Poland's Life Sciences Industry and Laboratory Infrastructure

Industry Development and Commercial Laboratory Market Overview

May 2026

Message from the CEO, JLL Poland

In observing the evolution of Poland's commercial real estate market, we continue to assess its potential directions for sustained growth. As the market reaches maturity, momentum is increasingly shifting towards specialised niche segments. Among these is life sciences real estate, a segment that underpins innovation-led growth and strengthens national resilience in pharmaceuticals and healthcare.

Sustained expansion of the life sciences industry will depend on access to modern laboratory facilities capable of meeting rising demand. As the industry continues to scale, it is increasingly engaging with professional real estate services, thereby elevating standards and enhancing overall market sophistication. This evolution represents a natural stage in the industry's maturation. The life sciences industry is inherently demanding: it operates within a stringent EU and national regulatory environment and requires specialist expertise across legal and compliance frameworks, as well as negotiation with exacting stakeholders.

Polish policy is reinforcing this trajectory and acknowledging the growing strategic importance of the industry. The establishment of the Medical Research Agency and the Government Biomedical Sector Development Plan for 2022–2031 represent pivotal milestones in the development of Poland's life sciences ecosystem. Collectively, these initiatives enhance competitiveness and drive innovation-led growth within the Polish economy.

This research report examines the current state of Poland's R&D-driven life sciences industry and its evolving demand for laboratory infrastructure.

Mateusz Bonca
CEO, JLL Poland

Executive Summary

Poland's life sciences industry stands at a pivotal strategic juncture. On one hand, it is gaining strong momentum and attracting growing interest from investors, innovators, real estate professionals and public stakeholders. On the other, persistent structural problems continue to limit its scale, efficiency, and international competitiveness.

This report aims to present an evidence-based analysis of the industry's current position, outlining both the opportunities for growth and the structural barriers that must be addressed to unlock its potential in Poland.

In this report, "life sciences" refers to the scientific disciplines that study living organisms – including humans, animals and plants – with the aim of protecting, restoring and extending life. In market analysis terms, we apply a simplified industry framework comprising three core segments: **pharmaceuticals**, **biotechnology** and **medical devices**.

Poland is home to one of the largest pharma sectors in the European Union. The country has about 400 pharmaceuticals manufacturing companies, with an estimated market value of around PLN 55.9 billion (~€12.9 billion). Production remains concentrated in generics and dietary supplements; however, the group of companies investing in innovative therapies continues to expand.

Biotechnology is gaining momentum, but remains structurally uneven. According to the latest Statistics Poland data, 246 companies were engaged in biotechnology activity in 2024, representing a 26% YoY increase. About 39% of them are fully specialised biotechnology companies, while 64% conduct R&D, of which two-thirds are involved solely in scientific research without in-house production. This pattern signals a growing knowledge base, but also highlights the challenge of translating research into scalable commercial product.

Poland already ranks among the world's top ten exporters of medical equipment. Manufacturers compete in areas such as diagnostics, orthopaedics, dentistry, sterilisation, and implants, with exports reaching approx. €5.88 billion in 2024.

Innovation investment is moving in the right direction, **but the gap remains material**. An increase of 0.86 percentage points in R&D investment over the past two decades reflects sustained national commitment. Even so, Poland's R&D investments remains below the EU-27 average, indicating a substantial – yet narrowing – distance to Europe's leading innovation economies.

The industry benefits from several strengths. Poland possesses evolving academic-industrial hubs in Warsaw, Kraków, Wrocław, Poznań, Tri-city, Łódź, and Lublin. Proximity to highly rated universities and research institutes is fostering a larger base of start-ups and specialist companies. Policy signals are also strengthening: the creation of the Medical Research Agency (ABM) in 2019 and the availability of incentives such as R&D relief, the IP Box and announced draft legislation to create a "Breakthrough Technology Development Fund" suggest a more enabling environment for innovation-led growth.

At the same time, growth is constrained by four bottlenecks that collectively suppress Poland's life sciences industry development:

1. Infrastructure constraint: a pronounced shortage of commercial laboratory space has become an immediate physical limiting factor. Demand exceeds supply, forcing costly adaptations of suboptimal premises and, in some cases, constraining headcount growth or delaying equipment deployment.

2. Real estate capital constraint: Poland lacks the investment-grade laboratory properties that attract institutional capital in Western Europe. Without turnkey developments anchored by creditworthy tenants, developers cannot finance new schemes at scale, limiting the infrastructure pipeline.

3. Operating capital constraint: access to R&D financing remains inadequate. Limited specialist venture capital, risk-averse public mechanisms, and banks reluctant to fund high-risk R&D deepen the "valley of death" for early-stage companies.

4. Coordination constraint: the institutional landscape remains fragmented. Absent a cohesive national strategy, ministerial efforts become siloed, science-business collaboration remains sub-optimal, and national assets are not mobilized towards shared priorities.

Poland must evolve from fragmented initiatives towards coordinated ecosystem development. Unlocking its potential requires a coherent strategy addressing infrastructure, real estate investment, R&D financing, and institutional coordination. International benchmarks —from Cambridge's integrated campuses to France's Station F and South Korea's IP-backed financing— highlight effective models.

What this means

For Poland's Life Sciences Industry:

Poland has the scientific base, entrepreneurial momentum, and policy support to build a competitive ecosystem. However, growth will remain constrained unless infrastructure, institutions and capital move in coordination. Four priorities emerge:

- Accelerate laboratory development in Warsaw, Kraków, Wrocław through public investment and private development, prioritizing well-connected urban sites
- Create investment-grade properties using pre-let strategies and public co-investment to attract institutional capital
- Deploy the Breakthrough Technology Development Fund with professional management and tolerance for calculated risk
- Establish institutional coordination through a single mechanism aligning ABM, NCBR, and ministerial efforts

For Real Estate:

Life sciences represents a high-value opportunity requiring a fundamentally different approach from standard commercial development. Success depends on four factors:

- Technical sophistication: Specialized HVAC, cleanrooms, and BSL-2+ facilities cannot be achieved through basic office conversions
- Pre-commitment: Institutional investors require 60%+ pre-let commitments from anchor tenants before construction can be funded
- Location strategy: tenants prioritize proximity to universities and talent — 88% consider convenient access important or very important
- Investment case: International benchmarks show 21–64% rental premiums and 25–100 bps yield compression versus prime office due to income stability and long-lease structures.

Conclusion

Poland can build a competitive life sciences ecosystem, but only if infrastructure, capital, and policy align toward shared priorities. The window of opportunity is open: demand is demonstrable (47% of companies struggle to find lab space), policy support is strengthening, and the academic base is robust. However, fragmented efforts will yield fragmented results.

International benchmarks demonstrate that competitive life sciences ecosystems are not accidental—they require deliberate, coordinated action across multiple stakeholders. Poland has the ingredients; what remains is to align them toward a shared strategic vision. The challenge now is execution.

About this report

This report was prepared by a consortium of JLL, Związek Firm Biotechnologicznych BioForum, and CRIDO.

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Związek Firm Biotechnologicznych BioForum is a trade organisation bringing together Polish biotechnology companies, with the aim of representing and supporting the development of this innovative sector. The organisation actively participates in legislative processes, aiming to create a favourable legal and business environment for the industry. BioForum is a member of key European and international associations, including EuropaBio and the International Council of Biotechnology Associations (ICBA), which enables its member companies to participate in global discussions and influence the shape of regulations.

CRIDO is a leading Polish consulting company that specialises in legal, tax, and business advisory services. CRIDO shapes the future of enterprise for a better Poland by providing integrated, multi-disciplinary expertise to help Polish and international companies navigate complex challenges and seize growth opportunities.

The Sectoral Skills Council for Life Sciences is a knowledge partner of the report, and its experts participated in its development, contributing expertise in labour market analysis, identification of skills needs, and workforce development in the sector. The Council focuses on monitoring trends, diagnosing skills gaps, and fostering dialogue between business, academia, and public administration, supporting better alignment of skills with labour market needs. The Council's activities are co-financed under the European Funds for Social Development programme for 2021–2027 from the European Social Fund Plus.

This report comprises three main sections. The first two present a data-driven analysis of the Polish life sciences industry landscape and examine the state of the commercial laboratory market and access to research infrastructure.

The third provides a qualitative overview of collaboration between science and business, outlines the most suitable management models for science and technology parks in Poland, and presents international benchmarks for biotechnology developmen t.

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01
R&D and Life Sciences Policy Landscape in Poland

Poland has increased research and development (R&D) investment from below 1% of GDP a decade ago to 1.41% in 2024 – one of the highest growth rates in the EU. However, it still lags behind Europe's leading countries with established life sciences clusters.

At the same time, the country's public policy framework for life sciences is maturing. The establishment of the Medical Research Agency (ABM) and the Government Biomedical Sector Development Plan for 2022–2031 mark an important step in fostering healthcare innovation, supporting clinical research, and strengthening collaboration between science and business. Combined with tax incentives, targeted grants, and EU-funded programmes, Poland is laying the groundwork for developing its own competitive life sciences ecosystem.

R&D Investment – Poland in the Context of EU Leaders

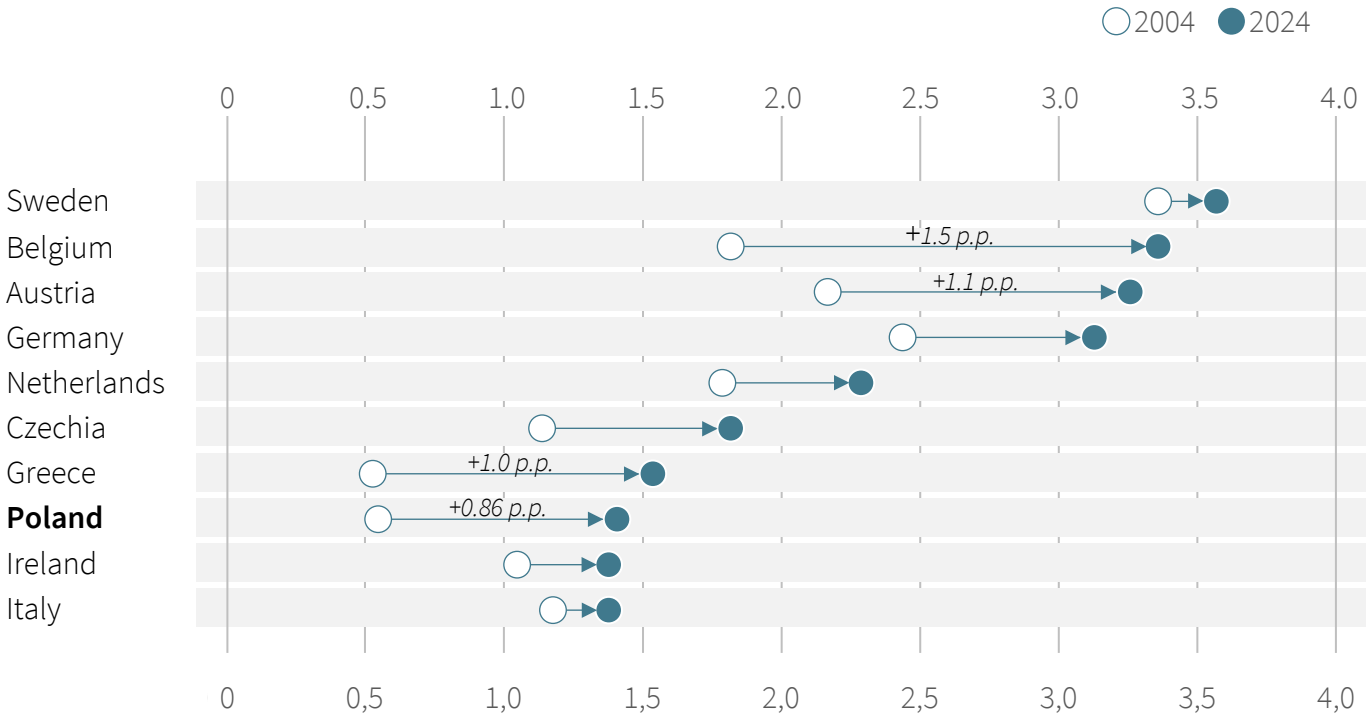
Poland has made a significant step-change in research and development (R&D) investment over the past decade, but a considerable gap remains compared with Europe's leading life sciences clusters.

Between 2004 and 2024, R&D investment grew from below 1% of GDP (approx. €1.14 billion) to 1.41% of GDP (approx. €11.96 billion). However, this still falls short of the EU-27 average and lags behind mature innovation economies: Sweden invested about 3.6% of GDP, Belgium 3.4%, Austria 3.3%, Germany 3.1%, and the Netherlands about 2.3% in 2024. Consequently, the distance to the leading countries remains substantial. Poland therefore ranks in the middle (15th) in the EU in terms of R&D intensity – ahead of Ireland and Italy, but still behind countries such as Czechia, which stands at 1.8%.

It is worth noting, however, that the growth of R&D investment in Poland was among the highest in the European Union. Between 2004 and 2024, R&D investment in Poland increased by 0.86 p.p. of GDP, placing the country alongside Belgium (+1.5 p.p.), Austria (+1.1 p.p.) and Greece (+1.0 p.p.).

Figure no. 01

Change in the Percentage of Gross Domestic Investment on R&D as a Share of GDP, 2004-'24, %



Source: BioForum/JLL Research Poland based on MSTI, Eurostat (provisional data), December 2025

Public Policy in the Field of Life Sciences

The life sciences industry has seen a noticeable increase in support in recent years, although a single, coherent development strategy is still lacking. The creation of the Medical Research Agency (ABM) in 2019 was the most significant step to date – a state agency dedicated to funding healthcare innovation, including clinical research conducted in Poland. By early 2025, it had contracted projects worth PLN 4.46 billion (~€1.04 billion), financing non-commercial clinical trials at universities as well as R&D undertaken by pharmaceutical and biotechnology companies.

In 2022 the government commissioned ABM with the Government Biomedical Sector Development Plan for 2022–2031, with a PLN 2 billion (~€0.43 billion) budget sourced from the National Recovery Plan (KPO) and Ministry of Health. The plan aimed to create a supportive ecosystem by clearly defining development goals, streamlining laws and procedures, coordinating innovation funding, and targeting support towards the production of innovative medicines, medical devices and therapies with high commercialisation potential.

At the same time, tax relief and incentives that encourage investment in R&D are in place. Companies can claim an R&D tax relief of up to 200% of eligible costs and apply a 5% corporate income tax rate (IP Box) to income from intellectual property (IP); meanwhile, the Polish Investment Zone (covering the entire country) offers income tax exemptions of up to 70% of investment value, particularly in less developed regions.

The government also supports the development of the industry through the National Centre for Research and Development (NCBR) programmes – such as Strategmed, TechMatStrateg, and Innomed – as well as investments in research infrastructure. Examples include the expansion of centres of excellence and laboratory properties at universities (including biomedical science centres in Warsaw, Kraków, and Łódź).

It is worth noting that Poland has established national smart specialisations, including health and medical biotechnology, which facilitate the allocation of EU funds to life sciences industry.

02
Scale and Structure of Poland's Life Sciences Industry

Poland's life sciences industry is expanding, diversifying, and moving up the value chain. Pharmaceuticals still form the largest segment, but biotechnology is growing fastest and drives innovation despite its smaller base. The medical device sector is also a promising area, with exports steadily increasing.

The industry is shifting from generic production to more technologically advanced companies. As this transition continues, stronger collaboration across big pharma, biotechnology, and medical devices should reinforce the wider ecosystem and improve the flow of skills, capital, and capabilities between sectors.

Over the next few years, biotechnology is expected to strengthen its position through growth in the number of companies, clinical trials and projects, alongside an increasing contribution of the industry to the Polish economy.

Poland's life sciences industry is one of the largest in Central and Eastern Europe (CEE), anchored by a strong pharmaceutical base and diversified by growing biotechnology and medical device sectors.

Polish Pharmaceutical Industry is the Largest in CEE and Ranks Fifth in Value in the EU

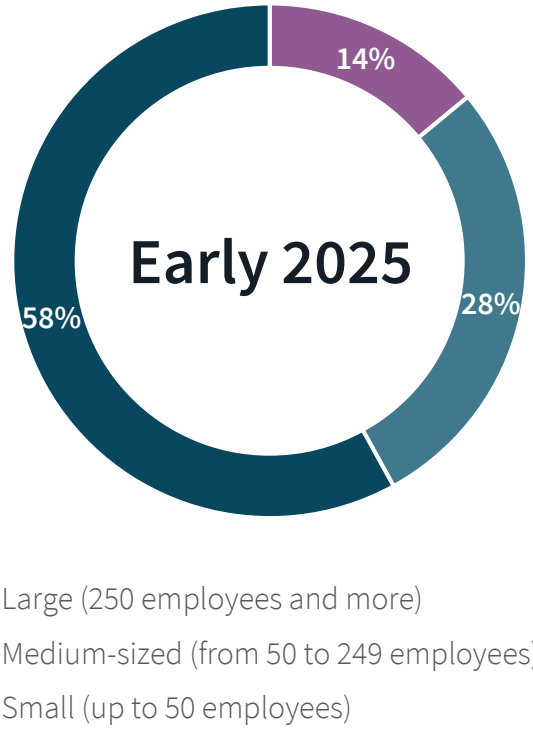
In 2024, the value of Poland's pharma market reached approx. PLN 55.9 billion (~€12.9 billion). There are several hundred pharmaceutical companies operating in the country (around 400 medicine manufacturers compared with about 280 in 2010). The market is dominated by producers of generic medicines and dietary supplements, but the number of companies investing in innovative medicines is growing. This sector employs between 82,000 and 100,000 people and includes both Polish companies (Polpharma, Adamed, Polfa Group) and subsidiaries of global corporations (Roche, Novartis-Sandoz/Lek, GSK, Sanofi). They contribute significantly to the economy – directly accounting for around 0.7% of GDP, and even more when indirect effects are taken into account. Polish pharmaceutical companies are also increasing their exports, reaching €6.84 billion* in 2024, a 10.7% YoY increase. The structure of the pharmaceutical market is fragmented – aside from a few leading companies with revenues exceeding PLN 1 billion (~€0.24 billion), the majority consists of medium-sized enterprises as well as numerous wholesalers and distribution companies.

Poland's Biotechnology Sector Demonstrates Strong Growth

According to the latest Statistics Poland data, 246 companies engaged in biotechnology activity in 2024, a 26% YoY increase. About 39% of them are fully specialised biotechnology companies (i.e. focused on bio research or products), while 64% conduct R&D – of which ⅔ are involved solely in scientific research without in-house production.

The structure of the biotechnology sector shows a predominance of small entities – 58% of biotech companies employ fewer than 50 people, medium-sized ones (50–249 employees) account for around 28%, and large companies (employing 250 people or more) represent about 14%. This indicates that Polish biotechnology is mainly based on small, innovative, research-oriented companies, often start-ups or academic spin-offs.

Figure no. 02
Share of Companies by Employment Size in the Biotechnology Sector



*CN codes: 2936, 2937, 2941, 3001–3004, 3006, 3507 and 3822.

Source: BioForum analysis based on Statistics Poland, December 2025

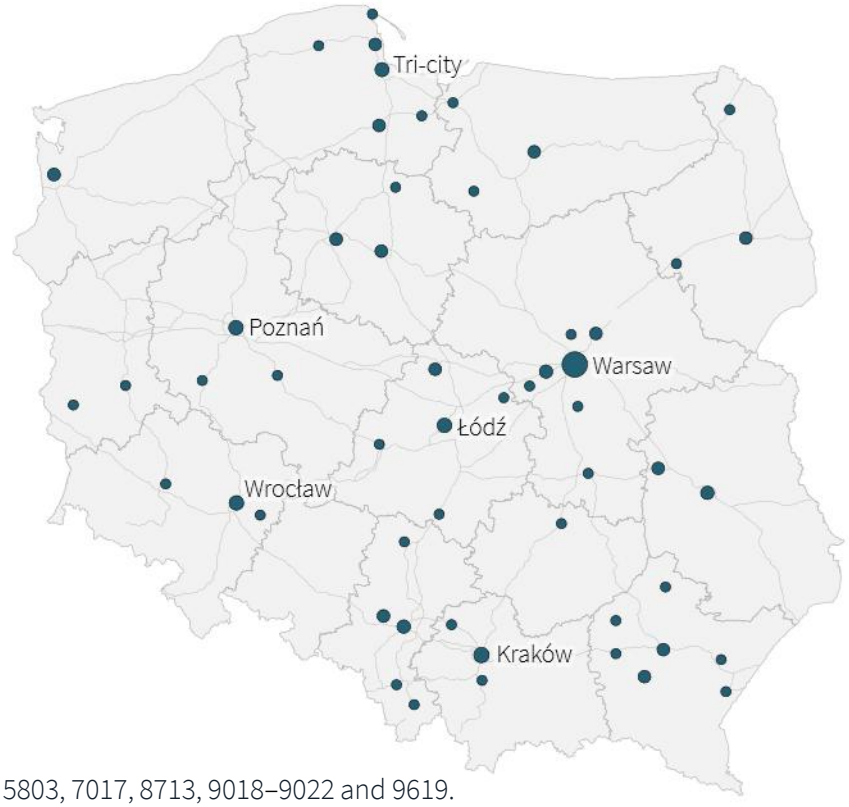
The activities of biotechnology companies are diverse, ranging from medical biotechnology (biologics, gene therapies, diagnostics) and industrial biotechnology (enzymes, biomaterials) to bioinformatics. Many of these companies operate as CROs, providing research services and results to international pharma and biotech partners.

The total number of biotech companies in Poland is lower than in leading countries – for instance, Germany has over 600, while France, Switzerland, and the United Kingdom each have around 1,000. However, the Polish biotechnology sector is narrowing the distance. Between 2022 and 2024, it emerged from a period of stagnation and returned to growth, evidenced by a 38% YoY increase in company expenditures, which reached PLN 3.29 billion (~€0.76 billion) in 2024.

Poland already sits within the top ten global exporters of medical equipment, with manufacturers specialising in areas including diagnostic equipment, orthopaedics, dental equipment, sterilisers, and implants. According to Eurostat, medical device exports reached a value of approx. €5.88 billion* (2024). There are several hundred medical device manufacturers in Poland, from large companies including HTL-Strefa – a global leader in lancet production – Biomed and Mercator Medical, known for single-use medical products, to numerous start-ups applying advanced technologies in telemedicine, AI-driven diagnostics, and rehabilitation devices.

The Polish Agency for Enterprise Development (PARP) reports that new medical device start-ups are being established regularly, including through accelerator programmes. In recent years, Polish

Figure no. 03
Concentration of Selected Active Life Sciences Companies in Poland



*CN codes: 3005, 4014, 5803, 7017, 8713, 9018–9022 and 9619.
Source: BioForum/JLL Research Poland analysis, December 2025

medical device companies have achieved global successes, with notable examples including Scope Fluidics in molecular diagnostic systems and Genomtec in mobile PCR.

Compared with the European Union as a whole, Poland's life sciences industry still has a lower proportion of biotechnological and innovative biopharma companies, and a higher share of traditional pharmaceuticals (generic drug production) and medium-technology medical equipment.

In EU countries with developed life sciences industries (Germany, France, Belgium, Denmark), there are greater numbers of medium-sized and large biotech companies, often emerging around scientific centres. Poland is also showing this trend – increasing numbers of scientific start-ups are being established around universities, research institutions, and hospitals, though most remain in early growth phases.

The life sciences industry's share of Poland's entire economy is growing, but remains lower than in countries such as Belgium or Denmark, where biotechnology and pharmaceuticals constitute a significant portion of the economy. Nevertheless, Poland is catching up. The pharmaceutical sector, for instance, already contributes 0.7% to the country's GDP. Furthermore, medical biotechnology is becoming a statistically significant player, with internal R&D expenditure totaling approx. PLN 1.84 billion (~€0.43 billion) in 2024.

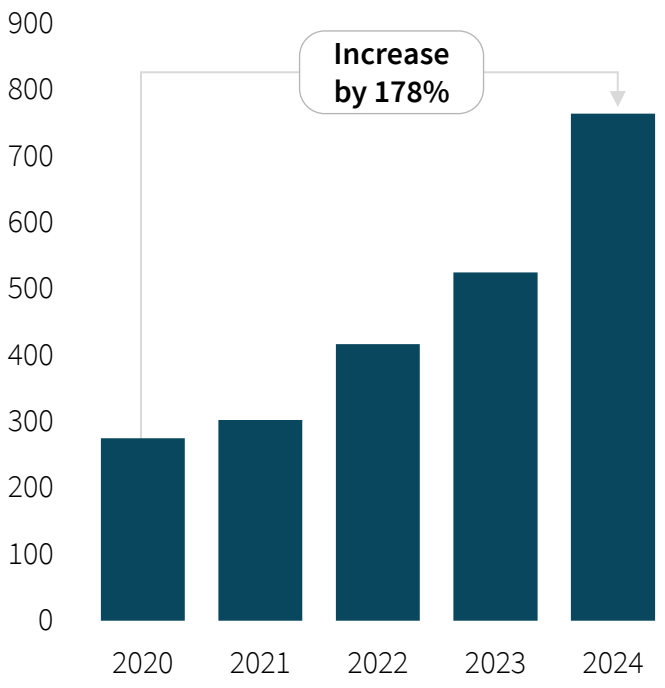
The employment structure also reflects these proportions: about 90,000 people work in pharma, around 12,300 in biotechnology, and estimates for the medical devices sector suggest several tens of thousands. For comparison, Germany's medical devices industry employs over 200,000 people, meaning Poland's figure is correspondingly smaller.

Financial Expenditure

In 2024, biotechnology companies spent approx. PLN 3.29 billion (~€0.76 billion) on their operational and development activities. Over the same period, internal expenditure on scientific research within the biotechnology sector, including spending by institutes and universities, totaled approx. PLN 1.84 billion (~€0.43 billion).

For comparison, the pharmaceutical sector generates revenues of around PLN 55.9 billion (~€12.9 billion) annually, but allocates only a small proportion of revenues to R&D. In the medical devices sector, R&D expenditure is even more difficult to demonstrate. This indicates that biotechnology accounts for a significant portion of innovation (such as drug discovery projects and therapies), but falls short of traditional pharma in terms of capital and operational scale. It is worth adding that public expenditure also reflects this. The ABM indicated that it plans to direct the majority of its PLN 2 billion (~€0.43 billion) towards medical biotechnology (innovative drugs and therapies), highlighting the priority status this sector has gained.

Figure no. 04
Enterprise Expenditure on Biotechnology Activities Grew 178% Between 2020 and 2024, in Million EUR



Source: BioForum based on Statistics Poland, December 2025

Areas of Activity

Pharmaceutical companies focus on medicine manufacturing (mainly generics and OTC), biotechnology companies concentrate on research into new therapies (including biological drugs, antibodies, gene and cell therapies), as well as diagnostics (genetic tests, biomarkers) and bioinformatics solutions. The medical device sector, meanwhile, focuses on equipment production (from simple materials to advanced devices) and increasingly on medical software.

Biotechnology in Poland is largely medical biotech (so-called "red biotechnology") – according to research, approx. 80% of biotech companies operate in oncology, lifestyle diseases, new drugs, or pharmaceutical biotechnology. The remainder comprises industrial biotech (so-called "white biotechnology", such as enzymes and biofuels) and environmental or agricultural biotechnology (so-called "green biotechnology"), which are less developed in Poland. One could therefore say that compared with other life sciences disciplines, Poland's biotechnology sector is narrowly specialised in medicine and pharmaceuticals, which on one hand allows resource concentration, but on the other limits diversification, reducing presence in agricultural biotech, for example.

03
Market Capitalisation of Biotechnology Companies

In recent years, the value of Polish biotechnology companies listed on the Warsaw Stock Exchange (GPW) and NewConnect (NC) has grown markedly. As of late 2025, 14 biotech firms sensu stricto trade on the GPW main market (e.g. Ryvu Therapeutics, Selvita, Captor Therapeutics), complemented by several on NewConnect.

From only a few listings a decade ago, Polish biotech has become an important segment of the capital market. After COVID-19-driven peaks in 2020–2021 and a correction in 2022, valuations have recovered since 2023. The domestic biotech capitalisation totals about PLN 3.72 billion (~€889 million), or PLN 7.5 billion (~€1.77 billion) including Neuca; with foreign dual listings, it reaches PLN 43 billion (~€10.16 billion).

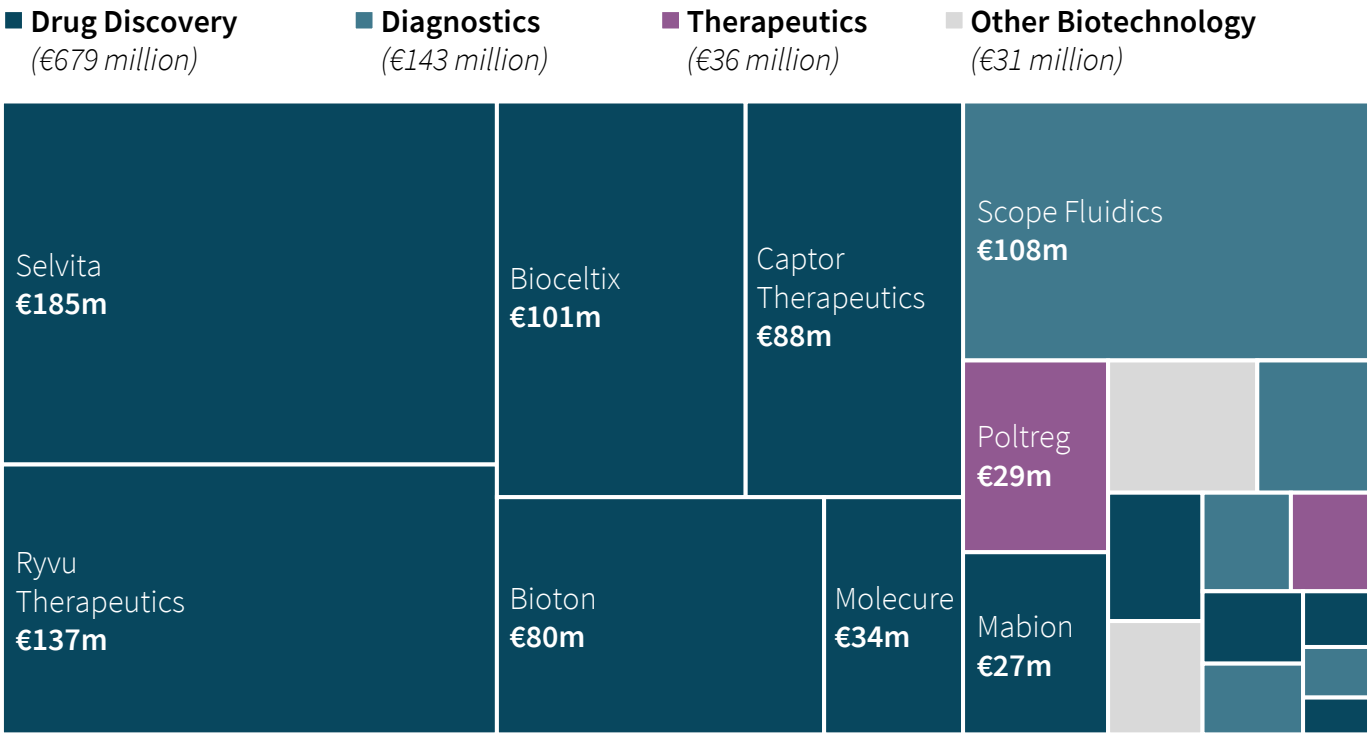
In recent years, the value of Polish biotechnology companies listed on the Warsaw Stock Exchange (GPW) has increased significantly. Both on the GPW main market and NewConnect, the number of biotech companies has been systematically rising, and their market capitalisation – though subject to considerable fluctuations – shows a long-term upward trend.

As at late 2025, 14 biotechnology companies sensu stricto are listed on the GPW main market, including Selvita, Ryvu Therapeutics, Scope Fluidics, Bioceltix, Captor Therapeutics, Molecure, Poltreg, and Mabion, among others. In addition, there are biotech companies listed on NewConnect, which include Read-Gene, Genomed, Medicofarma Biotech, Stem Cells Spin, Hemp & Health, and Genxone.

A decade ago, the Warsaw Stock Exchange featured only a small number of individual biotechnology companies (e.g. Bioton, Mabion, Biomed Lublin). Since then, the trajectory has been positive: the public market has become an increasingly important source of capital for Polish biotech – particularly in the period following the pandemic. Market capitalisation expanded sharply during the COVID-19 bull market of 2020–2021, when many companies' share prices reached record highs. This was followed by a correction in 2022. The biotech sector in Poland has struggled, as elsewhere in the world, during the inflationary period. There has been slight consolidation, with some companies failing due to depleted cash runways. From 2023 onwards, however, we have observed a renewed recovery in valuations.

Figure no. 05

Market Capitalisation of Polish Biotech Companies Listed on GPW and NewConnect



Note: Company classification on the chart is based on their primary activity, as company activities may overlap.
Source: BioForum/JLL Research Poland analysis based on GPW, NewConnect, PitchBook Data, Inc., December 2025

As at late 2025, the total market capitalisation of domestically listed biotechnology companies on the GPW and NC is approx. PLN 3.72 billion (~€889 million). However, most biotechnology companies remain priced below their fundamental value. If Neuca, the GPW-listed healthcare distribution company with activities that also extend into clinical research, is included, the total capitalisation rises to approx. PLN 7.5 billion (~€1.77 billion). When dual listings of foreign pharmaceutical companies, such as Slovenia's Krka and Bulgaria's Sopharma, are also taken into account, the aggregate market capitalisation increases to approx. PLN 43 billion (~€10.16 billion).

Notably, the biotechnology market capitalisation leaders are drug discovery companies developing their own drugs; among them are Selvita (valued at about PLN 784 million; ~€185 million), Ryvu Therapeutics (approx. PLN 583 million; ~€137 million), and Captor Therapeutics (approx. PLN 375 million; ~€88 million), among others. The biotechnology sector remains fragmented, lacking the multi-billion-euro "giants" seen in Western Europe. However, the group of mid-sized companies with valuations between PLN 0.5 billion and PLN 2 billion is expanding.

Strategic investors also value Polish companies – numerous partnering agreements with global corporations (Boehringer, Merck, BioNTech collaborating with Ryvu Therapeutics, Captor Therapeutics, Molecure) raise valuations, and successful financing rounds (such as share issues by Ryvu Therapeutics and Selvita with foreign fund participation) have increased companies' capitalisations.

In summary, the capitalisation of Polish biotech companies has shown an upward trend over the past five years, although non-linear. Polish biotechnology has grown on the stock exchange, evolving from a niche curiosity into one of the key innovative sectors, accounting for around 4–5% of the capitalisation of domestic listed companies. It is expected that, as R&D progresses – with more projects entering clinical phases and the first drug approvals – market valuations may continue to rise. However, it should be remembered that these companies require a constant inflow of capital, and their valuations remain sensitive to external factors such as the investment climate and interest rates. Nevertheless, the Polish biotechnology sector on the GPW and NewConnect has recorded a several-fold increase in total capitalisation over the past decade, reflecting both the arrival of new issuers and the growing valuations of existing companies.

04
Financing Innovation and Biotechnology Companies

Polish biotechnology growth is constrained by two forms of capital scarcity: insufficient real estate investment (discussed in Section 05) and limited access to operating and R&D financing. This section examines the latter—the funding challenges faced by companies developing innovative therapies. Public R&D grants tend to favour projects that guarantee a high number of publications rather than those with the greatest breakthrough potential; they offer modest aid and require co-financing. Banks avoid unsecured high-risk lending, and EU-funded equipment is often restricted to academic use.

Venture capital activity is rising but remains limited, creating a "valley of death" between the research and commercialisation phases. Tax reliefs and a proposed "Breakthrough Technology Development Fund" could help, but uptake and execution matter. Poland requires a more diversified funding architecture – from grants and public-private investments to debt instruments and tax incentives – with better alignment to companies' development cycles.

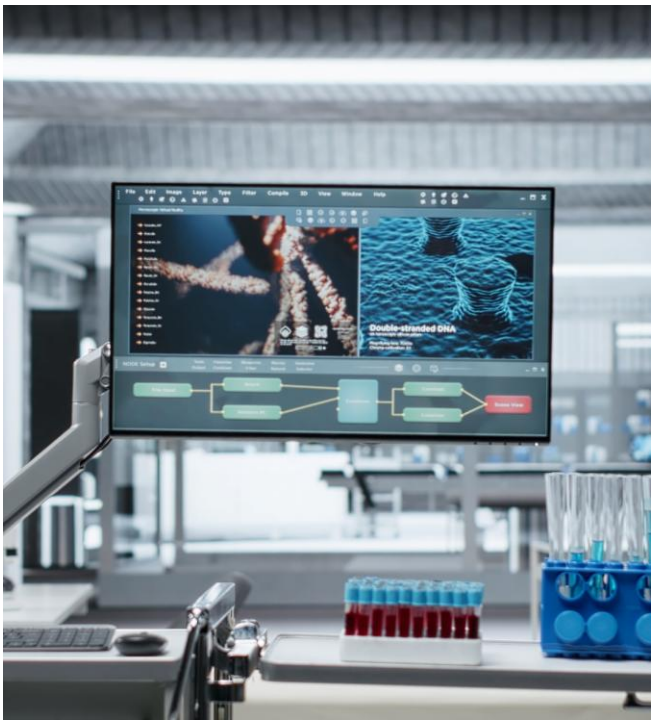
The underfunding of Polish science and limited access to venture capital constitute fundamental barriers to biotechnology sector development. Projects, particularly in early stages, carry substantial risk and require significant financial investment, yet Poland lacks mechanisms for distributing this risk between public and private sectors. Currently, the burden of innovation financing rests primarily on private investors and company founders, whilst the state plays a smaller role than in leading countries. Risk aversion within the Polish public sector creates a situation where bold instruments supporting the most groundbreaking, albeit risky, projects are absent.

Public R&D funding instruments are frequently misaligned with the realities of the sector. The system of scientific grants does not reward genuine innovativeness. Funding tends to flow to projects that are easy to account for and guarantee publications, rather than those with the highest breakthrough potential. Moreover, restrictions on public aid (including de minimis support) mean that assistance for companies is modest. Many SME programmes offer grants of only several hundred thousand PLN – materially insufficient for a biotech start-up developing a genuinely disruptive programme. Although de minimis support is procedurally simple, its ceiling is low (€300,000 per company over three years) and is therefore quickly exhausted in more ambitious projects. Larger grants, in turn, are subject to restrictive public-aid rules and require their own financial contribution, which can be a barrier for early-stage companies that do not yet generate revenue.

Companies also face difficulties in accessing bank financing. Commercial banks are reluctant to provide credit for high-risk projects without collateral, indicating a lack of debt instruments on the market that take into account the specific characteristics of high-risk sectors.

Funding research infrastructure and equipment also presents difficulties. Although EU funds have made it possible to equip many laboratories, private companies are often unable to benefit directly from these subsidies. The purchase of expensive equipment under EU programmes entails specific usage obligations – usually for scientific rather than commercial purposes – and must be maintained by a public institution. There is also a gap in programmes supporting shared infrastructure investments between academia and industry, such as pilot facilities or production lines for biotech start-ups moving beyond the laboratory phase.

A further structural weakness is the lack of seed capital and venture funds specialised in biotech. While the first Polish life-sciences funds have emerged in recent years, and NCBR's Bridge Alfa programme supported the creation of multiple



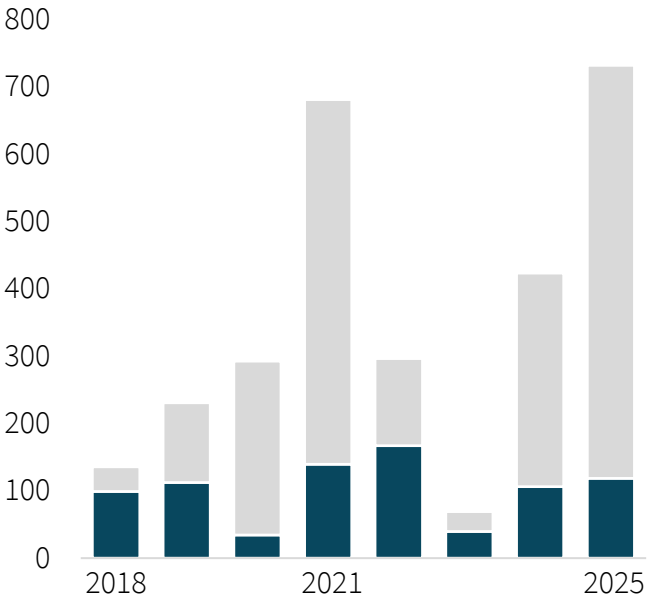
small seed funds, the overall scale remains inadequate. The shortage of financing is deepened by the fact that foreign VC investors still view Poland with caution, perceiving it as a peripheral market. According to PitchBook Data, Inc., in 2025 biotechnology companies raised about €27.45 million from venture investors – a noticeable increase compared with €4.50 million in 2024. Notable deals included Proteine Resources, which secured €12 million in venture funding from Radix Venture and the European Innovation Council; Ingenix.ai, operating at the intersection of the biotech and discovery tools sectors, which raised €9 million in seed funding in a round led by Inovo VC, with OTB Ventures and the International Finance Corporation also participating. The funds will be used to develop the company's proprietary AI platform, expand its team, and enhance capabilities to support more complex clinical trial simulations. Ongeno obtained about €3.4 million in venture funding from undisclosed investors to finance research work and complete the second stage of its project. Vaxican raised €2.4 million in seed funding from the DeepTech Capital Consortium, to accelerate the development of preclinical programmes and advance its first two therapeutic cancer vaccine candidates to clinical readiness. Despite this uptick, overall investments remains insufficient, and young biotechnology companies continue to suffer from a lack of funding at the earliest stage – the so-called "valley of death" between the research and commercialisation phases. However, the overall trend in raising capital for both biotechnology companies and the broader life sciences industry is upward.

Many biotechnology projects can secure funding for basic research (e.g. from NCN) or applied work

Figure no. 06

Rising Capital Volumes Signal the Recovery of the Biotech and Wider Life Sciences Industry in Poland After the Market Correction,

in Million EUR



Source: JLL Research Poland analysis based on PitchBook Data, Inc., December 2025

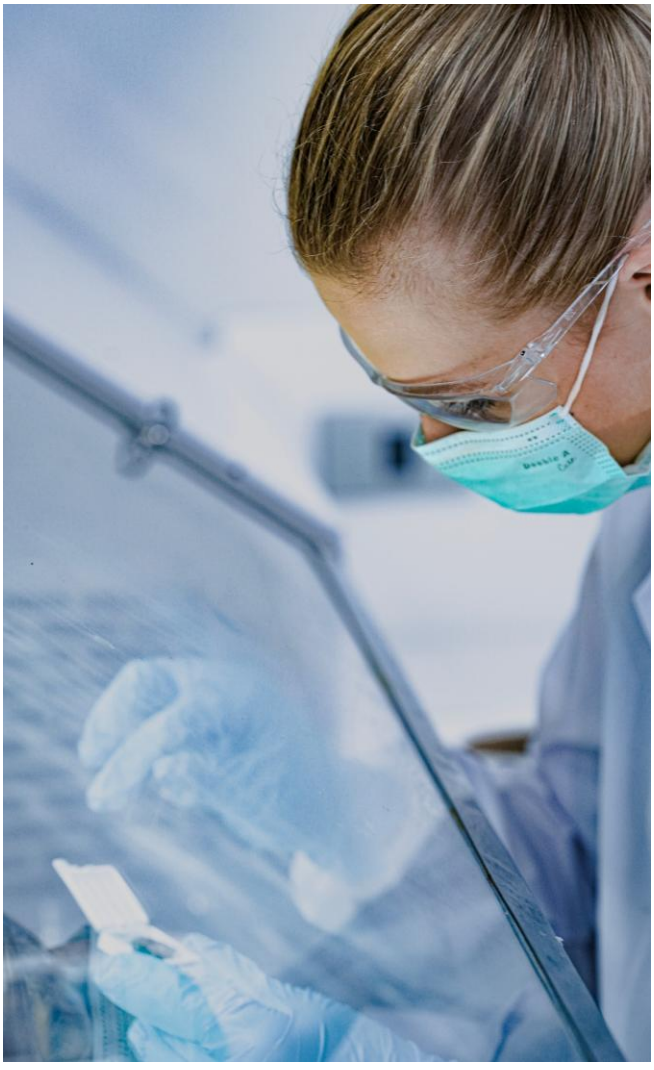
(e.g. from NCBR), but then lack the capital required for expensive preclinical studies or initial product testing. A proportional distribution of risk between the public and private sectors would materially increase the pipeline of new projects. The state could, for example, more often co-invest with funds in the most promising companies through grants, equity participation, or guarantees, thereby reducing investor risk.

Fortunately, these issues are increasingly recognised, and corrective measures are being taken. The government is introducing new instruments such as tax reliefs – the R&D relief enabling deductions of 100–200% of eligible R&D costs, and the IP Box providing a 5% corporate income tax rate on income from patent commercialisation – as well as sector

programmes. However, it is important to note that many of these mechanisms are not being fully utilised by the sector. The R&D relief – particularly the variant related to innovative employees – can be applied already at the stage of income tax prepayments, which in principle makes it accessible even to companies that have not yet generated profit. Nevertheless, despite this theoretical availability, for companies in the early stages of development – before generating revenue or achieving real profit – practical use of the available support instruments remains difficult. Early-stage companies often lack stable staffing structures, regular payroll, and the administrative capacity required to implement and document the relief effectively. As a result, while the legislation permits the use of R&D relief even in the absence of profit, operational realities mean that pre-commercial companies frequently face material barriers, and full utilisation tends to become feasible only once a company begins generating revenue and profit.

A positive signal is the initiative to establish a "Breakthrough Technology Development Fund" with an annual budget of PLN 5 billion (~€1.18 billion). In late August 2025, the President of Poland announced draft legislation to create this fund, intended to provide direct equity support to Polish companies developing breakthrough technologies (including, most likely, biotechnology). The fund is expected to finance start-ups, business ventures, educational initiatives, and international collaboration, with funding to come from tightening the tax system. If implemented, this could materially improve access to high-risk capital in Poland. It will be essential, however, that the fund is professionally managed and invests effectively in areas where commercial capital is reluctant to enter due to risk.

In summary, Poland's biotechnology sector requires a more diversified funding architecture – from grants and public-private investments to debt instruments and tax incentives – with better alignment to companies' development cycles. It is equally important to build a national hub of knowledge and capital; the absence of such a cluster currently contributes to the outflow of top talent and high-potential projects abroad in search of funding. Implementing a coherent innovation financing strategy – explicitly tailored to biotechnology's long return periods, high risk profile, and substantial investment needs – is necessary if Polish companies are to compete on a global stage.




Life Science Park (Kraków)

05
Commercial Laboratory Infrastructure

Poland's life sciences industry is consolidated around leading academic hubs, where universities and technology parks provide talent and research infrastructure. This concentration strengthens local ecosystems but exposes a structural constraint: a persistent shortage of modern laboratories. Most commercial laboratory space in Warsaw, Kraków, Wrocław, Poznań, Tri-city, Łódź is fully occupied.

Demand is rising, driven by biotechnology companies. Supply has not kept pace, forcing start-ups into waiting lists or suboptimal conversions of existing buildings and, in some cases, relocation abroad.

Research Methodology

This research was designed to assess the current state of Poland's life sciences industry, identify existing commercial laboratory stock, and evaluate its alignment with market demand.

As a starting point, we mapped more than 1,000 active companies across a broad definition of life sciences, including research institutes and universities affiliated with the industry. Drawing on desk research and the JLL knowledge base, we reviewed the properties these entities occupy and analysed their leasing history over the past fifteen years.

To assess demand, we surveyed biotechnology companies about their space requirements, including laboratories needed to support ongoing operations. In parallel, we conducted a mystery client exercise involving more than 150 organisations – universities, research institutes, and science and technology parks – to test space availability and leasing terms for prospective tenants.

We complemented these findings with targeted qualitative research. About ten representatives from the life sciences industry participated in structured interview, including individuals from biotechnology companies, landlords of laboratory-office buildings and representatives of government agencies. In addition, we carried out study visits to selected properties and held on-site meetings with representatives of infrastructure departments, leasing managers and board members. The insights gained from these visits and discussions into operational challenges and regulatory considerations helped us think outside the box in market evaluation.

1 Mapping of life sciences companies, the properties they occupy, and associated types of space usage

Method: Desk research

2 Survey study among Polish biotechnology companies

Method: CAWI (Computer Assisted Web Interview) study

3 Verification of the actual state

Method: Mystery client exercise conducted via email and telephone calls

4 Interviews with representatives of independent companies, lab space providers, and government agencies

Method: Structured interview

5 Study visits to selected commercial R&D properties

Method: Arranged site visits with representatives of the infrastructure department, leasing managers, or board members

Key Life Sciences Hubs and Laboratory Infrastructure

The growth of the life sciences industry, including biotechnology, is closely tied to a small number of academic-industrial centres. The main biotech and medical clusters are concentrated within several agglomerations, each distinguished by specific local specialisations. Across these clusters, the supply of commercial laboratory space remains scarce and often highly specialised. The lack of standardised, flexible facilities further constrains availability, resulting in an overall shortage of laboratory space.

Concentration in Key Hubs

Most companies, laboratories, and research institutes are located in Warsaw, Kraków, Wrocław, Poznań, Tri-city, Łódź, and Lublin. This pattern is expected because proximity to strong medical universities and technology parks provides access to skilled staff and research infrastructure.

In Warsaw, activity is concentrated around the Ochota campus and nearby institutes of the Polish Academy of Sciences (PAN); in Łódź, BioNanoPark plays a similar catalytic role; in Kraków, the life sciences cluster spans the Jagiellonian University campus and JCI's Life Science Park; Wrocław's industry growth is anchored in the vicinity of EIT+ and the Pracze campus and the Wrocław Technology Park; Poznań is home to Nickel BioCentrum; in Gdańsk, the intercollegiate Faculty of Biotechnology (UG-GUMed) sits alongside companies around the Pomeranian Science and Technology Park.

> *Location determines the specific focus of activity: for instance, Gdańsk has strength in molecular and marine biotechnology; Warsaw in immunology and oncology; Poznań in agricultural and industrial biotechnology.*
>
> *The result is a polycentric network rather than a single dominant hub on the scale of Boston or Oxford.*

Biological/chemical wet lab,
Copernican Revolution Lab in Warsaw

Snapshot of Commercial Laboratory Stock

Poland's commercial laboratory space is geographically uneven, operating through a range of access models shaped by various property operators – including technology parks, public universities, and research institutes. Consequently, lease terms, availability, and service quality vary significantly between operators, which in turn affects time-to-access and the technical readiness of space upon tenant handover.

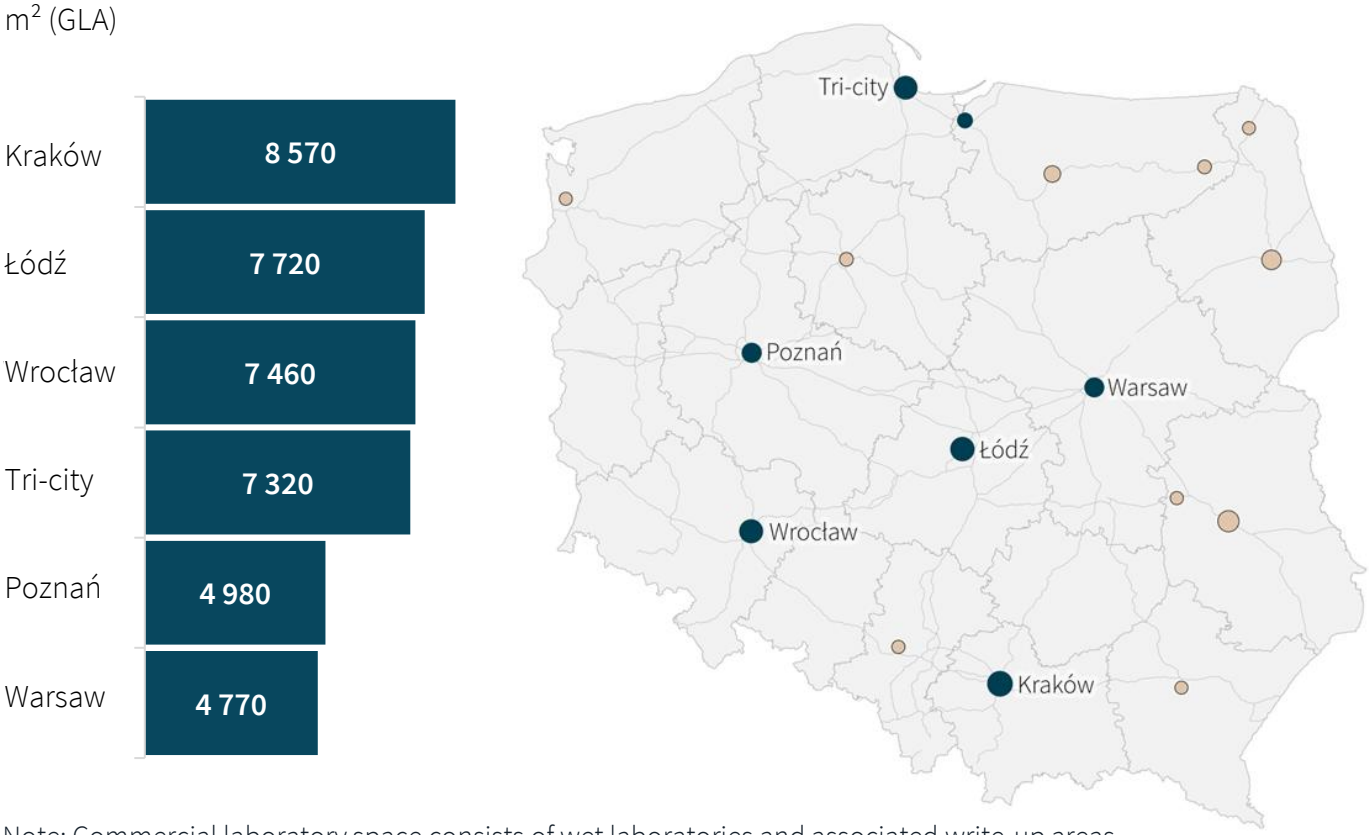
Access models range from exclusive leases of laboratory space to shared use with other companies or research teams, particularly where universities provide the infrastructure. Some operators also offer individual workstations for small-scale or short-term projects.

Such R&D properties typically combine laboratory and office functions, with a typical building allocating around 40–60% of its floor area to laboratories and the remainder to offices.

As at late 2025, the total stock of commercial laboratory space in Poland amounts to approx. 52,300 m^2 (GLA), complemented by 74,000 m^2 (GLA) of adjoining office space. The largest concentration of commercial laboratory space is in Kraków – about 8,570 m^2 (GLA) – followed by Łódź, Wrocław, Tri-city, Poznań, and Warsaw. The vast majority of this commercial laboratory space is already leased; for instance, JCI's Life Science Park in Kraków is fully occupied and has waiting lists for space rental.

Figure no. 07

Stock of Commercial Laboratory Space in Key Polish Life Sciences Clusters, m^2 (GLA)

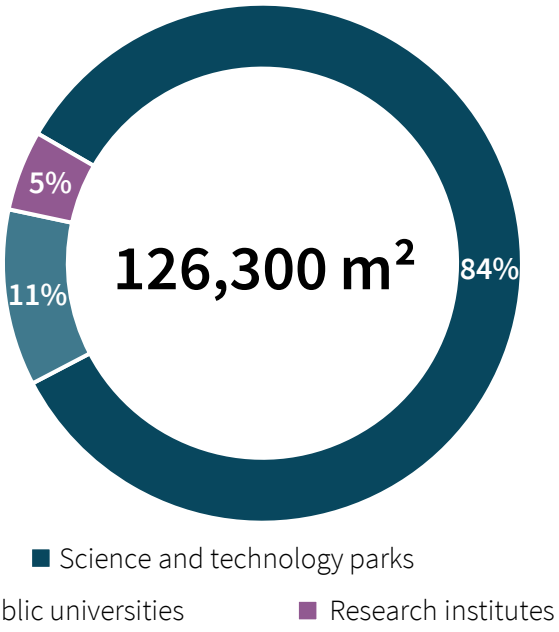


Note: Commercial laboratory space consists of wet laboratories and associated write-up areas.
Source: JLL Research Poland, December 2025

About 84% of commercial laboratory-office space in Poland is located within science and technology parks. Public universities and research institutions possess substantial laboratory infrastructure, primarily for their own research teams; however, parts of this space are sometimes made available on a commercial basis – either for collaborative projects, service laboratories, or exclusive rentals. Approx. 11% of total commercial laboratory-office space is situated at universities, and 5% within research institutes. Where offered, such laboratory space is usually separated, with a distinct entrance to ensure safety management and controlled access. Availability of this space is fluid, as universities do not have long-term commercial offerings and may add or withdraw laboratory or office space from the market depending on their plans.

Figure no. 08

Distribution of Commercial Laboratory and Adjoining Office Space



Source: JLL Research Poland, December 2025

Role of Location in Life Sciences Industry

Companies tend to locate in regions offering infrastructure and financial support. As a result, local ecosystems are emerging – for example, in Małopolska a dedicated programme supports medical start-ups, while in Lower Silesia seed funds originating from EIT+ have become an early-stage capital platform. National investment incentives under the "Polska Strefa Inwestycji" framework also favour selected areas: investors in Podkarpackie or Lubelskie can obtain reliefs of up to 70%, which are explicitly designed to stimulate centres outside the major cities.

Despite such incentives, the bulk of life sciences companies continues to concentrate around existing academic centres, where centres of excellence, reference laboratories, and bioparks are being established. In Warsaw, for example, the BioNanoCentrum of the Warsaw University of Technology operates alongside the National Institute of Oncology (formerly the Oncology Centre) with its incubator, and the UKSW campus now houses a new genomics centre. Kraków brings together the Małopolskie Centre of Biotechnology and the Technology Transfer Centre (CITTRU); Poznań hosts the Wielkopolska Bioregion anchored by the Nickel Technology Park; Wrocław has developed the Łukasiewicz Research Network – PORT Polish Centre for Technology Development institute; and Gdańsk benefits from the Tri-city Science and Technology Park with its biotechnology centre. These public investments are concentrated in leading academic hubs, reinforcing their competitive advantage. By contrast, weaker regions – particularly Eastern Poland and smaller cities

– lag far behind, where the life sciences industry remains marginal. Official statistics point to clear regional imbalances: according to Statistics Poland data, most biotechnology specialists work in Mazowieckie, Małopolskie, and Dolnośląskie voivodeships, while the so-called "eastern wall" has the lowest employment levels in this field.

In the wider EU context, this means that Poland is effectively developing several distinct "bioregions" rather than a single national hub – a decentralised strategy that nonetheless leverages diverse local strengths.

Gap in Commercial Laboratory Infrastructure

The rapid expansion of Polish biotechnology companies and the intensification of research activity have revealed a structural constraint: there are too few modern laboratories available for lease in Poland, which now represents one of the main bottlenecks to the growth of the life sciences industry.

Most new companies cannot afford to build their own R&D properties. As a result, demand for ready-to-use laboratory-office modules in technology parks is strong and steadily rising.

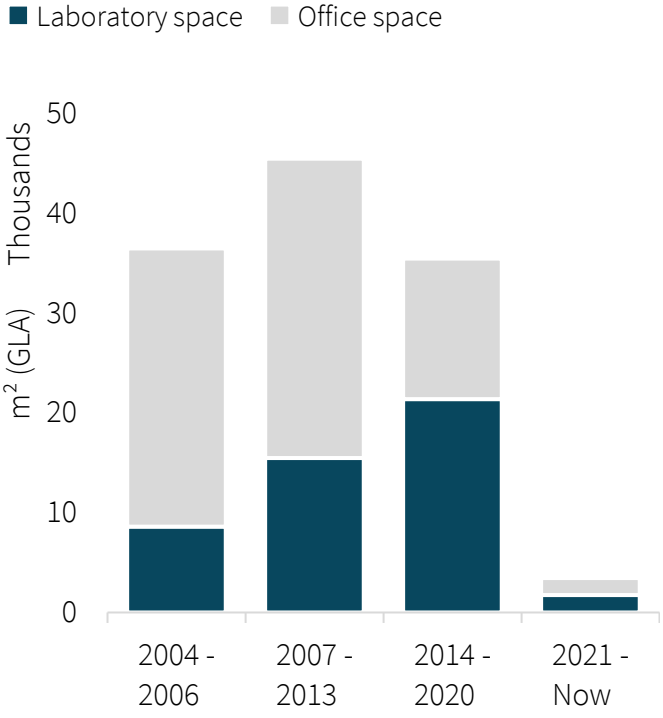
Supply has not kept pace. Nickel BioCentrum in Poznań, for example, offers approx. 4,000 m^2 (GLA) of high-specification laboratory and office space that reached full occupancy shortly after opening. In Warsaw, larger biotech incubators are only now being planned – so far, start-ups have mostly subleased space within research institutes or rely on small academic labs. Additionally, in the pipeline are conversions of existing office space into laboratory space.

The scale of unmet demand is evident in 2024 Statistics Poland data. Some 66.5% of biotech companies focused solely on R&D without in-house production, which means all of them require access to well-equipped laboratories.

At the same time, 95.8% of sector expenditure was financed from their own funds, suggesting that a material share of these resources is allocated to securing infrastructure (equipment and premises rental). The increase in laboratory employment (headcount in biotechnology R&D functions rose by 43% YoY in 2024) also indicates growing occupancy of existing properties. According to the survey conducted by JLL in partnership with BioForum and CRIDO, 65% of respondents declared plans to expand the space they occupy in the next few years.

Figure no. 09

Supply of New Commercial Laboratory-Office Space in Poland in Different EU Budget Cycles



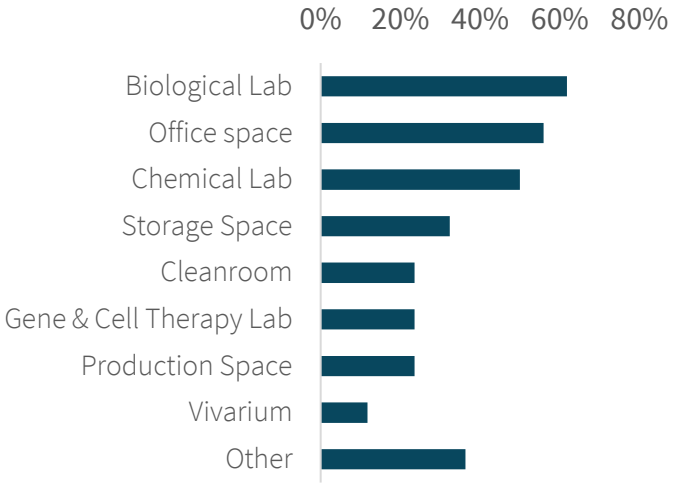
Source: JLL Research Poland, December 2025

Structure of demand

The survey further reveiled the severity of the infrastructure shortage and reveal the specific technical requirements driving unmet demand.

Figure no. 10

Which of the following types of space does your company currently occupy



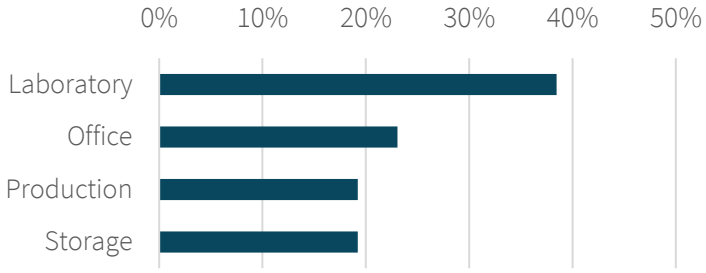
Source: JLL Research Poland, December 2025

Biological laboratories constitute the dominant surface type (62% of companies) followed by office space (56%), which reflects the "laboratories + write-up space" model. Cleanrooms are utilized by 24% of companies - an indicator of growing specialization in biologics production and GMP-compliant processes.

Furthermore, 35.3% of companies report they will require additional space (laboratory, office, or storage facilities) within the next 12 months, with an additional 17.6% anticipating such requirements within a 13-24 month timeframe. Notably, 47% of these companies report difficulties in finding suitable laboratory space, highlighting a significant supply-demand gap in the market.

Figure no. 11

What additional type of space or properties does your company currently require?

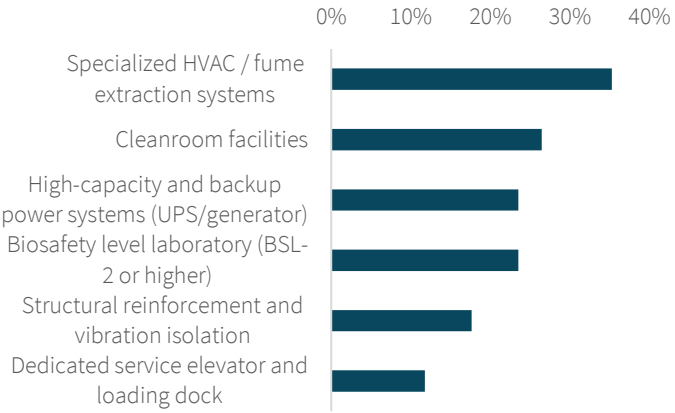


Source: JLL Research Poland, December 2025

Among companies seeking additional space, laboratory facilities remain the primary requirement at 38%, followed by office space at 23%, while production and storage space each account for 19% of demand, underscoring the continued focus on R&D infrastructure.

Figure no. 12

What specific technical requirements are critical for your laboratory operations?



Source: JLL Research Poland, December 2025

These technical requirements underscore a fundamental market challenge: Poland's laboratory shortage is not merely quantitative but qualitative. The 35.3% demand for specialized HVAC systems and 26.5% for cleanrooms indicates that generic conversions of office or warehouse space - whilst addressing square-metre deficits - will not satisfy tenant requirements without material capital investment in building systems.

Across major life sciences hubs, available commercial laboratory space is now close to fully utilised. Biotechnology companies often face waiting lists for space or must adapt suboptimal premises, including former school buildings, legacy in-house labs, warehouses or office buildings. For example, in Wrocław, Pure Biologics has leased approx. 3,200 m^2 of office space under a 10-year agreement in Business Garden, adapting around 1,400 m^2 of it into laboratories. In the case of larger companies, such as Selvita, the shortage of commercial laboratory space has prompted the construction of their own R&D centres. In 2020, the company announced that it had exhausted all laboratory space available for lease in Kraków and Poznań. This led to the development of the Selvita Research Centre (Hexagon), completed in 2023, with plans to construct an additional building nearby in Kraków.

Commercial real estate developers have begun to identify this niche, and new projects to build private "life science parks" are emerging. Examples include the planned expansion of the Łukasiewicz Network campus in Warsaw and forthcoming new laboratories in the CEZAMAT complex, a new building in the Jagiellonian Park and further labs adjacent to the Jagiellonian University campus in Kraków, and an incubator next to Łukasiewicz Research Network – PORT Polish Centre for Technology Development in Wrocław. However, demand for high-quality laboratory space currently exceeds supply, highlighting a clear gap in the market. As a result, rents for well-equipped laboratories are high. In regional cities, rents for prime, purpose-built R&D buildings – where chemical work is possible – can reach the level of office prime rents in Warsaw's CBD buildings. The lack of available laboratory space leads some companies to relocate abroad where more commercial laboratory space is available, for example, in the Czech Republic or Germany.

Łukasiewicz Research Network – PORT Polish Centre for Technology Development in Wrocław

Location and Property Availability

The concentration of companies in Poland's largest cities intensifies the shortage of laboratory space, as demand is highest in Warsaw, Kraków and Wrocław – where land and construction costs are also the highest. Companies based in these cities report that the lack of laboratory infrastructure is one of the main barriers to growth. The government's "Biomedical Sector Development Plan" highlights the need for investment in specialised research infrastructure. There are plans to use funds from the National Recovery Plan (KPO) to create a network of laboratory centres, potentially under public-private partnership models. Some local authorities are also taking the initiative – for instance, Gdańsk is considering the construction of another biopark, while Łódź is developing a Central Biotechnology Hub part of the Grohman Factory revitalisation.

These investments could ease the laboratory space shortage once completed. However, they will not solve the current bottleneck. The projects are still several years away. At present, limited laboratory availability continues to slow the industry's development; a start-up may secure a grant for its project but cannot begin experiments without access to laboratory space and equipment.

Connections with Industry and Production Hubs

In addition to academic hubs, traditional pharmaceutical manufacturing centres are also important on Poland's life sciences map – for example, Starogard Gdański (Polpharma), Pabianice/Tarchomin (Polfa), and Dębica (Mabion). These locations already have production properties, though they are not necessarily accessible to new companies. Nonetheless, some larger companies are offering, or planning to offer part of their production capacity for contract manufacturing, which could help start-ups move from the laboratory phase to pilot-scale production.

Another trend involves the establishment of shared service centres for global companies in Poland – for instance, Takeda Pharma's large service centre in the Sterlinga Business Centre in Łódź, and R&D centres operated by Roche and Polpharma in Warsaw. These developments also drive demand for highly qualified staff and infrastructure, although the shared service centres typically require office rather than laboratory space.

In summary, the development trends of Poland's life sciences industry are characterised by increasing concentration of activity within key hubs, strengthening local ecosystems, but simultaneously highlighting infrastructure shortage – particularly laboratory space. Demand for commercial laboratory premises is high; virtually all existing properties are occupied, and new companies continue to generate demand for additional space.

Data showing number of company growth (+26% YoY) and R&D employment (+43%) indicate that Poland urgently needs to expand its laboratory base to avoid hampering this growth. As the main hubs are concentrated in large academic cities, investment in laboratory space should be focused there. A global trend – also visible in Poland – is the development of specialised life sciences campuses. Their ongoing expansion, and the creation of new ones, will determine whether Polish biotechnology can fully realise its growth potential or encounter an "infrastructural glass ceiling."

Łukasiewicz Research Network – PORT Polish Centre for Technology Development in Wrocław

Warsaw's Life Sciences Ecosystem Lacks a Dedicated Technology Park

The Mazowieckie region generates Poland's highest volume of innovative start-ups and hosts the country's largest concentration of R&D-intensive life sciences companies. In principle, this should create the depth of demand required to sustain the development of a commercial laboratory space market. In practice, however, the market remains difficult to navigate and is still at a nascent stage. ***Reliable information on available laboratory space*** *– its technical specifications, equipment, fit-out standards, and arrangements tailored to specific types of laboratories* ***– is scarce, fragmented, and often limited to prospective occupiers****.*

This lack of transparency matters because life sciences occupiers' needs are not uniform. A company undertaking biological research will require different infrastructure from one conducting chemical research – ranging from ventilation regimes and air-change rates to waste management, storage requirements, and specialised equipment. ***Where the market cannot clearly signal what exists, on what terms, and for which use-cases, tenants face a prolonged and costly search process****. Both new companies and those already operating for years that cannot build their own R&D facilities may spend months – and in some cases years – trying to secure space that meets their needs.*

This dynamic is further reinforced by the limited supply of appropriate laboratory space across Poland's leading biohubs, with the constraint most visible in Warsaw.

Warsaw currently lacks a dedicated life sciences technology park *comparable to those established in regional cities, such as the Life Science Park in Kraków, BioNanoPark in Łódź, the PORT Polish Centre for Technology Development in Wrocław, or the Tri-city Science and Technology Park in Gdańsk. As a result, existing commercial laboratory properties do not fully meet current demand.*

Jan Jakub Zombirt
Head of Research, JLL Poland

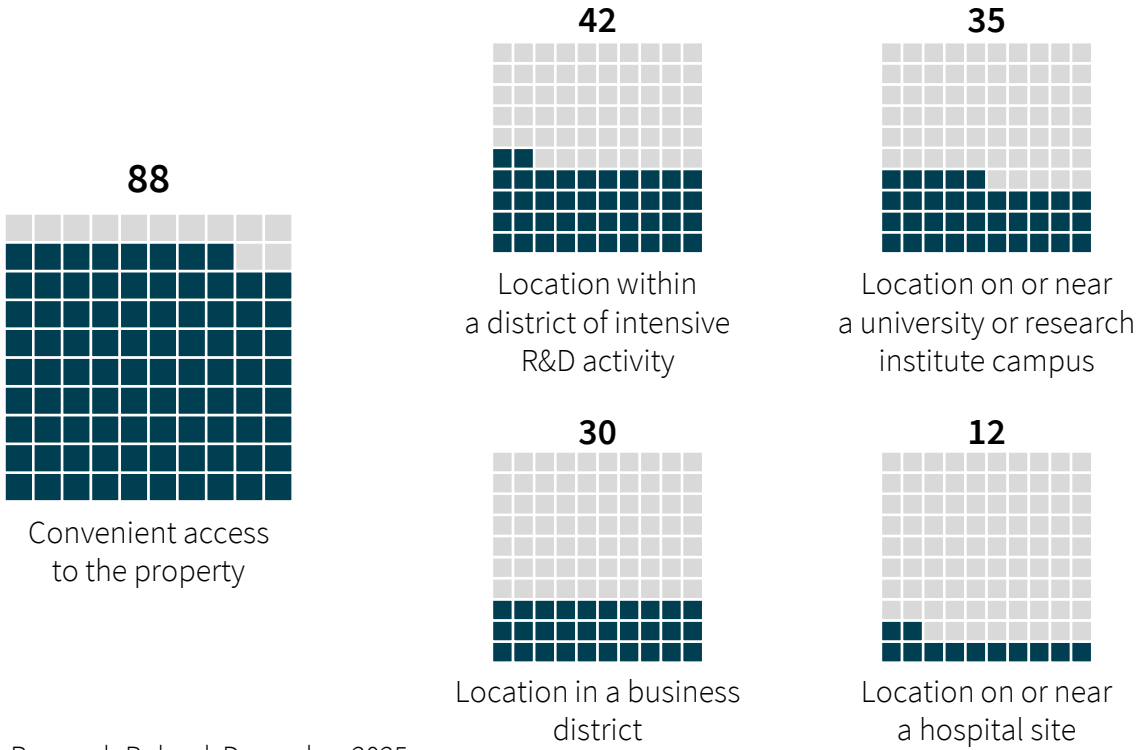
In a survey of Polish biotechnology companies, respondents identified convenient access to the property as the most important location criterion when selecting laboratory sites. 88% of respondents rated this factor as important or very important, highlighting that commuting convenience is not a secondary consideration but one of the key drivers of workplace attractiveness.

This contrasts with market practice, which shows that new R&D developments – including schemes providing commercial laboratory space – are frequently positioned on the peripheries of major cities or within suburban areas, a pattern that is particularly pronounced in Warsaw. This outcome is largely driven by land costs and technical constraints. However, the commercial implications are material. Large pharmaceutical and biotechnology companies engaged in drug discovery, and operating properties outside urban areas, frequently report difficulties in attracting and retaining talent. In laboratory-based roles, where on-site work is essential, this issue becomes especially significant.

In cities with mature life sciences ecosystems, where supply and demand dynamics indicate a clear need for new laboratory space, it is worth considering dedicating a portion of planned office buildings or mixed-use projects to flexible lab space. It is crucial, however, that the start of such a project is preceded by thorough market research and by securing pre-let agreements for at least 60% of the planned area. In our knowledge, the challenge of finding and securing laboratory space

Figure no. 13

Among the Proposed Location Factors for Selecting a Laboratory Site, Respondents Indicated that Convenient Access to the Property is the Most Important Factor, % of respondents indicated the factors as important or very important



Source: JLL Research Poland, December 2025

is not confined to SMEs; it is equally evident among international companies, which periodically seek between 500 and 1,500 m^2 of office-laboratory space and face the same scarcity of suitable premises.

A further avenue for consideration, where economically justified, is the repurposing of vacant office or industrial/ warehouse buildings within city limits whose spatial parameters can technically meet the operational requirements of life sciences tenants, secured in advance through long-term lease agreements. Success in such conversions depends fundamentally on three elements: the capacity to implement requisite structural and technical specifications, the establishment of an appropriate office-to-laboratory space configuration, and the building's location in a suitably accessible area. In Warsaw, the largest underlying opportunities for such adaptive reuse may be found in areas with an established or emerging presence of life science companies and ecosystems, such as the Służewiec, Puławska, and Żwirki i Wigury corridor.

"Over recent years, we have observed a steady increase in enquiries from life sciences companies seeking both office and laboratory space across Poland's regional markets. Whilst this sector does not yet represent the most dynamic source of demand in cities such as Kraków, Wrocław, Poznań, or the Tri-city agglomeration, the growth trajectory is clear and the enquiries are becoming more sophisticated. What makes these markets increasingly attractive is their combination of research university proximity, established technology parks, and improving infrastructure—fundamentals that are beginning to resonate with both domestic companies and international occupiers.

From a commercial real estate perspective, certain regional cities have crossed an important threshold. Kraków, for instance, has developed genuine visibility in the life sciences sector—anchored by success stories such as JCI's Life Science Park and companies like Selvita—and whilst it remains on a development path rather than a fully mature cluster, it has achieved a critical mass that other cities are now working to replicate. Wrocław, Poznań, and Łódź each offer their own locational advantages and are building ecosystems of increasing depth.

The challenge is one of supply. Available laboratory space in leading regional hubs is approaching full occupancy, and demand has begun to outpace current market offerings. However, this constraint also indicates genuine occupier interest. Where we see persistent, demonstrable demand—even if not yet at scale—targeted development activity tends to follow. Poland's regional cities possess many of the underlying conditions required for sustained life sciences growth."

Karol Patynowski
Senior Director, Head of Regional Markets, JLL Poland

Capital markets perspective

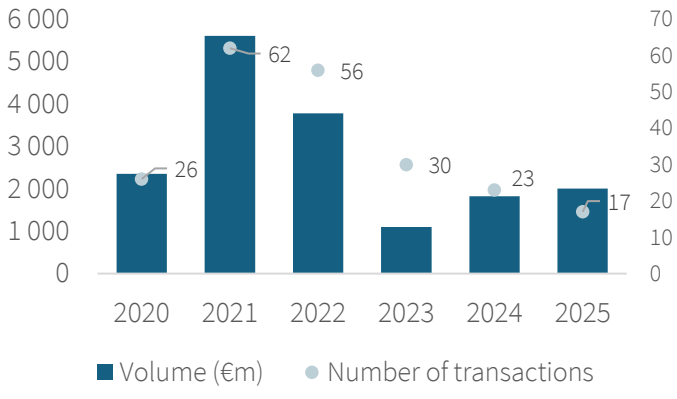
The laboratory shortage is not only an operational challenge - it is also an investment opportunity that remains untapped. This section examines life sciences real estate from a capital markets perspective and identifies the conditions required to unlock institutional investment in Poland.

As demonstrated in the previous sections, Poland faces a critical mismatch between laboratory demand and supply. Therefore Life Science industry requires not only R&D funding, but also real estate capital to develop laboratory infrastructure. This section examines life sciences real estate as an investment asset class and identifies the conditions required to unlock institutional capital in Poland

A Resilient Asset Class

Life sciences real estate has emerged as one of the most resilient commercial property sectors. However, European investment volumes declined from €5.6 billion in 2021 to €2.0 billion in 2026. Despite this correction, the decline reflects supply-side constraints - lack of available investment-grade product - not lack of investor appetite. For Poland, this creates a strategic window to attract capital that currently lacks deployment opportunities in Western Europe.

Figure no. 14: Europe - Life Sciences Transaction Volume, 2020–H1 2025 (€m)



Source: JLL Research, April 2026

The investment case: Rental Premium and Yields

Laboratory properties in leading European clusters command 21–64% higher rents than prime office buildings. Cambridge and Oxford achieve +52% and +64% premiums respectively; Berlin, as an emerging market, achieves +21%. In Kraków, the rental premium between fully fitted lab and a modern office building in the same location can be as much as 25-30%.

In Western markets, prime life sciences properties achieve net initial yields of 4.50–5.25% - representing 25–100 basis point compression versus prime office due to income stability and long-lease structures

Viability and Tenant Mix Strategy

For Polish life sciences properties to achieve investment-grade status and liquidity, developments must demonstrate balanced tenant profiles. The optimal model combines:

1. Anchor Stability: A corporate or institutional tenant (e.g., established pharma R&D unit, CRO) providing long-term lease commitment and strong covenant
2. Growth Optionality: A curated mix of scale-ups and later-stage start-ups capturing sector upside and signaling ecosystem depth

This structure de-risks capital deployment whilst positioning the asset for value creation as Poland's life sciences ecosystem matures. Pre-leasing commitments covering 60–70% of space prior to financial close would materially enhance bankability and broaden the investable universe for both domestic and cross-border capital.

06
Access to Research Infrastructure

Companies' spending on biotechnology activities is growing (PLN 3.29 billion spent in 2024, +38% YoY), yet constraints in laboratory infrastructure are slowing scaling. Advanced laboratories are concentrated in several academic and pharmaceutical centres, and their ownership is fragmented with a lack of transparency of the existing laboratory infrastructure and on the terms of leasing.

Existing laboratory space is often inflexible, as a result requiring high adaptation investments to start using. High equipment costs, limited budgets for servicing and upgrades, as well as lengthy approvals, and strict biosafety regulations, further restrict availability, often pushing companies to outsource R&D services abroad.

Biotechnology is one of the defining growth engines of the 21st century, given its strategic importance to healthcare, agriculture and environmental protection. In Poland, the biotechnology sector is expanding at pace, as evidenced by rising R&D investment and an increasing number of companies operating in the field. According to Statistics Poland, companies' spending on biotechnology activities in Poland reached PLN 3.29 billion (~€0.76 billion) in 2024, a 38% YoY increase. Despite this momentum, the sector continues to face material structural constraints. The main challenges of the Polish biotechnology sector and their potential solutions are presented below.

Limited Access to Laboratory Infrastructure

Limited access to modern laboratory infrastructure is one of the main barriers to the development of biotechnology in Poland. The most advanced laboratories and research equipment are concentrated within a small number of the largest academic centres and pharmaceutical companies, and their total area is insufficient. A shortage of laboratory space – or premises that can be adapted – makes it difficult for early-stage biotech companies to establish and scale. This challenge is compounded by fragmented ownership of existing infrastructure. Laboratories are spread across different institutes and universities that operate largely in isolation, making it difficult to create synergies and fully utilise national capacity. Moreover, a number of modern research centres established with European Union funding are underused due to the absence of effective mechanisms for shared access and inter-institutional collaboration.

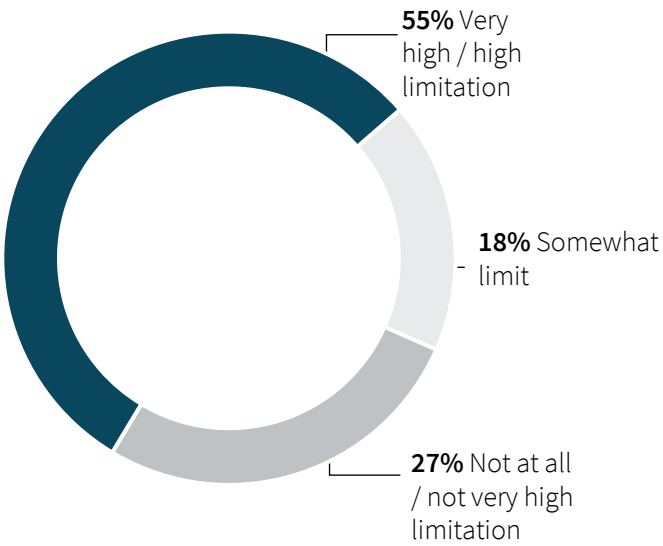
As a result, biotechnology companies are often forced to rely on overseas CRO providers or even delay their research project timelines, increasing the risk of cash runway depletion.

Limited Spatial Flexibility of the Infrastructure

Another problem is that the infrastructure often proves to be spatially inflexible. There is a lack of modular laboratories that can be quickly adapted to the needs of different projects. R&D buildings are typically designed as rigid structures. In practice, this means that adapting the available space often requires substantial investment in fixed assets to meet the needs of a particular project. This creates a problem where laboratory space cannot be rented for short periods, for example, by start-ups. This rigidity makes it harder to reuse of technologies across different scientific

Figure no. 15

55% of Respondents Report that the Availability of Laboratory Space Limits Their Company's Growth



Source: CRIDO/JLL Research Poland, December 2025

disciplines. While new concepts are emerging – such as container-based modular laboratories (mobile lab containers) or open-plan spaces with modular segmentation for companies (e.g. next-generation technology park models) – these remain the exception rather than the rule in Poland.

Financial and Administrative Factors

Laboratory space for start-ups' everyday use needs lab benches, chemical fume hoods, and laminar flow, among others. However, they occasionally need advanced research equipment, for example, bioreactors, mass spectrometers, low-temperature freezers, DNA and RNA sequencers and may even require professional staff to operate this equipment. This equipment is prohibitively expensive, placing it beyond the reach of many start-ups without access to shared laboratory facilities.

Public institutions, in turn, often lack the budgets required to maintain and modernise equipment. A particularly acute issue is insufficient funding for servicing and software or hardware updates, which leads to rapid depreciation of newly purchased devices. From a regulatory and operational standpoint, young companies also face significant bureaucratic hurdles when attempting to access university or institute infrastructure, including lengthy approval processes, stringent biosafety requirements and inflexible access rules. As a result, the potential of existing laboratories is not being fully utilised.

> *Recommended actions include establishing a central, national catalogue of available R&D infrastructure, alongside a structured system for making equipment and premises accessible to industry. There is a strong case for integrating dispersed laboratories into a coherent nationwide ecosystem – for example, through a network of open-access laboratories where entrepreneurs could rent equipment and space for the duration of a project.*
>
> *It is also necessary to close critical infrastructure gaps where needs are greatest (such as pilot facilities for semi-industrial scale production), complemented by a package of legal and administrative reforms to support innovation. These could include simplifying procedures for companies to lease university laboratories, introducing more flexible rules governing work with biological materials, and providing fee reductions for start-ups using specialist equipment.*

Łukasz Kościjańczuk
Partner, CRIDO

07
Warsaw's Life Sciences Ecosystem

Warsaw stands as Poland's leading centre for life sciences, hosting the country's highest concentration of companies across pharma, biotechnology, and medical devices, among others. Its ecosystem is supported by 35 research institutions and 17 universities that generate talent and innovation.

The capital also leads in scientific excellence, with 20 institutions rated highly (A+ or A) by the Science Evaluation Committee, far ahead of other Polish cities such as Kraków and Łódź.

Investor-developed commercial laboratory space accounts for only 4.3% of Warsaw's total laboratory stock, with the remainder comprising public or private owner-occupied facilities, which are not always purpose-built.

Warsaw's Life Sciences Growth Potential

The area hosts the largest number of companies from pharma, biotechnology, medical devices, and digital health & AI sectors, and related fields. The ecosystem is strengthened by 35 research institutions and 17 universities that conduct relevant research or offer programmes in life sciences disciplines, thus providing talent and new ideas.

The Science Evaluation Committee assessed 33 institutions conducting life sciences research, of which 20 received at least one A+ or A-rated discipline; within this group, 6 hold an A+ rating (distinguished) and 14 an A rating (very good).

These figures illustrate the scale of research in the life science disciplines, which is conducted in Warsaw and forms the largest cluster of highly rated research institutes. The next tier – Kraków and Łódź – each has only six institutions with similarly high ratings.

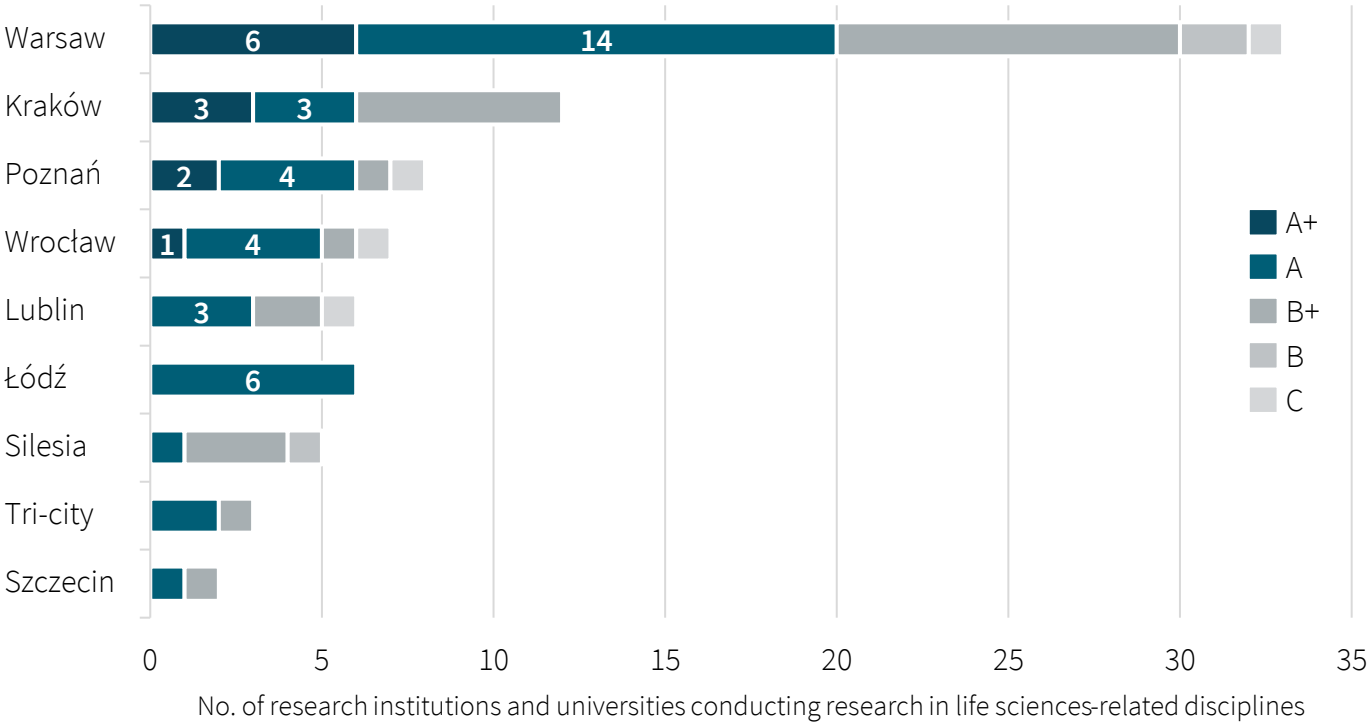
Notwithstanding the scale of its life sciences ecosystem, Warsaw's stock of commercial laboratory space lags behind that of other regional cities, and this gap has become one of the key bottlenecks to local ecosystem growth.

Laboratories are a Fundamental Requirement for the Growth of the Life Sciences Ecosystem

Although demand for commercial laboratory space remains strong, supply is constrained – about 2,000 m^2 (GLA) of office space is currently being speculatively adapted for commercial

Figure no. 16

Warsaw Area has the Largest Number of Research Institutions and Universities with at Least One A+ or A-rated Discipline in the Field of Life Sciences



Source: JLL Research Poland analysis based on POL-on, December 2025

laboratory-office use in Warsaw (as at late 2025), and new R&D buildings are planned.

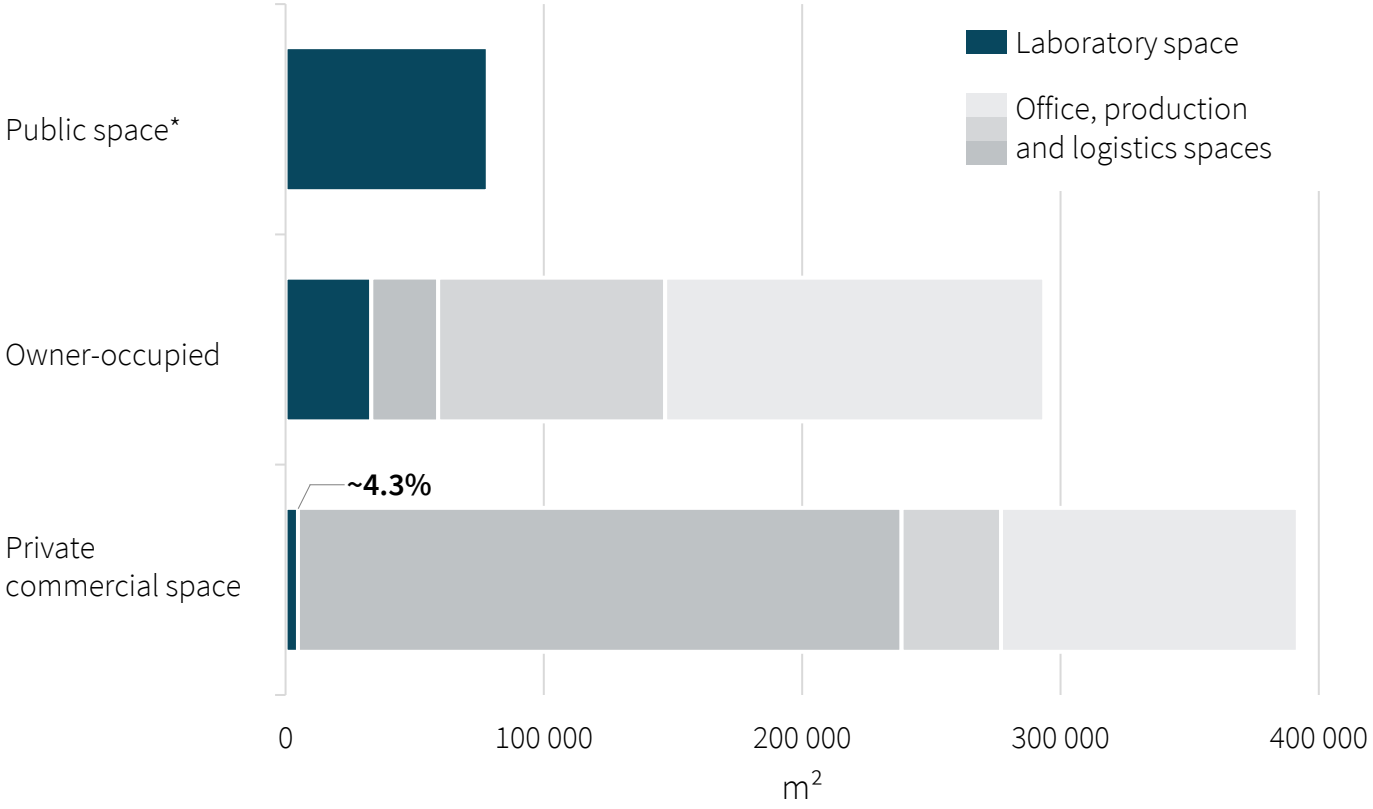
Investor-developed commercial laboratory space accounts for only 4.3% of Warsaw's total laboratory stock, with the remainder comprising public or private owner-occupied properties, which are not always purpose-built. With limited market options and a lack of market transparency regarding available spaces, laboratory equipment, and properties designed to support specific laboratory types – for example, for biology or chemistry use – biotechnology companies have increasingly adapted warehouse and office spaces, as well as older buildings, for laboratory use. For instance, KleverLab has leased space within the Warsaw Industrial Park and converted part of it into a wet laboratory. Most new life sciences companies are established in Warsaw. According to PitchBook Data, Inc., 27 new companies were created in the area between 2020 and 2024, the majority of which operate in biotechnology and medical devices (healthcare devices and healthcare technology systems). Kraków follows with 11 and Lublin with 7 newly established companies during the same period.

Warsaw's Local R&D Active Clusters

The largest concentration of R&D activity in Warsaw is situated on the Ochota campus, which accommodates institutes of the Polish Academy of Sciences (PAN), the Medical University of Warsaw, and faculties of the University of Warsaw. The Biological and Chemical Research

Figure no. 17

Space Occupied by Selected Life Sciences Companies in the Warsaw Area: Laboratory Space is Predominantly Located in Public or Owner-Occupied Properties Unavailable for Rent



Note*: Estimate based on publicly available data and usable area of university and research buildings (m^2)

Source: JLL Research Poland, December 2025

Centre (CNBCh UW) is located there, which offers office-laboratory space for lease. There are located such biotechnology companies as Molecure, WPD Pharmaceuticals, NanoGroup, Leaderna Biostructures, and Bhumi, among others. Additionally, the Warsaw area contains several emerging local R&D clusters with growth potential in the coming years. Within the city limits, notable examples include Poleczki and Łopuszańska Streets.

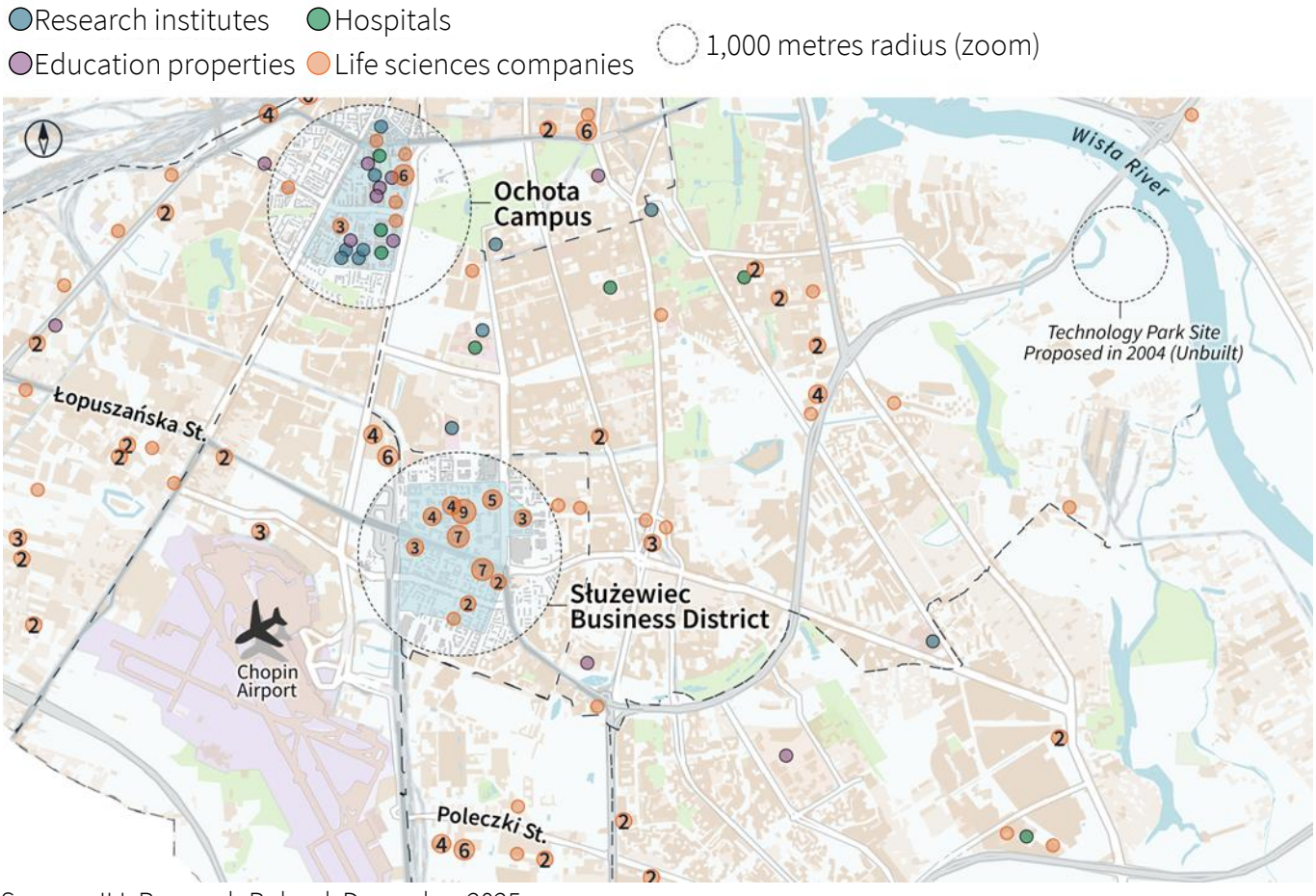
On Poleczki Street, the Centre for Advanced Materials and Technologies (CEZAMAT) is located, offering cleanrooms for lease. Within this complex are projects such as SmartHEAL (developer of a smart pH sensor device) and Heart Guard (developer of a surgical system device).

Additionally, on Łopuszańska Street, a potential R&D cluster is emerging, where the International Institute of Molecular Mechanisms and Machines (IMoL) is located, and the construction of an R&D building for the International Institute of Molecular and Cell Biology (IIMCB) is planned – approx. 14,769 m^2 of usable area. As at late 2025, the application for a building permit was under consideration.

On the other hand, the Służewiec Business District hosts a concentration of companies from the life sciences industry; however, there is no R&D activity taking place.

Figure no. 18

Within its City Limits, Warsaw's Life Sciences Ecosystem is Characterised by Distinct R&D and Business Cluster



Source: JLL Research Poland, December 2025

Flexible, Modular Design Should Be the Norm in Poland's Commercial Laboratory Market

“

When planning new commercial laboratory space *– for example, in undersupplied markets such as Warsaw –* ***location is important, but it is not enough****. Location alone does not provide long-term resilience amid evolving research directions, shifting societal priorities, and changing market needs.*

It is essential to recognise that laboratory space must be designed to support a diverse range of scientific occupiers, rather than optimised for a single, narrow tenant profile. ***Prime laboratory facilities should be flexible and modular****, allowing efficient adaptation to varied research needs and disciplines. Achieving this requires a developer mindset grounded in a precise understanding of tenant requirements – both current and those likely to emerge in the future. Where these needs are misunderstood or oversimplified, the consequences are predictable: premises operationally misaligned with market demand, as a result, commercially challenging to let.*

The practical challenge is to deliver "labs-to-let" with genuine adaptability*.*

This has direct implications for both layout and building infrastructure. Laboratory planning should be modular from the outset, enabling units to be combined, separated, or reconfigured as occupier needs evolve. Equally, core infrastructure – ventilation, power, drainage, and specialist gases – should be designed with sufficient capacity and intelligent distribution to accommodate varying research intensities and technical specifications.

In practical terms, this means enabling chemistry-led research where required, while allowing efficient conversion to biological research – and vice versa – without disproportionate downtime, cost, or disruption. Spatial modularity allows tenants to expand within the building by linking adjacent modules as their operations scale, rather than being forced to relocate when their requirements exceed an initial footprint.

Dorota Gruchała
Head of Kraków Office

JLL Poland

08 Collaboration Between Science and Business

Poland's innovation is constrained by weak science-business linkages. Engagement often starts only after scientists have completed their research and are seeking a partner for commercialisation. Businesses still have limited trust in working with universities, concerned about excessive bureaucracy and differences in working culture, whilst academic careers continue to reward publication volume over implementation.

Intellectual property ownership disputes and protracted negotiations also deter joint projects. However, cooperation is beginning to improve with emerging new initiatives: Science4Business launched in 2025 to build an Innovation Portal, and the Łukasiewicz Research Network's "Challenges" aims to deliver solutions within 15 days.

Effectively Connecting Science with Business is a Prerequisite for Innovation-led Economic Growth. In Poland, however, this remains a persistent challenge. The underlying issue is the relatively low intensity of interaction between companies and scientists. Collaboration often begins only once scientists have completed their research and are seeking a partner for commercialisation. Scientists rarely ask businesses in advance what solutions the market truly needs, and they do not consistently design their work with future applicability in mind. At the same time, many entrepreneurs still have limited trust in working with universities, concerned about excessive bureaucracy and differences in working culture.

Across Polish universities, the prevailing academic career model still rewards publication volume more than implementation outcomes or sustained collaboration with industry. As a result, scientists tend to choose topics that yield quick publication results but do not necessarily offer commercial potential. Meanwhile, projects with high innovative potential but a greater risk of failure are chosen less frequently.

The Issue of Intellectual Property Rights

A further structural barrier is the treatment of intellectual property. In joint projects between universities and businesses, disputes frequently arise over ownership of patents and underlying technology. The absence of clearly established standards and prolonged negotiations in this area discourages both sides from reaching agreement. Universities seek to safeguard their rights, while companies fear losing control of the invention or incurring high licensing costs. More efficient procedures for managing intellectual property in science-business collaborations are needed, such as standardised contract templates or support from experienced technology brokers who can help reach a compromise.

Another challenge is the limited availability of communication platforms that connect scientists and entrepreneurs. For many years, there was no nationwide database enabling companies to identify research teams with specific competencies. This is now beginning to improve. In 2025, the Science4Business initiative was launched, which includes the development of an Innovation Portal intended to facilitate contact and information exchange. The platform is designed to consolidate data on scientific services, technologies, research infrastructure, and the capabilities of research units, acting as the missing link between science and the economy. The Łukasiewicz Research Network also offers a "Challenges" mechanism: a company can submit a problem, and a consortium of institutes proposes specific solutions within 15 days, materially accelerating the establishment

of cooperation. However, time is needed to assess whether both platforms are truly capable of addressing the challenges of science-business collaboration.

A notable trend is the growth of a service-based model at the intersection of science and business. Under this approach, research units or specialised R&D companies deliver research services to other organisations. In biotechnology, examples include dedicated CROs and technology platforms. Polish companies such as Selvita and Ardigen successfully combine service provision with their own research activities. For example, Selvita delivers drug discovery contracts for global corporates, while Ardigen has developed an AI platform for biological data analysis and collaborates with numerous big pharma companies. These service platforms provide businesses with on-demand access to the latest technologies – for example, Ardigen delivers AI projects for pharmaceutical corporations, or the Kraków-based start-up intoDNA offers ultra-sensitive DNA damage detection technology used by leading pharma companies. The service model also mitigates the constraint of limited infrastructure, as biotechnology companies can outsource specialised analyses (e.g. genome sequencing or chemical compound screening) instead of investing in expensive equipment themselves.

Despite these positive examples, collaboration between science and business across the country remains insufficiently effective. There is still a lack of mutual trust and shared understanding. Scientists often have limited awareness of market requirements (for example, regulatory standards for medicinal products), while entrepreneurs may struggle to assess a project's scientific potential. System-level changes are required: promoting talent mobility (scientists undertaking internships in companies and vice versa), strengthening researchers' managerial capabilities (including commercialisation training), and introducing financial incentives for universities and research institutes that actively commercialise research outputs.

Figure no. 19

Five Essential Components for Effective Science-Business Cooperation for Innovation-Led Economic Growth in Poland

Shared Problem Definition & Market Pull	Clear Collaboration Model & a Single Accountable Owner	Standardised IP & Contracting Framework
Clear articulation of unmet clinical or business needs, agreed success criteria, and early validation of market relevance are essential	*Define who leads what (scientific lead and business lead), decision rights, milestones, timelines, and a single point of contact on both sides to avoid "many hands" delays*	*Use best-practice rules for background and foreground IP, licensing options, and template agreements where possible to shorten negotiations and reduce disputes*

Insights, Translation and Execution Capabilities
Technology transfer expertise, regulatory and quality know-how, CRO access, and commercialisation support that transform research into investable assets

Aligned Incentives, Funding and Infrastructure
Career incentives that reward implementation alongside publications, funding that bridges the "valley of death", and access to fit-for-purpose laboratory space, specialised equipment, and service platforms

Source: CRIDO, December 2025

09 Management Models for Science and Technology Parks

Technology parks and incubators can accelerate the Polish biotechnology sector, yet many parks were designed for general innovation or the IT sector, with a focus on office rental, and lack life sciences labs and support. Two management models of technology parks are most suitable for Poland: a corporate park model built with a university, the public sector and companies, or a network park model linking dispersed centres under one offer. Modern parks should provide modular labs, shared costly facilities, and a tenant mix from start-ups to scale-ups to cut fit-out time and entry barriers.

The main gap is coordination: Poland lacks a complete national catalogue of infrastructure, a national cluster, and standard templates for public-private R&D partnerships. A long-term strategy, leadership, and shared platforms would improve technology transfer.

Science and technology parks, and incubators play an important role within the biotechnology ecosystem: they provide infrastructure, facilitate networking, and enable technology transfer. Poland already has more than a dozen such parks; however, not all of them support the biotech sector effectively. Many were established for innovative companies in general, without specialisation in the life sciences, which has resulted in limited alignment with biotech needs (e.g. laboratory space, environmental control systems, and specialist lab back-up facilities). Moreover, the operating model of many parks has historically prioritised office space rental, with comparatively less emphasis on community-building and value-added services for tenants.

Research indicates that the decisive factor is an appropriate management model for a science park. Researchers from the Warsaw School of Economics (SGH) have shown that, in Polish conditions, two models are the most suitable: the corporate model and the network model.

The corporate model is based on active collaboration between a university (especially one with a technical or life sciences profile) and public and private stakeholders. A park established jointly by a university, public authorities and business operates like a shared corporation: the university contributes scientific capability, the public sector provides financing and land, and companies bring mentorship and market access. This model is particularly effective for parks located alongside strong academic centres (e.g. medical universities or institutes of the Polish Academy of Sciences).

The network model, by contrast, allows for a park with a dispersed spatial structure. Under this approach, a park does not need to be a single physical location; instead, it can connect multiple smaller centres and incubators across the country under common management and a shared offer. In practice, this could address Poland's geographical dispersion: rather than building one large biotech park from scratch in a single location, a network of existing institutions (e.g. university biology faculties, research institutes, and laboratories in different cities) could operate under a single virtual technology park brand.

Core elements of a modern science park include modularity and flexibility of space as well as tenant diversification. Modularity means designing the park's infrastructure to be readily adaptable to changing needs – for example, modular laboratories that can be combined or split depending on whether they are required by a larger corporate project or by a start-up team of two scientists. This approach allows for efficient space management, enabling the park to accommodate both early-stage teams and scaling companies without sacrificing usable area. It also reduces the cost and lead time required to prepare facilities for a new life sciences occupier – an important consideration, as tenant turnover may necessitate retrofitting; in the case of fixed layouts, this can be both expensive and time-consuming. In biotechnology, shared access to expensive infrastructure is equally critical: a well-managed park should provide common facilities and equipment available to tenants (e.g. analytical centres, vivarium, write-up areas or cleanrooms), thereby materially reducing barriers to entry for start-ups. Additionally, at the laboratory equipment level, a similar logic is supported by digitally integrated, modular bioprocess automation systems. In Poland, these involve solutions such as QB Systems

– modular devices for conducting and automating biological processes, enabling gradual expansion and integration with existing infrastructure.

Tenant diversification is another important component. A successful park should host companies at different stages of maturity and across multiple sub-sectors. A mix of start-ups, SMEs and the R&D units of larger companies creates an environment conducive to knowledge exchange. Start-ups can learn regulatory and management standards, while mature companies benefit from the creativity of smaller entities.

Diversification also prevents the park from becoming dependent on a single anchor tenant – in the past, there have been cases where some parks lost their purpose after the departure of their main tenant. Modern parks should therefore aim to ensure no single occupant dominates the footprint and that the tenant portfolio remains structurally balanced.

Professional space management also involves actively attracting new companies and supporting the growth of existing tenants. A park should not operate solely as a landlord; it should function as an accelerator and a community integrator for innovators. In many leading clusters, parks provide mentoring and training programmes, assistance in securing funding, advisory services (legal and IP-related), and facilitate contact with investors. Such a comprehensive approach is recommended by European Commission guidance – good management practices under STEP highlight the role of parks as networking and value-creating organisations, rather than solely as property operators.

In Poland, several parks are attempting to implement these principles. For example, BioNanoPark offers biological and chemical laboratories for lease and delivers service projects for companies. The Wrocław-based PORT Polish Centre for Technology Development operates as a life sciences hub, offering modern labs and a start-up incubator; it is managed by the Łukasiewicz Research Network, which supports collaboration at scale. Nonetheless, Poland still lacks a flagship initiative on the scale of global benchmarks – one that would concentrate several dozen (or more) biotech companies within a single, integrated ecosystem. Achieving that scale would make it possible to consolidate the dispersed potential of Polish academic centres into a coherent national system.

Lack of System-wide Coordination

One of the most frequently repeated criticisms of Poland's innovation ecosystem is the absence of an overarching strategy and effective systemic coordination. The biotechnology sector has been developing largely through bottom-up initiatives led by scientists and entrepreneurs; however, there is no consistent national policy that sets direction and aligns the activities of multiple institutions. Consequently, competencies and initiatives are fragmented: the Ministry of Health operates separately (e.g. the Medical Research Agency financing clinical studies), the Ministry of Education and Science (NCN grants), and other ministries, including those responsible for Development and of Funds and Regional Policy (which oversee programmes such as PARP and NCBR) all operate independently. The absence of cooperation mechanisms between ministries and institutions means that no single centre is responsible for biotechnology development, leading to policy

inconsistency. The Government Plan for the Development of the Biomedical Sector 2022–2031 explicitly highlights the need for stronger coordination and consolidation of initiatives, noting that responsibilities are currently scattered and administrative requirements overly rigid.

One practical consequence of this lack of coordination is the absence of a central catalogue of offers and resources for the sector. An entrepreneur seeking, for instance, a lab with a specific specialisation or testing capabilities often lacks access to complete information on where in Poland such facilities are available. To date, there is still no publicly accessible, up-to-date national database covering available biotechnology infrastructure, research services or expert resources. Such a tool would streamline potential partner discovery: companies could more efficiently identify scientific collaborators, and institutes could offer some of their equipment and know-how to external parties. Some elements of such a database are currently being developed under the Science4Business initiative, one of whose planned functions is to present information on R&D infrastructure and researchers' offerings. Its effectiveness, however, will depend on the completeness and consistency with which institutions across the country populate the platform.

The lack of systemic coordination also extends to the absence of formalised cooperation mechanisms. In many countries, cluster platforms or industry associations integrate sector stakeholders – in Poland, organisations such as the Central European BioForum, the Polish Biotechnology Federation, or the Klaster LifeScience Kraków attempt to play this role, but their reach remains limited. There is no truly national biotechnology cluster that convenes the majority of stakeholders and represents their collective interests. As a result, science-business interaction often depends on individual relationships rather than stable institutional structures. There is also a lack of standardised procedures for establishing public-private R&D partnerships: each consortium agreement is negotiated from scratch, which prolongs and complicates cooperation.

Although the lack of continuity in initiatives and "institutional memory" is often cited as a challenge, in practice the more acute issue is the way public policy in biotech is financed. The Government Plan for the Development of the Biomedical Sector is a case in point: although developed under the previous administration, it has not been entirely abandoned by its successors. On the contrary, the current government has activated a significant portion of KPO funding that covers almost half of the ten-year budget envisaged by the Plan. This suggests the core difficulty is not simply a lack of continuity or disregard for prior learning, but rather the irregularity and inconsistency of funding sources – which ultimately determine the real scope of implementation. The biotech sector therefore operates in cycles of acceleration and pause: at times ambitious priorities are announced; at others, they are displaced by more short-term objectives driven by the availability of funds.

A report "Biotechnologiczny skok w przyszłość czy dryf? Polska potrzebuje strategii rozwoju biotechnologii" by the Polish Economic Institute also called for the development and implementation of a long-term national biotechnology strategy. Such a strategy should

identify Poland's strengths and niche opportunities, define priorities, and ensure institutional coordination. In that context, establishing a central body to coordinate the scientific, economic and health policies connected to biotechnology would be a logical step. A positive example comes from Scandinavia: Denmark and Sweden have implemented a joint life sciences strategy, supported by the cross-border Medicon Valley cluster as a key delivery instrument.

In discussing coordination, it is also worth noting a Polish initiative: the Virtual Research Institute (WIB). This programme, launched in 2019, funds selected research teams through a competitive process, chosen for their high commercialisation potential, operating in a dispersed structure. WIB is managed by the Łukasiewicz Research Network – PORT Polish Centre for Technology Development, which acts as an integrator of various units – teams can work in laboratories across different universities across the country, but operate under a shared agenda and funding framework. Importantly, the institute presents a consolidated portfolio of technologies developed by these teams and engages with companies as the single counterpart representing the consortium. As a result, a company interested in implementation of technology does not need to negotiate separately with each university; instead, it deals with one managing entity that also ensures standardised commercialisation rules. WIB is therefore an attempt to address the problem of fragmentation and lack of formal connections by integrating distributed resources and simplifying engagement with the business environment. Although still a pilot, it is already viewed as a mechanism that could shorten the path from science to business through a more coherent and effective technology transfer model.

In conclusion, without systemic coordination, even the strongest bottom-up initiatives will not translate into macro-level success for the biotechnology sector. What is required is clear leadership (e.g. a government-appointed biotechnology commissioner), along with a cooperation platform (a consortium spanning ministries, agencies and business representatives), and integration tools (portals, databases and clusters). Today, the absence of a central coordinating body results in a lack of mechanisms to consolidate Poland's biotech offering and to facilitate collaboration at every level, from local to international.

> *“*
>
> *Poland has failed to build a strong Scientific Park infrastructure but has several success stories. Competition between numerous public institutions with non-market funding for both CAPEX and OPEX has led to suboptimal decisions and performance. Setting up a new park is perceived as poor business, resulting with no followers. Funding is key. Strategic planning at the national level should aim to utilise EU funds within a matrix of sectoral needs. Well-targeted and coordinated public funding can change organisational cultures, driving greater efficiency across existing and new infrastructure – hopefully also privately owned and/or operated.*

Konrad Hennig, PhD
Member of Board, BioForum

Case Study – JCI' Life Science Park

Life Science Park itself is a three-building complex conceived from the outset as a technology park offering modular laboratory and office space. Each building was designed with a highly flexible modular layout that can be reconfigured to accommodate in-house R&D laboratories – either biological or chemical – without extensive structural work. The modular design and base build enable tenants to tailor space to their specific needs. The complex has reinforced floor loading, a water-mist fire protection system, and air-exchange rates of up to 22 cycles per hour.

> *"The Life Science Park forms the physical backbone of Kraków's life sciences cluster. Located alongside the Jagiellonian University campus, the Selvita Research Centre (Hexagon), Ryvu Therapeutics HQ, and the Kraków Technology Park – which primarily serves IT start-ups, including digital health & AI companies – it anchors collaboration between academic, clinical, and commercial actors.*

The Flexible Lab Concept has Underpinned the Park's Development Since its Inception

The first building in the complex (Building A) was opened in 2008, while Buildings B and C, constructed together and opened in 2014, expanded the platform to include an incubator. Building B operates as an incubator for start-ups and early-stage research teams in the life sciences industry, offering ready-to-use, fully equipped laboratory-office modules. It includes lab units of about 50 m^2, modules that can be combined if additional space is needed. Each module is fitted with basic laboratory furniture, a fume cupboard, and access to essential utilities such as purified water and gases.

The building also features shared reception and conference facilities, including several meeting rooms. In contrast, Buildings A and C provide standard laboratory units of approx. 100 m^2.

Building C houses the JCI Clinical Research Centre, which provides a dedicated facility for conducting Phase I-IV clinical trials and thereby connects the park's research base directly to patient-facing development. The centre occupies approx. 550 m^2 and includes treatment rooms and diagnostic laboratories equipped with MRI scanner and a computed tomography (CT) system, among other equipment. In addition, the building contains a production area where cosmetic products are manufactured.

10 International Benchmarks for Biotechnology Development

Poland can accelerate the development of a highly innovative bioeconomy by adapting proven ecosystem models that connect science, capital, and business.

Station F illustrates how a dedicated campus with shared facilities and corporate programmes can attract both talent and investment. Cambridge demonstrates the value of close university-business integration through science parks, on-campus laboratories, and accelerators.

European clusters such as Medicon Valley and Munich's IZB achieve scale through networks and shared infrastructure, while Korea and Israel complement this with financial instruments such as IP-backed lending, credit guarantees, and public-private incubators.

Poland can draw from the experience of other countries that have successfully created favourable ecosystems for the biotech sector. It is worth examining several inspiring models.

France – Station F

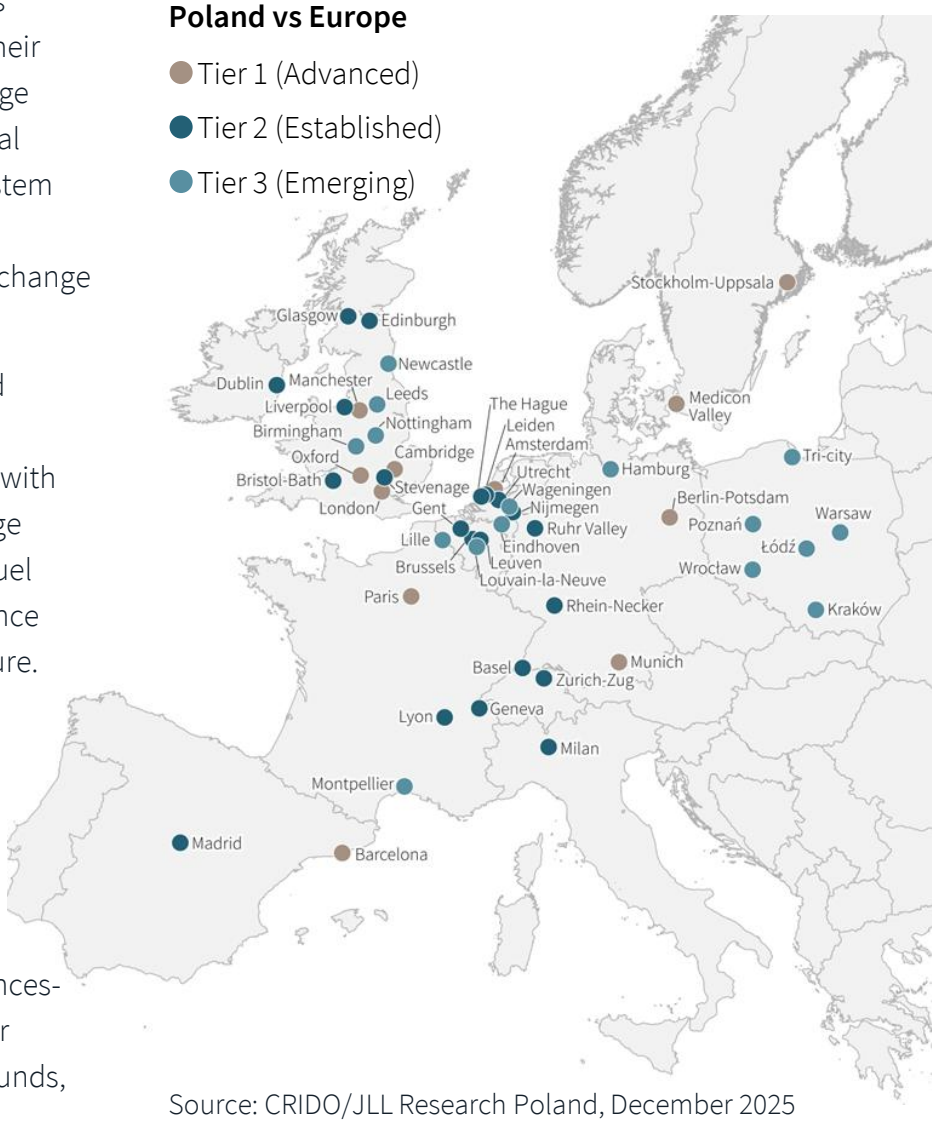
France has prioritised the creation of a strong start-up ecosystem, symbolised by Station F in Paris – the world's largest start-up campus. Opened in 2017, Station F has approx. 34,000 m^2 of usable area, consisting mostly of office space, and has the capacity to accommodate more than 1,000 start-ups. It also includes supporting facilities such as conference rooms, a 370-seat auditorium, and meeting areas. The campus also hosts branches of global corporations (including Facebook and Microsoft) with their acceleration programmes, giving early-stage companies access to mentors and potential investors. Station F operates as an "ecosystem under one roof": young companies across various sectors have the opportunity to exchange experiences and forge partnerships.

Station F has become both a symbolic and physical hub of French innovation, backed by private capital (the initiative originated with billionaire Xavier Niel) and public patronage – it was inaugurated by President Emmanuel Macron, underlining the strategic importance of start-ups to the country's economic future. The scale and ambition of the project demonstrate that investing in innovation infrastructure can deliver outsized returns: it has become an icon, attracting international talent and capital.
For Poland, an inspiring example could be the creation of a smaller-scale, life sciences-focused start-up campus bringing together entrepreneurs, scientists, venture capital funds, and pharmaceutical corporations.

Cambridge and the Coexistence of Science and Business

For years, Cambridge in the UK has been cited as a benchmark high-tech ecosystem, with its key success factor being the close coexistence of science and business. The University of Cambridge actively supports academic entrepreneurship, nurturing its spin-offs, while the city has attracted numerous global corporations that have established R&D laboratories. Cambridge is home to the UK's first science park – Cambridge Science Park (founded

Figure no. 20
Main Life Sciences R&D Clusters: Poland vs Europe



Source: CRIDO/JLL Research Poland, December 2025

in 1970 by Trinity College) – which now hosts more than 170 companies. Over time, additional parks and incubators have developed around it, and the wider area is now commonly referred to as Cambridge Cluster or "Silicon Fen".
A distinctive feature of Cambridge is the direct integration of companies into the academic environment. A prominent example is the Milner Therapeutics Institute: a consortium on university grounds that brings together research institutes and pharmaceutical companies. Companies enjoy access to university infrastructure and their own laboratory space on campus, and their scientists work day-to-day alongside academic teams on joint projects. The Milner Institute also runs the Start Codon accelerator, preparing start-ups – often university spin-offs – for Series A funding.
In short, Cambridge offers a comprehensive system of incubators and accelerators, fostering a culture that is supportive of highly innovative and therefore high-risk ventures. The approach of the UK government is also important.
The university evaluation system effectively requires institutions to demonstrate their economic impact, which motivates them to collaborate with industry.

Cambridge demonstrates how genuine synergy should work: corporate laboratories next door to university labs, joint research initiatives, and fluid talent exchange.

For Poland, the inspiration lies in developing similar innovation clusters around leading universities. Initial steps have already been taken – for example, the Centre of New Technologies (CeNT) and the Centre of Biological and Chemical Sciences (CNBCh) at the University of Warsaw's Ochota Campus, and EIT+ in Wrocław, now the Łukasiewicz Research Network – PORT Polish Centre for Technology Development – but the scale remains materially smaller than that of Cambridge. The forward-looking ambition should be to establish at least one strong biohub, modelled on Cambridge, concentrating a critical mass of science, capital, and business within a compact space.

Other Effective Models in EU

Many other countries have noteworthy initiatives supporting biotechnology. Denmark and Sweden have joined forces to create cross-border cluster Medicon Valley in the Copenhagen–Skåne region. It brings together more than 350 life sciences companies, nine universities, seven science parks and ten incubators, all focused on specific specialisations such as neurology, oncology, and diabetes.

In Germany, a noteworthy example is the Innovation and Start-up Center for Biotechnology (IZB) in Martinsried near Munich – a biotech centre located close to the Max Planck Institutes, with around 60 companies employing approximately 600 people and benefiting from shared laboratory space and a collaborative science-business environment. The centre is strongly connected to the local scientific community (including the University of Munich and nearby institutes) and is supported by the state of Bavaria. This demonstrates that regions can effectively foster biotechnology clusters through investment and by combining public and private sector efforts.

South Korea – Financing Intellectual Property

South Korea has made a substantial leap in biotechnology in recent years, driven by innovative approaches to financing and intellectual property protection. The Korean government has identified IP as a key asset for

high-tech companies and created an environment conducive to patent monetisation. A well-developed system of intellectual property-backed lending operates there, allowing companies to secure loans using patent applications or portfolios, with valuation costs largely covered by the Korean Intellectual Property Office (KIPO).

Government programmes also invest in IP-based ventures: umbrella funds involving KIPO allocate capital into smaller funds that invest in companies holding valuable patents. A third pillar is credit guarantees – state guarantee funds assess the value of technology and provide repayment guarantees to banks, enabling asset-light companies to secure debt financing. At the same time, Korea supports the patenting of strategic technologies (e.g. subsidies for international patent filings) and involves state-owned enterprises and funds in building the bio-industry.

The outcome has been a marked expansion of domestic biopharma R&D companies with global ambitions. Korean biotech start-ups have attracted record levels of venture investment, and numerous cross-border technology licensing deals amount to billions of dollars. The total value of the IP financing market in South Korea exceeded KRW 10 trillion in 2024 (approx. PLN 35 billion), indicating strong demand and institutional confidence in the model.

Poland could adapt elements of this approach – for example, establishing an IP-based credit guarantee programme for R&D-oriented companies based on the valuation of their intellectual property, or a loan fund secured by patents. This would address the structural lack of tangible security among start-ups and open a new channel of capital for innovation.

Other Effective Models

Israel, since the 1990s, has successfully applied a public-private partnership model to incubate technology companies. Technological incubators are co-funded by the government but privately managed, often by consortia of investors. In biotechnology, a prime example is FutuRx, established through collaboration between the Israeli government, global pharmaceutical companies (Johnson & Johnson, Takeda), and the OrbiMed fund. FutuRx provides start-ups with seed funding, access to infrastructure, corporate mentorship, and operational support – effectively offering an end-to-end ecosystem for early-stage projects.

For Poland, a PPP model that actively involves corporate partners could be highly relevant; for instance, a bio-incubator with the participation of global corporations could be located near a university, helping to develop companies in exchange for an option on first rights to emerging technologies.

Implications for Poland

Each of these examples offers valuable insight. Their common denominator is a consistent, long-term strategy that recognises biotechnology as a national priority and embraces partnership among multiple stakeholders – government, science, business, and investors – around shared objectives. Poland, facing a similar opportunity, should draw on these inspirations while adapting them to local conditions. Targeted investments, openness to international collaboration, and the creation of a supportive environment for innovation could enable the Polish biotech sector not only to catch up with global leaders but also to set new directions for development.

Definitions and Abbreviations

ABM – Agencja Badań Medycznych (Medical Research Agency).

Autoclave – A device that uses pressurised steam at high temperatures to sterilise items such as laboratory equipment and medical instruments.

Biosafety cabinet – An enclosed, ventilated workspace designed for safely handling potentially hazardous biological materials.

BSL – Biosafety level.

CRO – Contract research organisation.

Fume cupboard – A ventilated cabinet used in laboratories to protect scientist from inhaling hazardous fumes, vapours, or dusts by containing them and exhausting them safely outside.

GDP – Gross domestic product.

GERD – Gross domestic expenditure on R&D.

GLA – Gross leasable area.

GMP – Good manufacturing practice.

GPW – Warsaw stock exchange.

HVAC – Heating, ventilation, and air conditioning.

IP – Intellectual property.

IZB – Innovations- und Gründerzentrum Biotechnologie (Innovation and Start-up Center Biotechnology).

KPO – Krajowy Plan Odbudowy (National Recovery Plan).

Life sciences – scientific fields studying living organisms, including humans, animals, and plants, aimed at protecting, restoring, and extending life.

Mobile PCR – refers to a portable polymerase chain reaction (PCR) system that allows rapid DNA or RNA testing outside traditional laboratories.

NC – NewConnect.

NCBR – Narodowe Centrum Badań i Rozwoju (National Centre for Research and Development).

NCN – Narodowe Centrum Nauki (National Science Centre).

OTC – Medicines that can be sold directly to a consumer without a prescription from a healthcare professional.

PARP – Polska Agencja Rozwoju Przedsiębiorczości (Polish Agency for Enterprise Development).

R&D – Research and development.

SMEs – Small and medium-sized enterprises.

UKSW – Uniwersytet Kardynała Stefana Wyszyńskiego (Cardinal Stefan Wyszyński University).

VC – Venture Capital.

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