



BioWin
THE HEALTH CLUSTER OF WALLONIA


Wallonia.be
EXPORT
INVESTMENT

Strengths of the Life Sciences ecosystem in Belgium-Wallonia

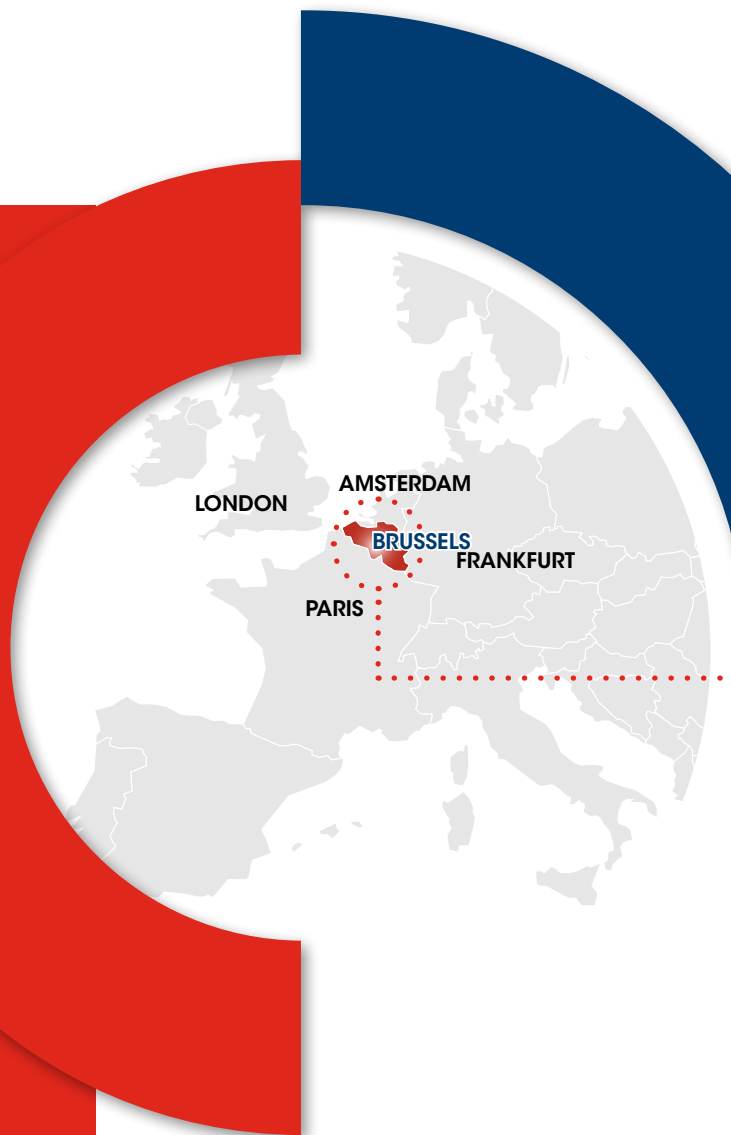
October 2020

Summary



Strengths of the Life Sciences ecosystem in Belgium-Wallonia

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Belgium - Wallonia is right in the center of a large industrial and economic area: access to 100 billion EUR GDP within 4 hours of driving time

Wallonia is within 2 hours - by road, train or plane - of several European capital cities or economic hubs

Wallonia's geographic position is right in the middle of a large economic area



Introduction



"Wallonia is an exporting region... And among these exports, biotech companies enjoy a prominent place. Indeed, «Products from the chemical and pharmaceutical industries» are by far our leading export sector, with more than 35% of the Walloon total. A sector that is continually growing, and the only one which will not be caught up in the economic slump caused by covid-19 in 2020.

These excellent results have not come about by chance... The financial aid on offer and a favourable tax environment for R&D are clearly fundamental advantages for the sector. But we can also mention the presence of leading global companies - GSK, IBA, Zoetis, etc. - that act as engines for SMEs and start-ups, as well having strong relationships with clusters and other partners around the world.

This range of advantages has enabled Wallonia to become a key player in Life Sciences. Due to a remarkable scientific and educational ecosystem, year after year, many biotechnological companies from all over the world set up their research laboratories and their production units in Wallonia. You can be next! We should rightfully be proud of this, but we mustn't rest on our laurels. This is why the Wallonia Export-Investment Agency will continue to attach specific importance to innovation, which is essential to remain in pole position among the regions, as the vanguard of the biotech sector."

Pascale Delcomminette

CEO of Wallonia Export-Investment Agency (AWEX)



" Situated in the heart of Europe, the Belgian region of Wallonia has created a vibrant and innovative ecosystem by equally investing in, and supporting the growth of, scientific excellence and entrepreneurial leadership.

The life science sector in particular has experienced remarkable growth and dynamism, in different areas echoed by the 4 BioWin strategic domains: (Bio) Pharmacy and industrial production of biomedicines, Radiation applied to health, Medical Devices and In Vitro Diagnostic and Digital Health.

With a century of experience in pharmaceuticals, Wallonia has attained unique expertise in the research, development and production of vaccines and biological medicines, and excels in the fields of cell and gene therapies. In the next decade, Wallonia has the potential to become one of the world's largest hubs for the industrial production of vaccines and (bio)medicines (biomanufacturing)."

Sylvie Ponchaut

Managing Director - BioWin





1

First strategic sector of Wallonia's economy

High density of Life Sciences entities in Europe

Pharma is the top contributor to the Walloon economy compared to its neighbours

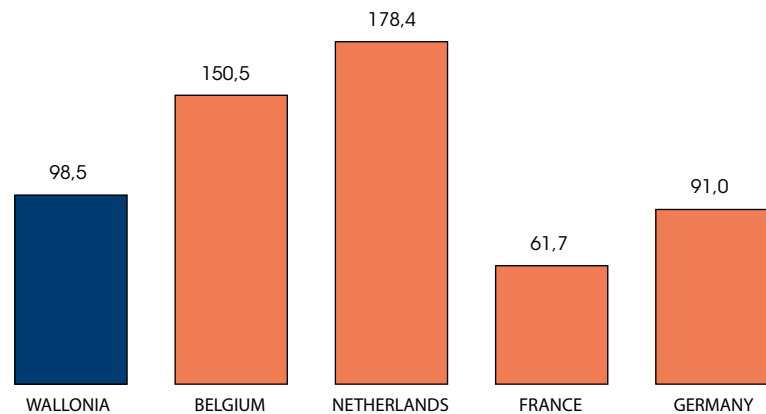




Wallonia

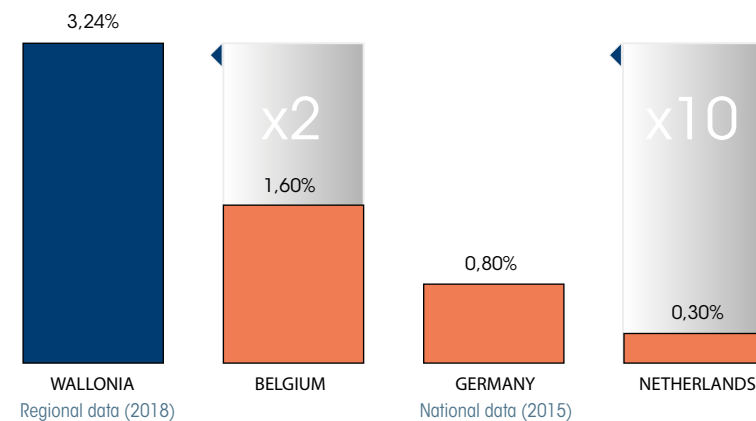
Overall, 357 Life Sciences entities are registered in Wallonia according to official company registers, a higher density than Germany or France

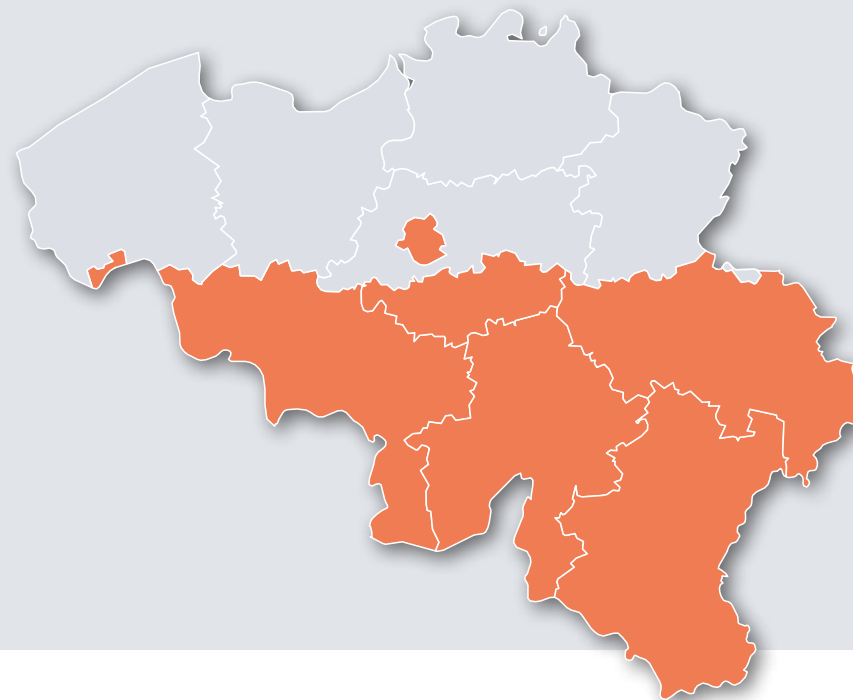
Number of entities per million inhabitants (2017)



The contribution of pharma to Wallonia's economy is 2x higher than for Belgium overall and up to 10x higher than its closest neighbours

Gross Value Added of pharma industry in national or regional economies, 2015 data, %

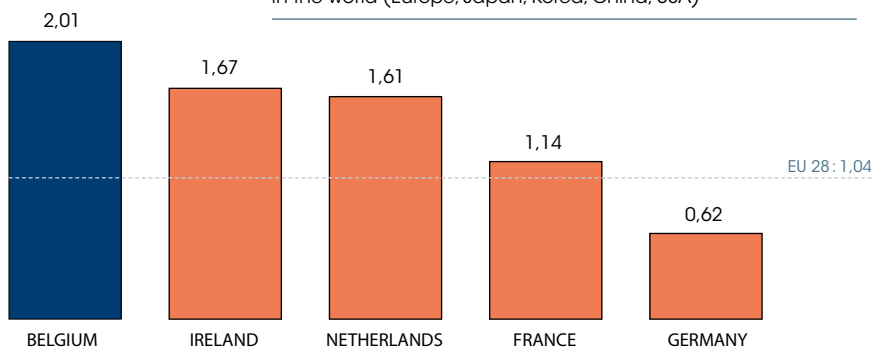




Second in Europe for overall revealed technological advantage in biotech

Revealed technological advantage in biotechnologies, 2015-17, Index

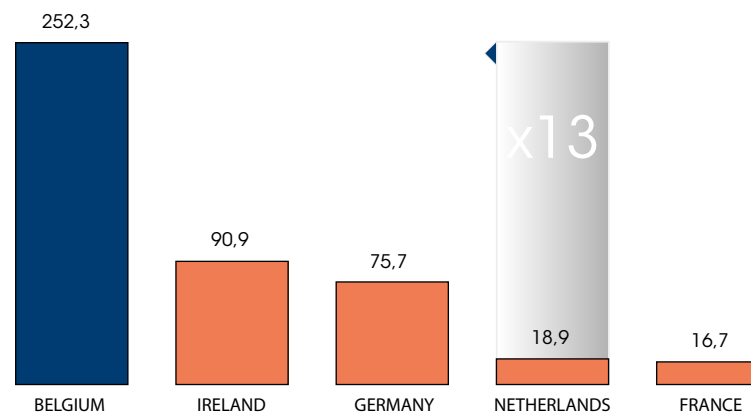
The revealed technological advantage index is calculated as the share of country in biotechnology patents relative to the share of country in total patents of the five largest patent offices in the world (Europe, Japan, Korea, China, USA)



Source: OECD Key Biotechnology Indicators

Within Europe, Belgium has the second-highest level of pharma R&D performed in the business sector per inhabitant and also in R&D investment per capita !

Business Enterprise R&D (BERD) performed in the pharma industry, 2017, Million USD PPP/1,000,000 inhabitants



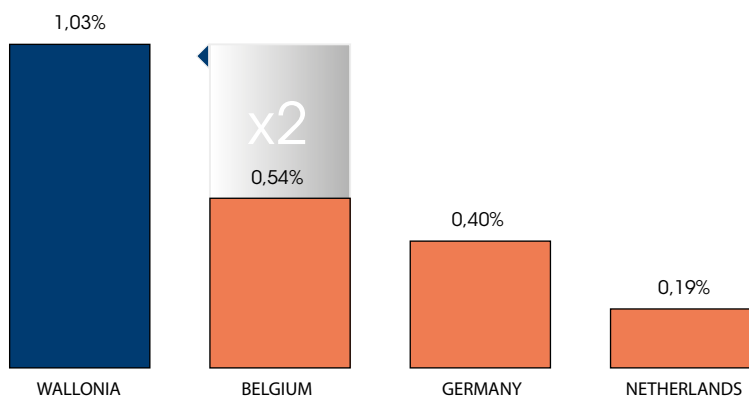
Source: OECD Main Science and Technology indicators





(Bio)manufacturing is most prevalent activity in Wallonia

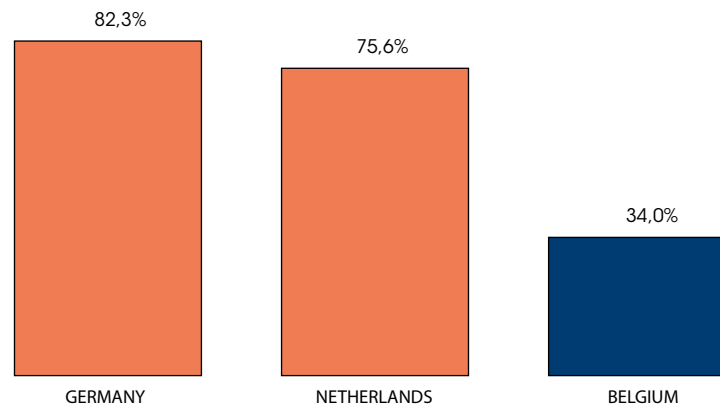
Employment in pharma manufacturing sector, 2016, % of total employment



Source: Innovationdata.be; Eurostat

Belgium is a very favourable country for pharma innovation

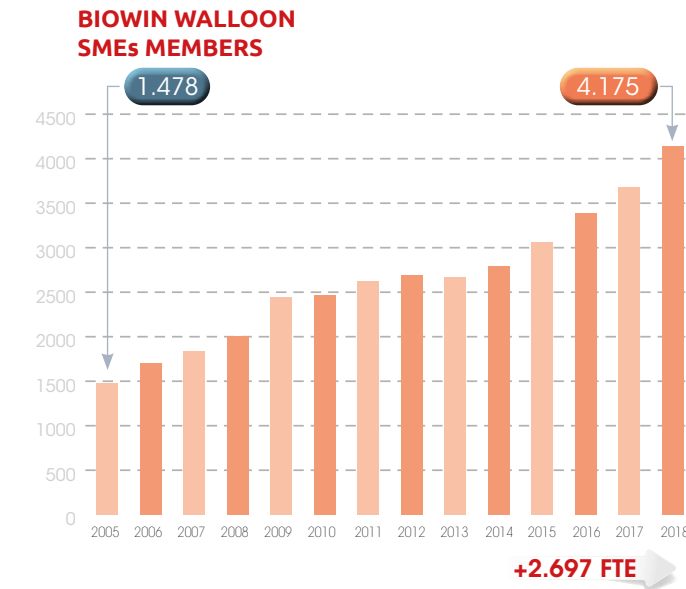
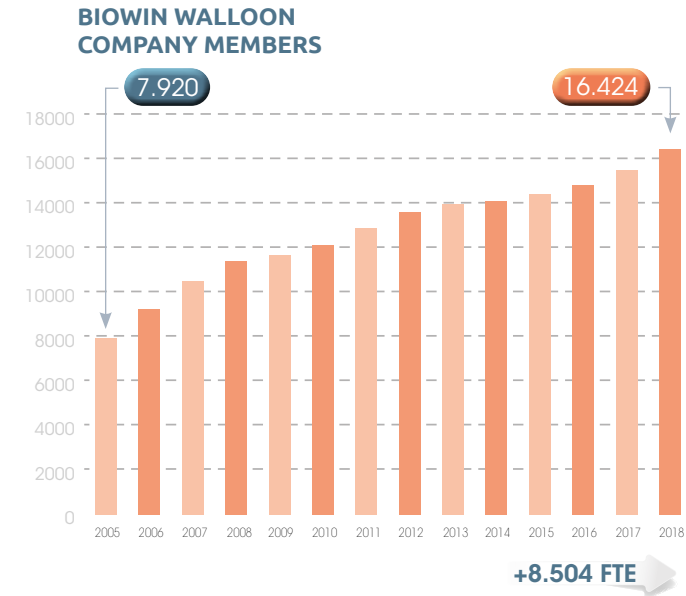
Share of generics in the total pharmaceutical market, 2017



Source: OECD Health at a Glance, 2019

Impressive continuous employment growth +7,7% since 2005

Number of employees amongst BioWin members - FTE

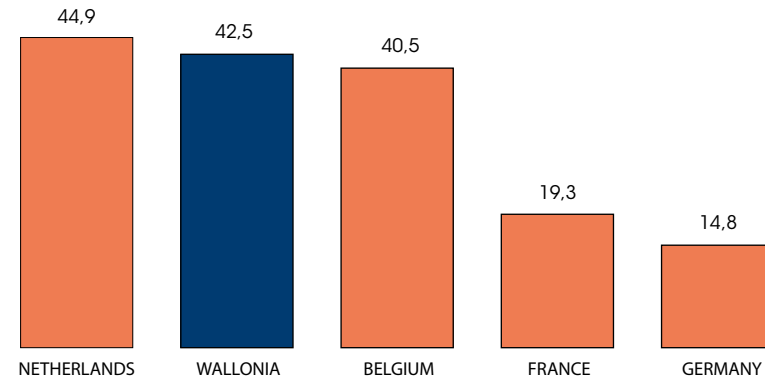


50.000+
16.424 DIRECT JOBS
35.000 INDIRECT JOBS



Belgium - high density of Life Sciences activities in Europe

Number of entities per million inhabitants, NACE 21¹ + NACE 72.11², #/1,000,000



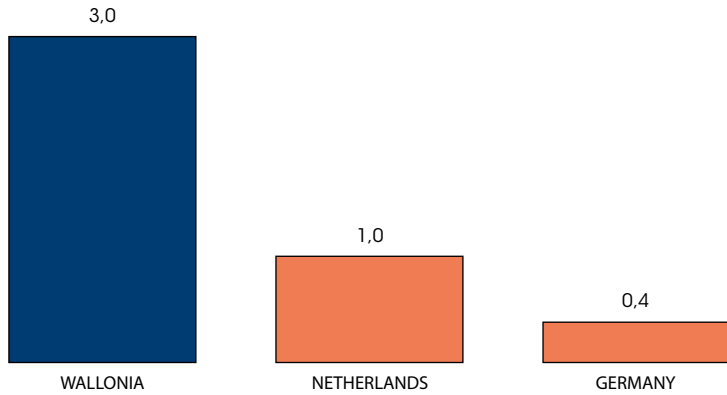
¹ NACE 21 - Manufacture of basic pharma products & pharma preparations / ² NACE 72.11 - Research and experimental development on biotechnology

Source: Eurostat - Structural Business Statistics & Global Business Activities database; CRISP - L'actionnaire des Entreprises Wallonnes; Statbel



Strong R&D in Immunotherapy and Cell therapy in Wallonia

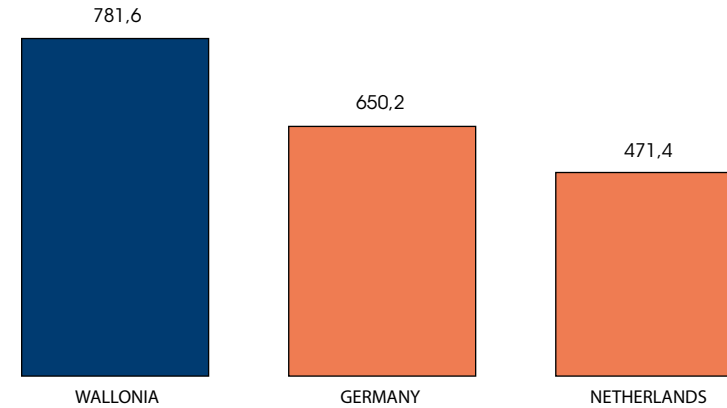
Number of RM & immunotherapy companies engaged in therapeutics development per capita, #/1,000,000



Source: Bioinformant database; Biopharmguy; Company websites

Wallonia provides 66% more hospital beds in University Medical Centers per inhabitant than some immediate neighbours

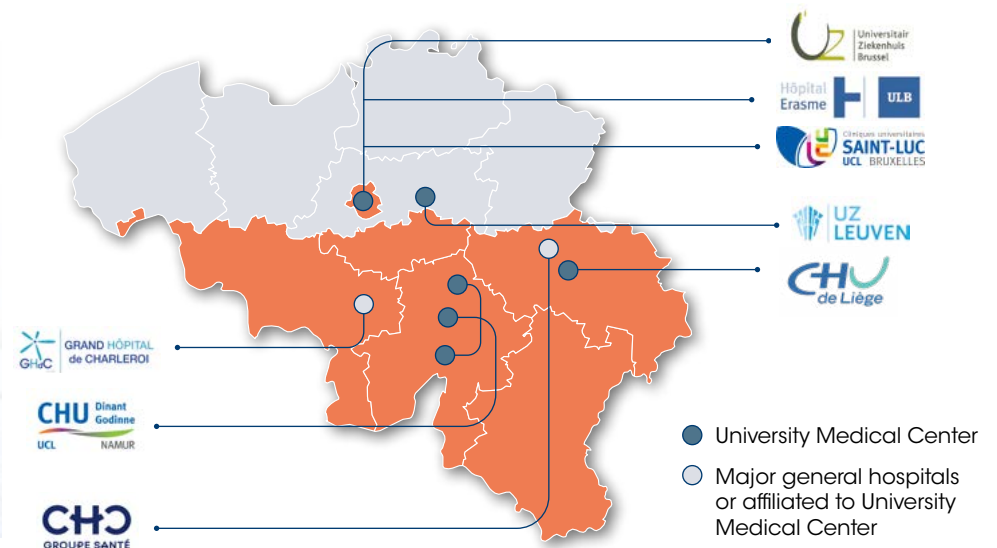
Number of in-region or in-country University Medical Centers hospital beds per million inhabitant, #/1,000,000



Source: University hospital websites in Belgium (7), Netherlands (8) and Germany (36)

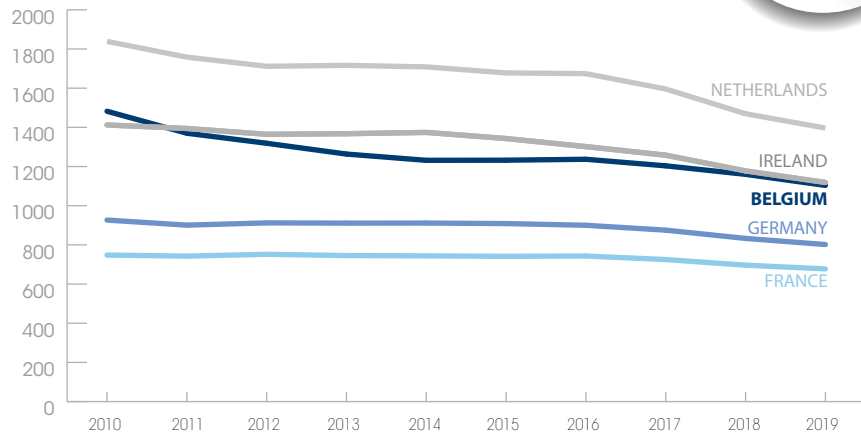


High geographical concentration of academic hospital beds



Strong density of high quality Life Sciences publications in Belgium

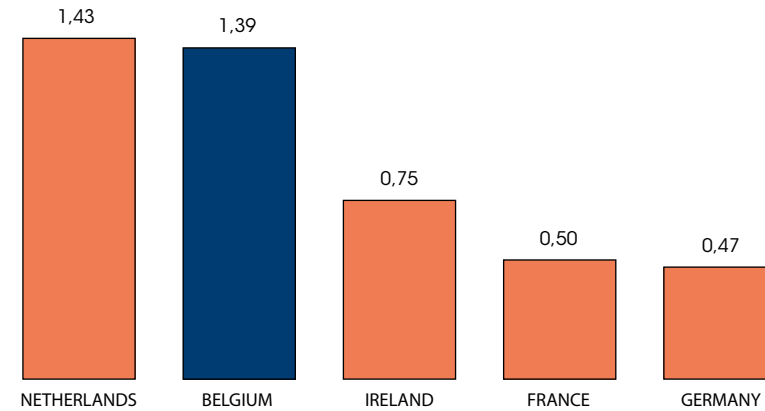
Number of Life Sciences publications per inhabitant, #/1,000,000



Source: Scopus extract March 24th 2020; lbz.be; Populationpyramid.net

Belgium is #2 per capita in the world for clinical trials

Total number of clinical trials in ICTPR database per capita, 1999-2019
per thousand inhabitants

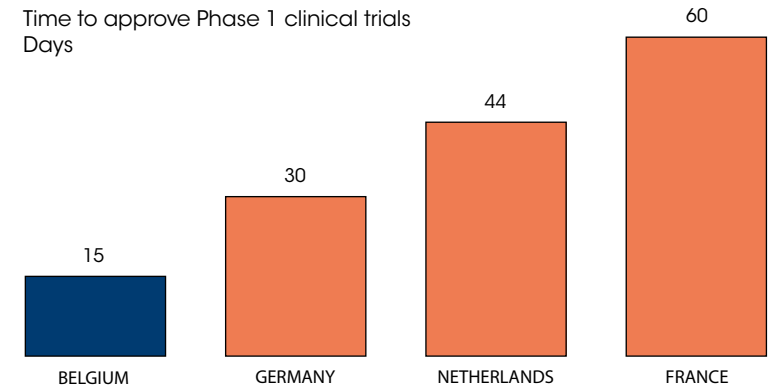


Besides having one of the strongest clinical footprint for the last 20 years, Belgium was ranked #2 in Europe in recent years in terms of number of clinical trials per capita

Source: WHO Global Observatory on Health R&D, Number of trial registrations by year, location, disease and phase of development (1999-2019), March 2020; Pharma.be

Time to approve clinical trials in Wallonia is the fastest in Europe

Time to approve Phase 1 clinical trials
Days



- Belgium currently approves monocentric Phase 1 clinical trials within 15 days
- Even with the new European standard on Phase 1 clinical trial approval timelines, Belgium will remain competitive in regards to fast approvals of Phase 1 trials
- For all other types of clinical trials, Belgium provides an answer within 28 days, while other EU countries often take 2 to 3 months

Source: Pharma.be; FAMHP



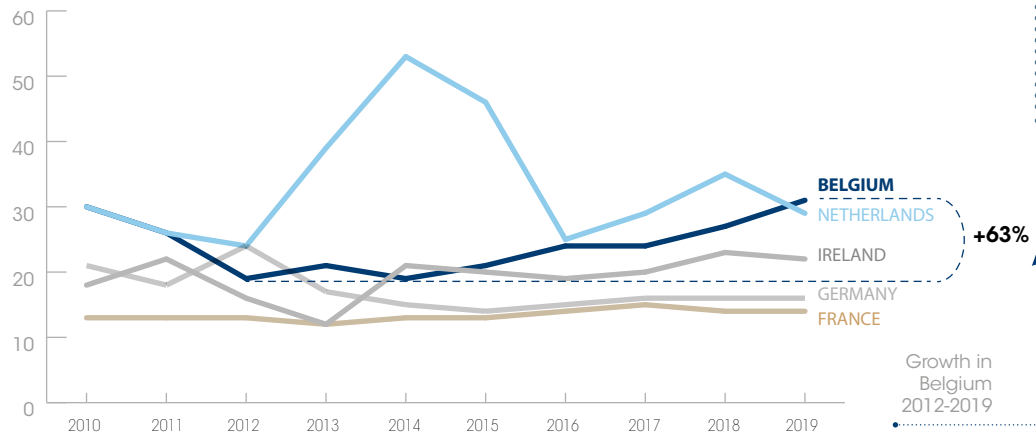
Belgium & Wallonia an attractive soil for Innovation :

- . #1 in pharma patent application to EPO
- . Innovation rates is 14% higher than neighbouring countries
- . Patent application growing by 63% since 2012



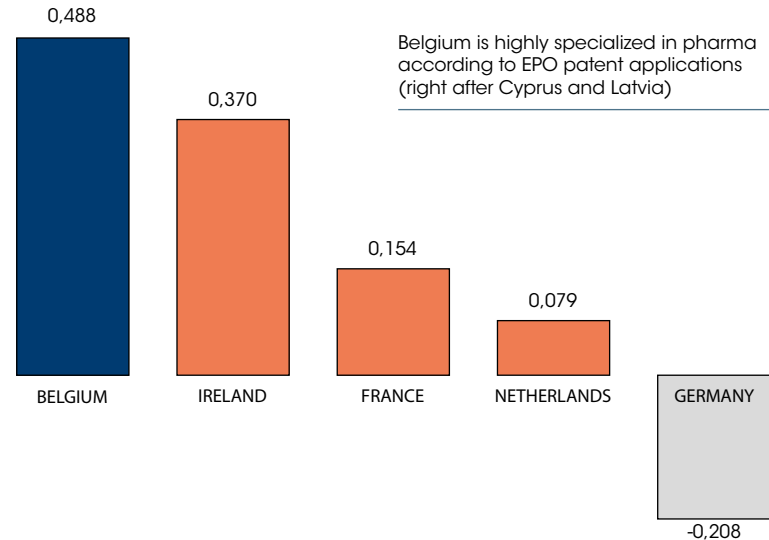
Biotechnology and pharma patent applications to EPO by Belgium have grown 63% per capita since 2012

Patent applications to EPO per capita and by field of technology, # per million inhabitants Biotechnology + Pharmaceuticals



Belgium is #1 in its peer group in terms of relative specialization in pharma for EPO patents

Relative specialization index in pharma, Index, 2006-2015



Belgium is highly specialized in pharma according to EPO patent applications (right after Cyprus and Latvia)





2

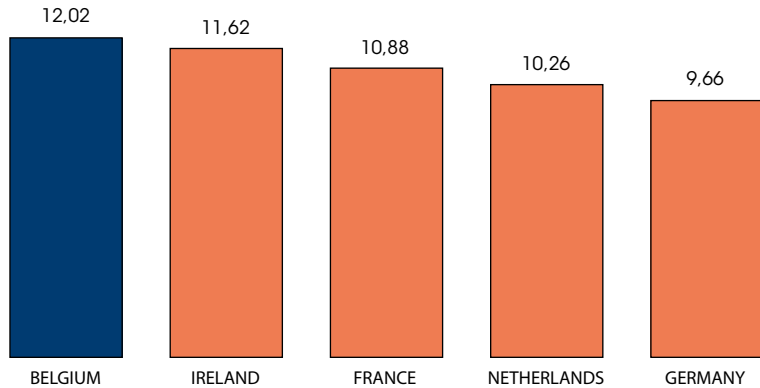
Wallonia great place to work

Belgium has the highest density of researchers amongst its neighbours and the US



Belgium has the highest density of researchers in Europe, 30% higher than in the US

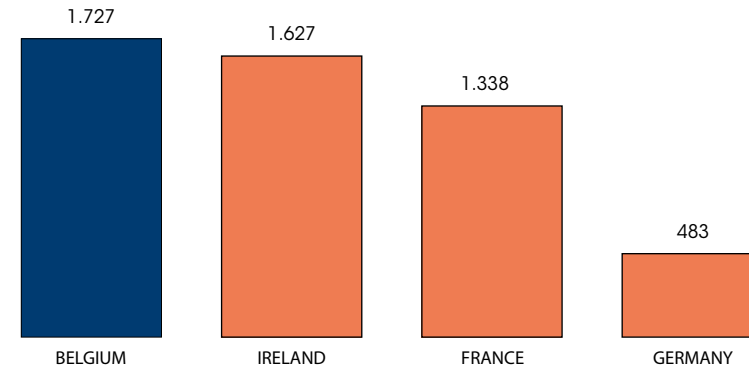
Number of researchers
per 1,000 employees, 2018



Source: OECD, 2018

More Life Sciences graduates per capita

Graduates in Life Sciences & Health per capita,
/ 1,000,000 inhabitants, 2018
Short-cycle higher education, Bachelor's, Master's and Doctoral degrees



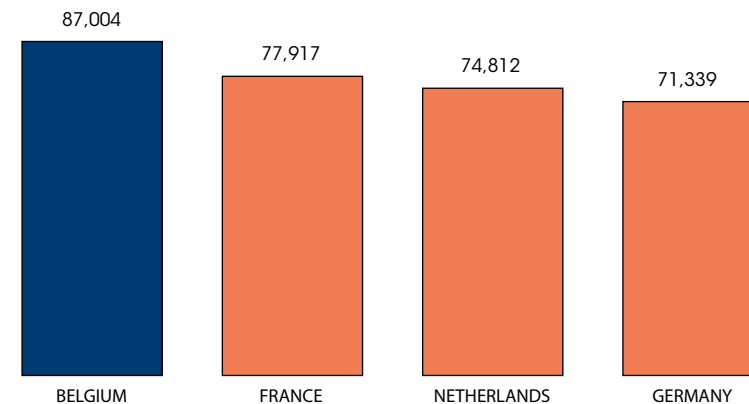
Source: Eurostat



Strike in Life Sciences in Belgium is close to zero per year

Belgium labour productivity across all sectors is amongst highest in Europe

Labor productivity (GDP per worker) across all sectors
Euro Purchasing Power Standard (PPS), 2019



Source: Statistiek Vlaanderen (based on AMECO and HERMREG 2019 data); In-Depth Productivity Review of Belgium, OECD, 2019; Statbel



The CefoChim A Dedicated Biopharma Training Center

4,500 people trained annually

A job-integration rate of more than 85% of job seekers

Ongoing extension project (€ 8M) ready in late 2020

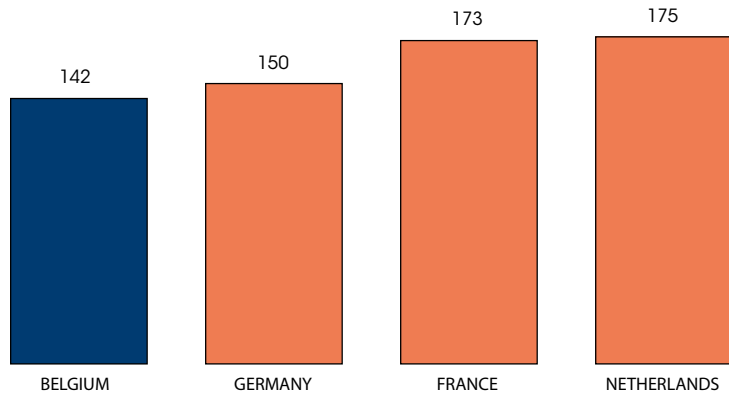
Tailor-made programs on request

Including GMP

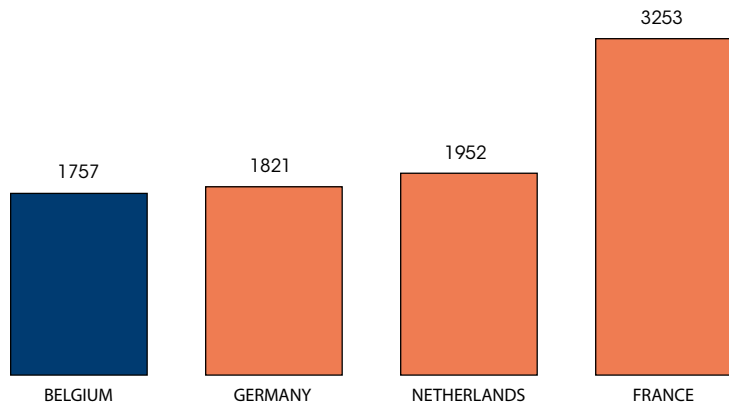


Cost of living

Brussels is one of the least expensive capitals in Europe to live in (min = best)
Belgium has high-quality housing at affordable prices

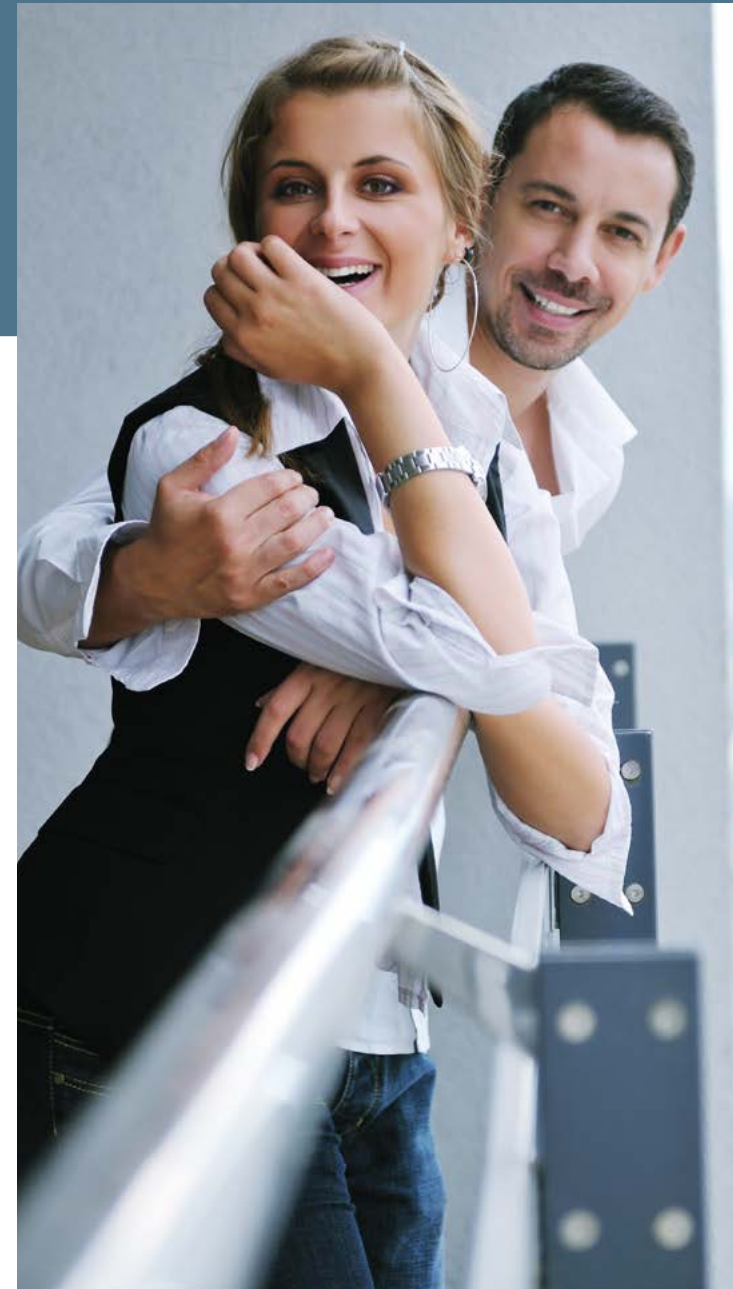


Belgium has high-quality housing at affordable prices (2018, average monthly rental cost for apartments, €)



...with Wallonia being particularly favourable in regards to housing cost

Expats also benefit from attractive incentives in Belgium compared to Germany or even the Netherlands





3

Infrastructure & logistics

Wallonia has access to a dense multi-modal network





EASY TO GET TO

Top ranking infrastructure

According to the IMD World Competitiveness Yearbook 2019, the Walloon motorway and rail network are among the densest in Europe.

By lorry, it is possible to reach a population of almost 60 million inhabitants in 4 hours and an area comprising about 20 major cities in 8 hours. In terms of rail, the main private industrial connections to the national and international network allow companies wishing to be effective and environmentally-friendly to opt for rail or for combined rail/road transport.





Belgium is #1
in density of motorways in Europe



81% of waterway network accessible for Class IV gauge
Direct connections to ports of Antwerp & Rotterdam

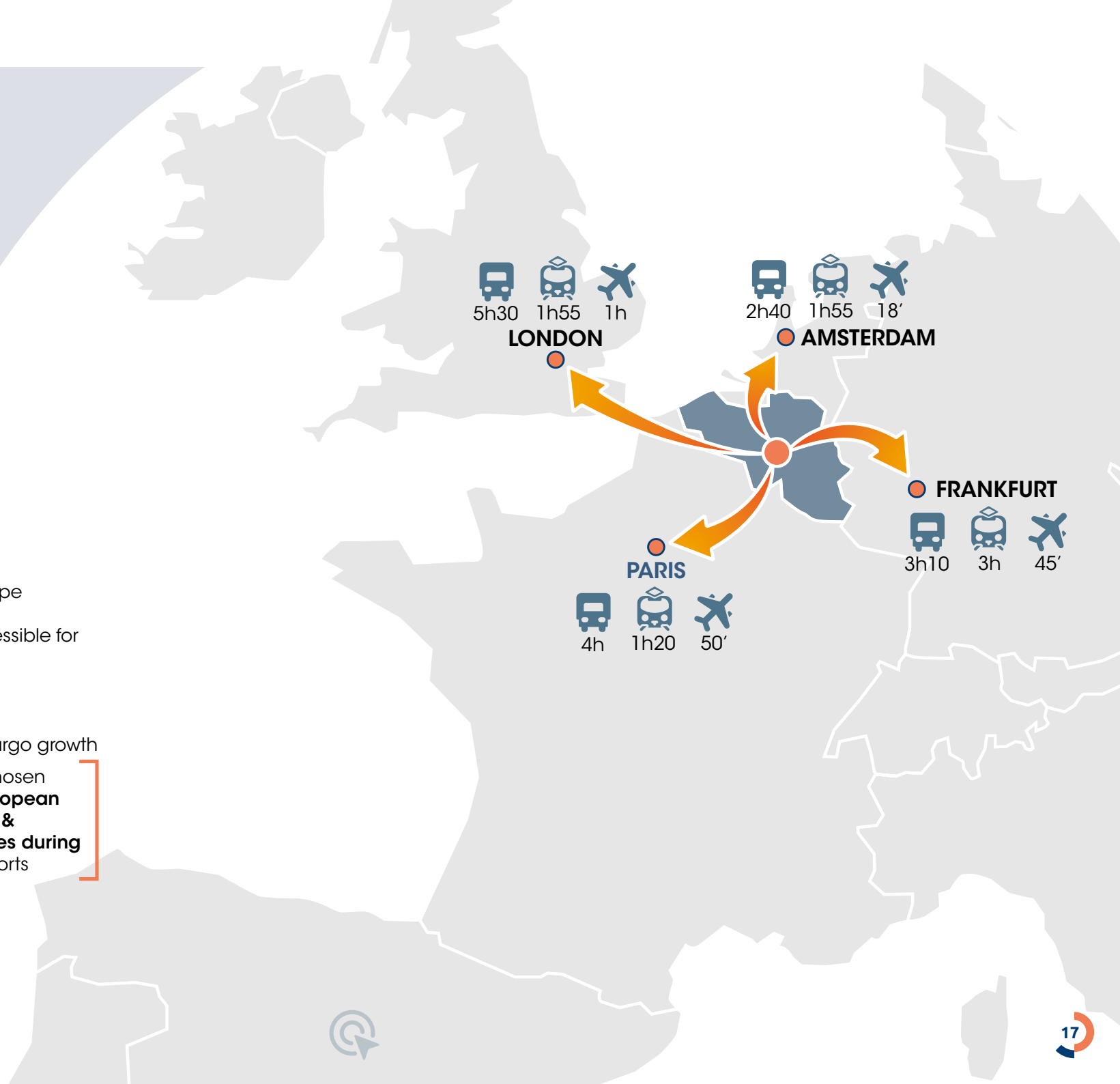


Belgium is #1 in pharma air cargo growth

Liège airport in Wallonia chosen by WHO & WFP as **single European Covid-19 logistics platform & strengthened cargo volumes during pandemic** unlike other airports



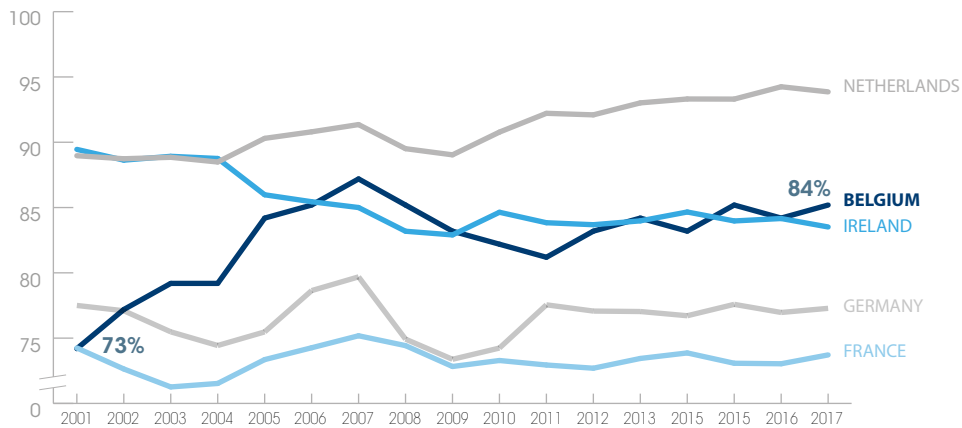
Belgium is #1
in density of rail network
Three weekly connections to China by rail



Logistics in Belgium are ranked #4 in the world by international benchmarks

DHL global connectedness index

- Belgium's connectedness index has improved from 73% in 2001 to 84% in 2017

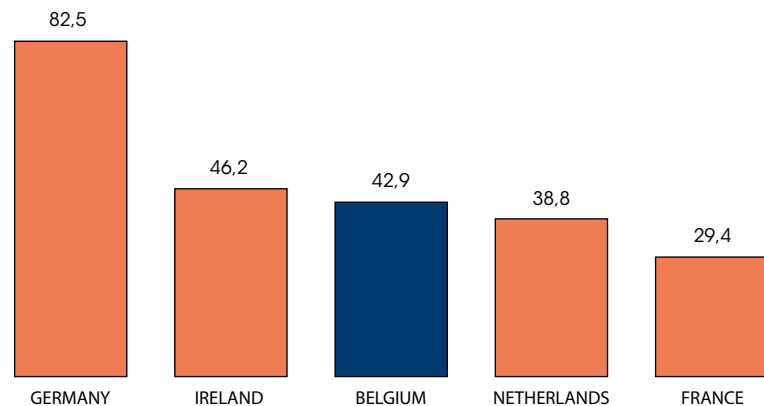


Source: DHL Global Connectedness Index 2018

Belgium exports over 40 billion EUR of drugs every year, making it #4 in peer group and #3 per capita

Export of medicinal and pharmaceutical products, Billion EUR - 2018

- Belgium is the 4th-largest exporter of drugs in its peer group in 2018
- From 2016 to 2019, Belgian drug exports have risen by 22% to almost 50 billion €



Source: Eurostat; Pharma.be; EFPIA





4

Why invest in Wallonia?

The strategic location to welcome your company



Interesting/competitive combination of tax measures & incentives for Life Sciences R&D

According to OECD report 2017 edition, the Belgian tax package for R&D is ranked first worldwide in the ranking of attractive tax systems.

EMPLOYMENT INCENTIVES

Regional authorities are focusing on developing biotech, logistics and other centers of excellence. Tax breaks for R&D and cash grants are both available, which is contributing to the development and sustainability of economic activity in the Walloon region.

EMPLOYMENT

New federal and regional measures have significantly helped to reduce employment costs over the last few years.

General reduction in the tax burden on labor (**25%**)

-25%

Specific additional reductions over four years (**~10%**)

~10%

For the first recruitment (**0%** employer contributions for life)

0%

Through other regional benefits for employment or training

R&D INCENTIVES

Wallonia provides financial and structural support for businesses involved in R&D projects.

DEFINITION : Industrial research incentives up to 40%

These research projects can be carried out alone or in cooperation (excluding sub-contracting) with one or more local or international partners. The object of the research can also be carried out in Wallonia or abroad.

ELIGIBLE EXPENSES

- **SALARIES**: salary costs of the company employees directly and actively involved in the research program
- **OPERATIONS**: raw materials, consumables, minor equipment, tools, prototype components, equipment maintenance, missions abroad
- **OVERHEADS**: 12% of salaries and operations
- **EQUIPMENT**: linear depreciation of the equipment used for the R&D program
- **SUB-CONTRACTING**: freelance scientific and technical consultancy, engineering studies, certifications, etc.



Fiscal environment is amongst the most attractive in Europe for R&D-supported commercial Life Sciences companies



- R&D incentives reducing substantially R&D costs:**
 - 80% exemption on withholding tax on wage of researchers
 - 13,5% tax credit for R&D assets = 4% of cost saving
 - total exemption of regional grants for R&D (30 to 40% in Wallonia)
- Innovation Income Deduction reducing drastically the taxable profit:**
 - 85% of the eligible net IP income (including royalties, embedded royalties and capital gains) is exempt from tax in Belgium
 - Effective Company Tax Rate : **3,75%**

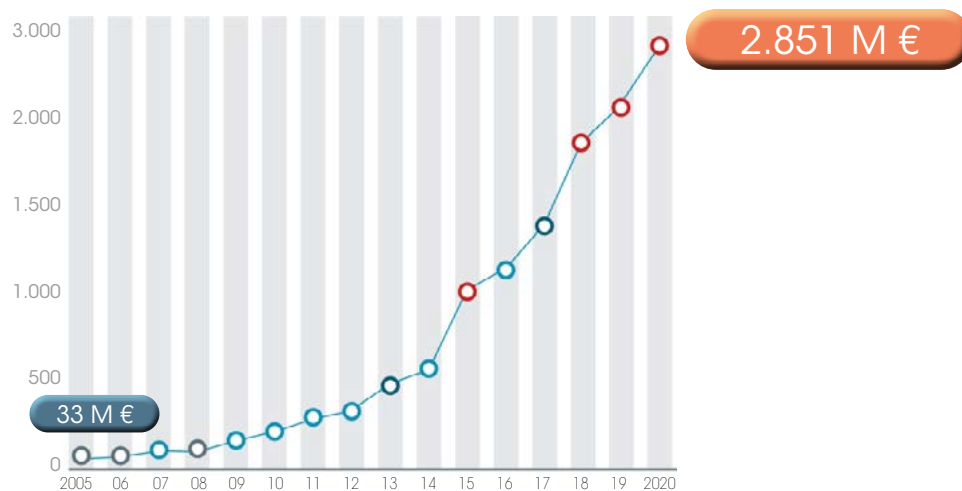
SME access to bank loans appears easier in Belgium compared to other countries...

... while interest rates are also more favourable in Belgium compared to some neighbours

The favourable SME financing environment in Belgium also applies to large companies

Cumulative total private investments into Wallonia's Life Sciences small and medium companies

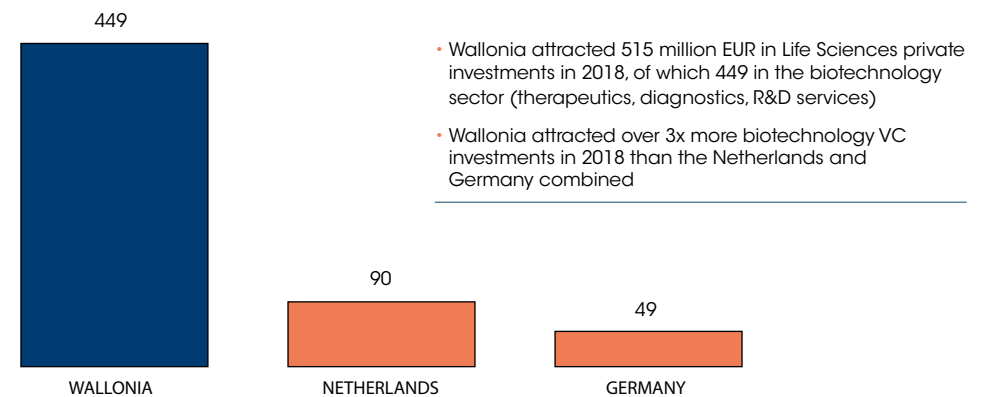
Cumulative private investments into BioWin's SME members, 2005-mid september 2020
Million EUR



Source: BioWin

Private venture financing in 2018 into Wallonia's biotechnology sector is over 3x higher than Netherlands and Germany combined

Private investment into biotechnology, 2018 - Million EUR - 1 EUR = 1.18 USD (2018)



Source: BiotechGate (Germany, Netherlands); BioWin (Wallonia)

Very supportive investment environment,
creates a high industry density of Life Sciences in Wallonia.





5

Testimonials





Mr. Philippe Denoel, PhD
Head of External R&D
GSK Vaccines

"We have many assets in our region. First of all we have a strong innovation strategy. We have large pharma companies collaborating with SME biotech companies. We have research, regulatory but also tax incentives. And last but not least, we have a wonderful location in the center of Europe very close to our Neighboring countries, and Brussels, our capital city, is hosting the European institutions."



Mr. Filippo Petti
CEO of Celyad Oncology

Mr. Filippo Petti, CEO of Celyad, confirms that the fiscal measures adopted to support innovative development make Wallonia highly competitive and attractive for business investments. Mr. Petti mentioned the reasons why Celyad chose Mont-Saint Guibert to develop its activities :

"There are a few factors we have taken into consideration when we decided to establish the company in Mont-Saint Guibert: the quality of education, the availability of expert personnel, the support of public authorities to the biotechnology industry, the quality, expertise and proximity of clinical centers, and a few logistical considerations such as the proximity of the airports of Brussels and Charleroi, the convenient connectivity to highways and the strategic location nearby the University of Louvain-la-Neuve, played an important role in our decision.

Celyad is a clinical-stage biopharmaceutical company focused on the development of specialized CAR-T cell-based product candidates and utilizes its expertise in cell engineering to target cancer. Celyad's total manufacturing area is 1.100 m², including 245 m² of clean rooms meeting GMP requirements. Celyad was founded in 2007 and is based in Mont-saint-Guibert, Belgium, with activities in Belgium and the United States."



Mr. Lieven Janssens
CEO of Kaneka Eurogentec

Mr. Lieven Janssens, CEO of Kaneka Eurogentec introduces the fast-growing activities of Eurogentec, an internationally recognized biotechnology company located in Liège, Wallonia.

"We have 420 employees worldwide including 350 in Belgium. We are part of Kaneka. Eurogentec is recognized as one of the major players worldwide in the field of genomics and proteomics, molecular diagnostics and biomanufacturing. Our multi-product facilities are located on two sites in the Liège Science Park, and Kaneka Eurogentec is considered as the world leader in large scale biomanufacturing of GMP plasmid DNA for gene and cell therapies.

Agility is completely enclosed in our vision that gene-based treatments will become more and more important in the future vaccine landscape. Due to the high demand for COVID vaccines, we have made quickly the necessary investments to be ready for the large-scale production.

Eurogentec is leveraging on the agility of the Region and its dense biotech ecosystem : Wallonia is indeed a fertile ground for innovation thanks to its highly skilled and dedicated workforce as well as the dynamic private-public partnerships with top level universities and research centers. We appreciate the collaborative support of the Walloon Region throughout our development and growth."

As the Biopharma & Life Sciences valley of Europe, Belgium-Wallonia offers a strong, strategic location for Biotech companies

Wallonia offers you the full support of the Belgian government and local public authorities

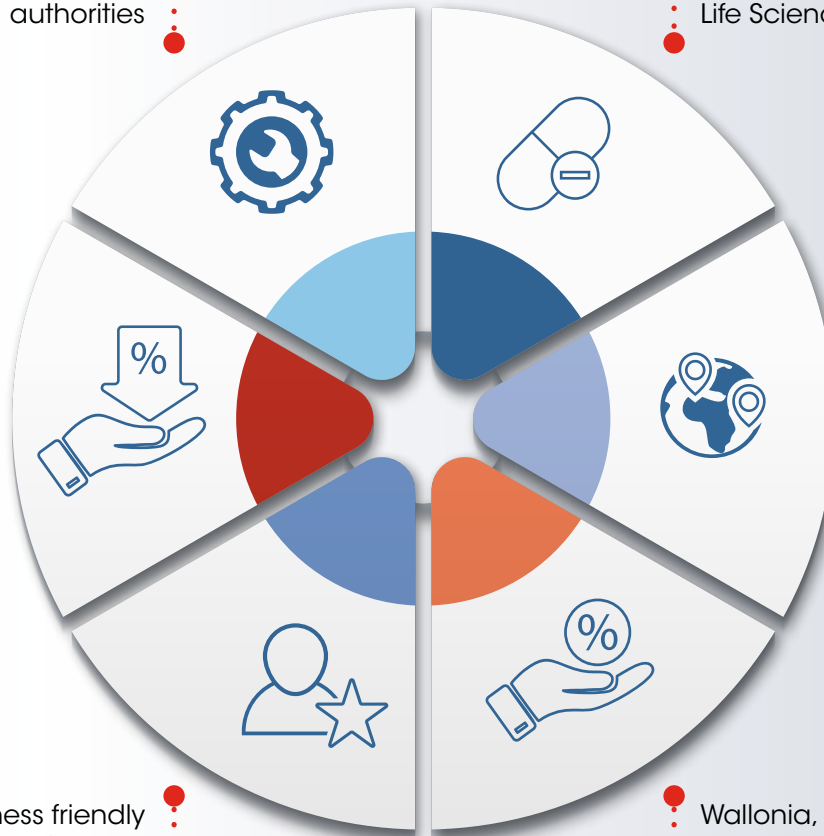
Wallonia, a world class leading Life Sciences cluster

Wallonia, a unique location with a good mix between highly educated skilled talent, vibrant Life Sciences ecosystem, quality of life and costs

Wallonia, a European key bio logistic player

Wallonia, a very business friendly location with a lot of talents

Wallonia, a very supportive environment with favourable labour and tax regulations





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