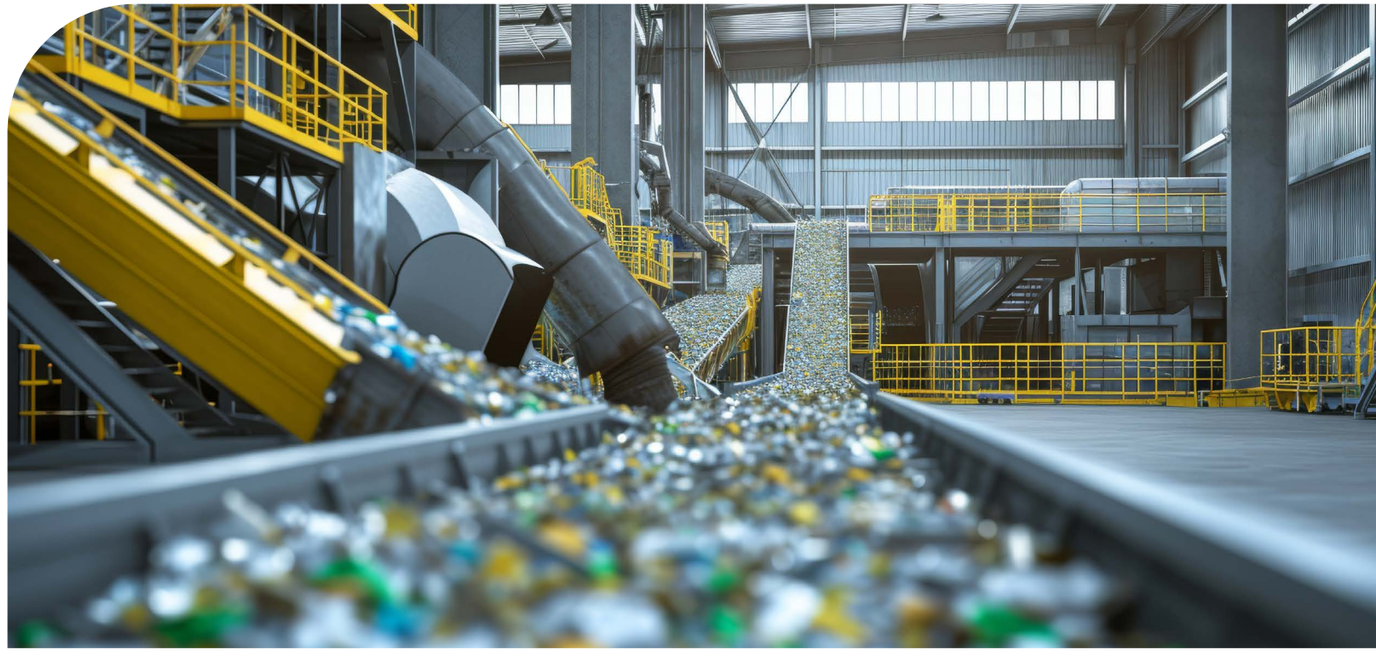
Belgium has **5 sorting centres dedicated to recycling waste**, 3 of which are in Wallonia: Val'Up in Ghlin, Valtris for Tibi in Charleroi and the new Sitel site in Hermalle-sous-Huy. These 3 sites are connected to the 7 inter-municipal household waste management organizations in charge of collection and linked to the **two hubs dedicated to «Recycling»** in Charleroi and Liège, with a third under development on the Namur - Luxembourg axis. There are research centres developing new technologies for recycling and waste treatment:

- **Celabor**, which provides scientific and technical support to companies in the agri-food (nutrition and extraction), environment, packaging, paper/cardboard and textile sectors;
- **Centexbel**, an information and training centre;
- **Centre Terre et Pierre**, dedicated to Mineral Processing;
- **Certech**, a research and development partner and provider of analytical and technological services for companies involved in chemical-related activities;
- **Materia Nova**, which transfers technology between the worlds of fundamental research and industry;
- **Sirris**, the Belgian technology industry's collective centre, which has green transition as one of its 5 reference areas.
- **District Cleantech** aims to facilitate the transition towards decarbonization of Charleroi Metropole and Walloon companies by 2026/2040. It will bring together multiple actors, such as companies, startups, research centers, academics and education stakeholders, around an innovation, incubation and education platform to accelerate the development of cleantech solutions. Our ambition is to turn Cleantech District into a place of excellence in Wallonia, Belgium and Europe for specific Cleantech themes through the following priorities: Energy Transition via **hydrogen development and CCU technologies**, Sustainable Housing & Energy, Circular Economy and Waste Management;
- **REVERSE METALURGY** aims to create, in Wallonia, an internationally recognized platform for industrial, technological and scientific excellence in the field of metal recycling. The recovery of waste, in particular waste containing metals, is strategic for the Walloon economy in terms of supply of raw materials for our industry. It also represents a significant potential for value creation based on a long and strong experience in metallurgy;
- **REMIND** Wallonia is a program to set up a real Walloon "mineral" hub to become Europe's mineral valley by 2030. This project focuses on 4 priority axes:- materials intended for renovation or sustainable construction, manufacture of high-performance concrete for the building and offshore sectors, development of hardned materials, and studies on construction materials and road engineering materials whose chemical stability is ensured by a carbonation process.

The universities (ULG, ULB, UNamur and UMons) are also active in this field, and the University of Liège has a cutting-edge research laboratory, the Centre Polytechnique de Recherche et d'Innovation en Matériaux (CEPRIM), which is working on the development of new recycling technologies.

The Plastiwin cluster and the Greenwin competitiveness cluster have also launched calls for projects in this field, involving companies of all sizes, universities and research centres.

Innovative projects include robot-assisted conveyor belts to speed up waste classification, and near-infrared sensor technology to optimize sorting quality by distinguishing between different types of plastic, thereby facilitating the sorting of undesirable materials, all assisted by Artificial Intelligence applications.

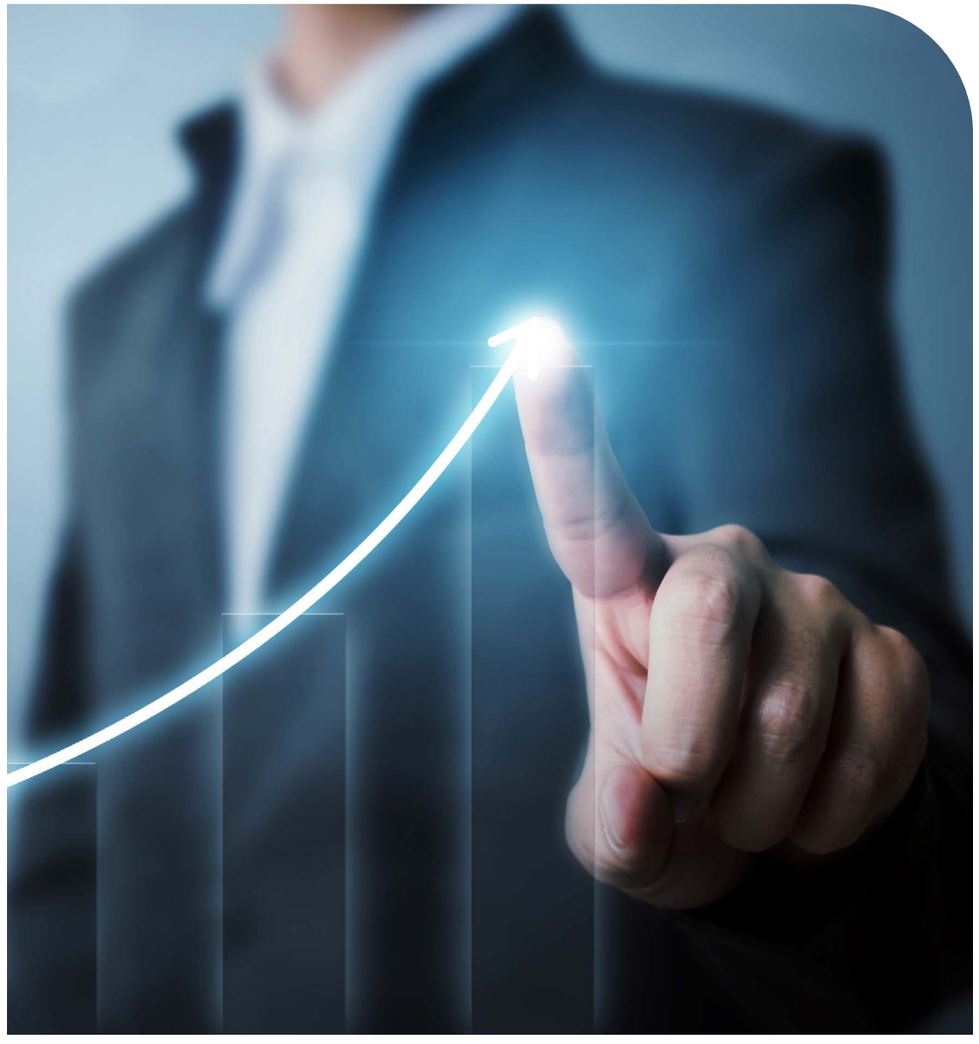


Walloon companies at the cutting edge

- **Tivaco**, active in the recycling and compounding of polypropylene (PP), polyethylene (PE), polystyrene (PS), flexible PVC and elastomers (TPE) such as SBS, SEBS, EVA, TPU and RULO, which focuses on the recycling and compounding of rigid PVC.
- **Reprocover**, active in the development of prefabricated products made from RTS (Reprocessed ThermoSet) materials derived from thermosetting plastics. Reprocover is part of the C-Blade project set up by Sirris to develop circular solutions covering the eco-design, dismantling and recycling of wind turbine blades. The project is one of the winners of the Belgium Builds Back Circular funding package.
- **Rubbergreen** recycles rubber by-products to make sports equipment or anti-vibration devices for the rail industry (trams and underground trains).
- **Futerro**, a world leader in bioplastics, which has developed a PLA (poly-lactic acid) polymer that is biodegradable and made from renewable natural raw materials, and for which it has developed a chemical recycling technology.
- **Ecosteryl**, a specialist in the decontamination of medical waste, paving the way for its material recovery.
- **Vinventions**, a manufacturer of synthetic wine corks, produces a range based on polymers derived from sugar cane, which are totally recyclable or where 50% of the raw material comes from plastic recycling.

Opportunities

- **R&D Collaboration:** Joint discussions on potential investments from PIF's CEER company in setting up an R&D center for EV battery production and recycling at the heart of Europe in Wallonia;
- **Technology transfer:** Partnership or investments in capital between Saudi Investment Recycling (SIRC) and Belgian waste management companies such as COMET, RENWI, ECOSTERYL or HYDROMETAL for the creation of a nation-wide strategy to recycle different types of waste (municipal, mineral, metallic, medical, etc.) and potentially create a Saudi made manufacturing plant to produce waste treatment equipment in KSA;
- **Direct investments in R&D platforms**: Direct investments in the development of R&D platforms such as District Cleantech, GREENWIN, REMIND or REVERSE METALLURGY for the development of mutually beneficial solutions to treat and recycle all types of waste in the Kingdom. Collaboration could include regulatory discussions with Saudi MEWA, training of Saudi experts in Wallonia with private or institutional actors, organization of joint seminars, conferences or information events.



Renewable energies and decarbonization:

> Belgium has launched a major hydrogen strategy to position itself as an European hub for hydrogen import and transit. A hydrogen transport network is already present on the Belgian territory. It has been developed by a private player to supply various industrial customers spread across Belgium, France and the Netherlands.

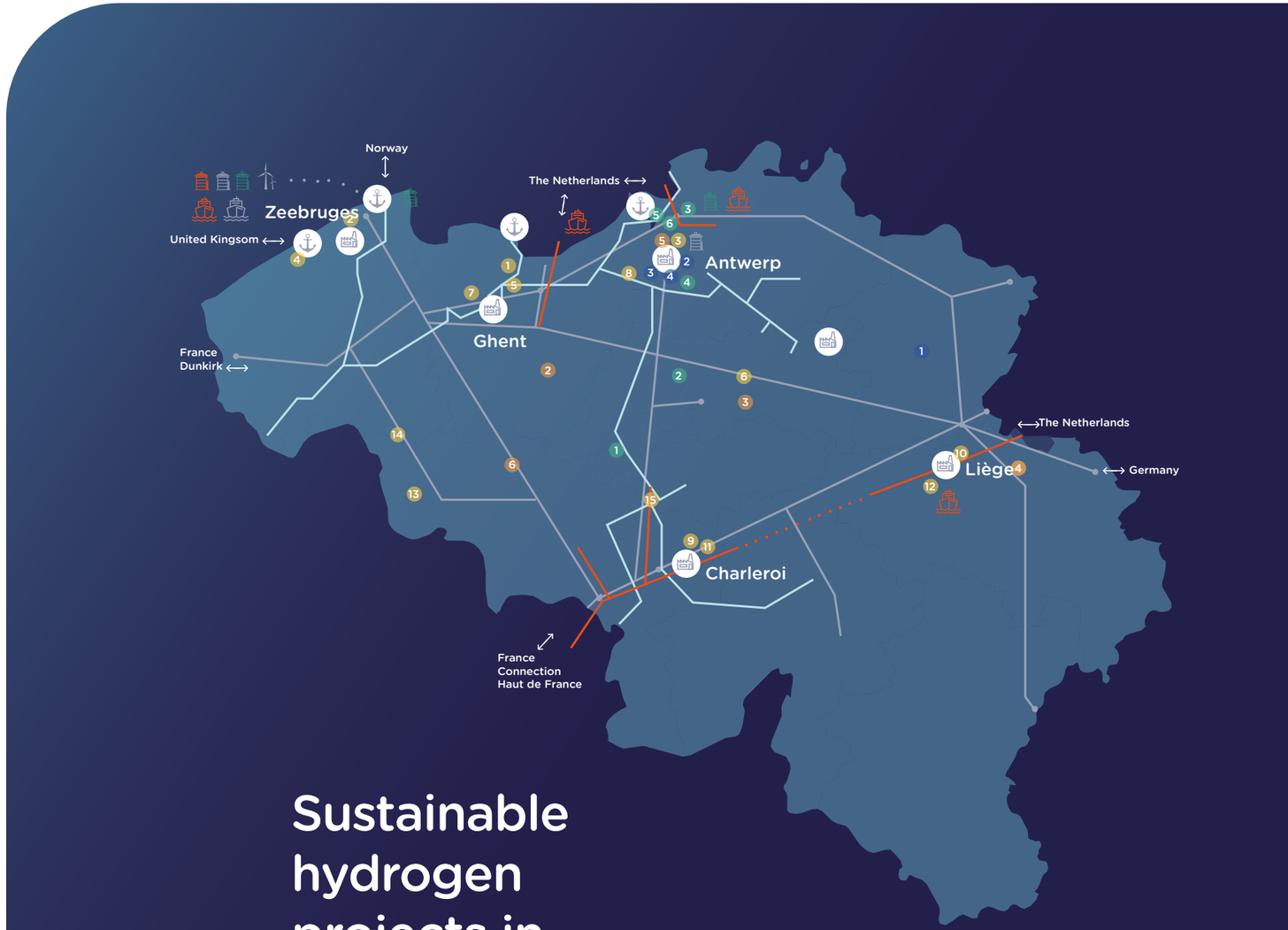
Legend

- Existing private hydrogen network
- H2 pipeline
- CO2 pipeline
- Source of wind energy
- industry cluster
- Seaport
- CH4 storage (liquid/gas)
- CO2 terminaling buffer storate (liquid)
- H2 terminaling buffer storage blue hydrogen production
- co2 everseas export
- H2 import (different carriers)

WaterstofNet

TWEED

fluxys



Sustainable hydrogen projects in Belgium

World leader for Hydrogen technologies

Many Belgian companies and institutes are already active in the hydrogen value chain, whether in the development of production and consumption technologies, in their integration into more complex solutions or in their exploitation supporting the company's core business. Among them, we can mention John Cockerill, which offers the most powerful electrolysers on the market, capable of producing up to 1300Nm³ per hour (equivalent to 6.5 megawatts (MW). We can also mention H2Win which has developed an enzyme-based catalyst process that produces green hydrogen without rare metals! You will find on the figure below most of the H2 players in Belgium:

Belgium wants to strengthen its leading position for companies and research institutions active in the technologies of H2-molecules and H2-derivatives.

The Energy Transition Fund supports, among other things, research and development on the production, transport and storage of hydrogen and its derivatives. It has been active since 2017, will operate until 2025 and subsidises various projects following an annual call for projects for a total amount of 20 to 30 million euros per year.

The call for projects Clean Hydrogen for Clean Industry is organized within the framework of Belgium's national recovery and resilience plan. It focusses on the development of promising technologies for the production and use of hydrogen and its derivatives with a relatively high maturity level.

The government also supports the development of the VKHyLab, a test infrastructure which will help research institutes and companies to scale up their H2 technologies. The government invests 1.5 million euros in the acquisition of the site and subsidies the Von Karman Institute of fluid dynamics with an additional 14.7 million euros to develop this project. This test facility will be operational by 2025. Innovative activities can also be supported through the adaptation of the taxes, excises or surcharges. Given the importance of developing the first electrolysis capacities in Belgium to enable companies and research institutions to develop their experience in this field, the electrolysis activity is exempted from excises on electricity.

In Wallonia, a H2 cluster has been launched to structure the ecosystem in the region and to launch various projects such as :

- Projects aimed at carbon capture and utilization (CCU), combination with green hydrogen and the production of «e-methane» (synthetic methane);
- Project for an infrastructure/transport network for H2, as well as CO2, in the 2 Walloon industrial «clusters (Liège and Charleroi); hydrogen solutions projects for clean mobility at Liège airport;
- Project to develop green hydrogen recharging stations;
- Industrial methane pyrolysis pilot project;
- Project to recycle food waste to produce biogas and green hydrogen to decarbonize industrial processes and heavy mobility and logistics applications;
- Reversible fuel cell project for the residential/tertiary sector;
- Rsearch projects on green kerosene (synthetic kerosene consisting of green hydrogen with captured CO2), H2 combustion engines and ancillary hydrogen-related services (tanks, etc.).

Wallonia: the place to CCU-CCS

Europe innovation Fund is investing several hundred million euros in Wallonia to decarbonize major industries. As part of this decarbonization drive, industrial players have developed various solutions to capture the CO2 emitted by industrial activities and store it, or use it directly to produce greener energy sources. These projects include:

- **Colombus project** launched by Carmeuse, John Cockerill and Engie in order to capture the CO2 produced by a lime production plant and combine it with green hydrogen in order to produce e-methane;
- **Go4Zero** launched by Holcim Belgium that aims to cryocapture the CO2 produced by the cement industry for future storage. This project was made in partnership with Air liquid and Fluxys;
- **Heidelberg** will invest 450 million euros in order to capture the CO2 produced by the Antoing's cement plant and store it in the North Sea;
- **co2ncreat** was born from the carbonation technology developed by Orbix, offering a sustainable way of recycling certain steel industry by-products. This technology consists in reacting these materials with CO2 to produce building components. Thanks to co₂ncreat, masonry blocks with a negative CO2 footprint will be created. The blocks produced in this way will be distributed as a replacement for traditional concrete blocks.

In this way, in line with the demands of the construction market, the processes will remain the same, while the materials will have a positive environmental impact.

Opportunities

- **Energy and CCU-CCS R&D:** Partnership between ARAMCO, MAADEN or SABIC with energy actors such as John Cockerill for the development of alkaline electrolyzers for hydrogen production, or with H2Win for the development of enzyme-based H2 production. Partnerships with CCU-CCS players in Belgium and with chemical producers such as Prayon or Lhoist for advancing CCU technologies by forming calcium carbonate using limestone or even MITIS for clean decentralized power generation unit using any type of fuel;
- **Chemical R&D:** Saudi petrochemical giants could collaborate with Walloon chemical research institutions or companies for the co-development of sustainable, next-gen chemical products, such as the green chemistry cluster GREENWIN.
- **Green Technology Transfer:** Investing in or partnering with Walloon companies that specialize in green energy solutions, such as green hydrogen production, biofuels, solar technologies, or wind energy solutions, and adapting them for use in Saudi Arabia.
- **Strategic Stakes in Energy Firms:** Taking equity stakes in promising Walloon energy firms that have innovative solutions for cleaner energy production or storage.
- **Case study 1:** KSA could potentially invest in the collaboration between FLYING CAM & QUALITICS & the aeronautics' competitivity cluster SKYWIN which embarked on a very special project dedicated to the conceptualization and development of innovative software and hardware for the inspection of industrial infrastructure and hazardous environments using heavy carrier drones.
- **Case study 2:** inviting a prominent Saudi industrial holding such as REZA GROUP, SABIC, SAUDI ARAMCO, TASNEE, AL RAJHI STEEL, ZAMIL INDUSTRIAL or SIPCHEM to invest in industrial site rehabilitation and projects linked to green hydrogen production and decarbonization, such as the District Cleantech in Charleroi.

Feel inspired

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