

INVEST IN ECONOMICALLY ATTRACTIVE LOCATIONS
- AT THE HUB OF EUROPE'S MARKETS

Chemical Parks in Germany

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February 2025

Chemical Parks in Germany

There are many good Reasons to Invest in a Chemical Park in Germany:

- ◆ Chemical Parks continue the success story of the chemical industry in Germany.
- ◆ The Chemical Park concept is innovative and unmatched anywhere else in the world.
- ◆ Continuous further development of digitalisation in Chemical Parks.
- ◆ Pursuit of climate goals / CO₂-neutral production at a high level.
- ◆ Investors find optimum economic conditions in Chemical Parks.
- ◆ Chemical Park operators offer investors a comprehensive range of services.
- ◆ The Chemical Park concept has individual solutions for investors for their business models.

Agenda

1. **Germany – the Investment Location**
2. **The Chemical Industry in Germany**
3. **Chemical Parks**
4. **Testimonials of Investment**
5. **Contact**



TOP 1

Germany – the Investment Location

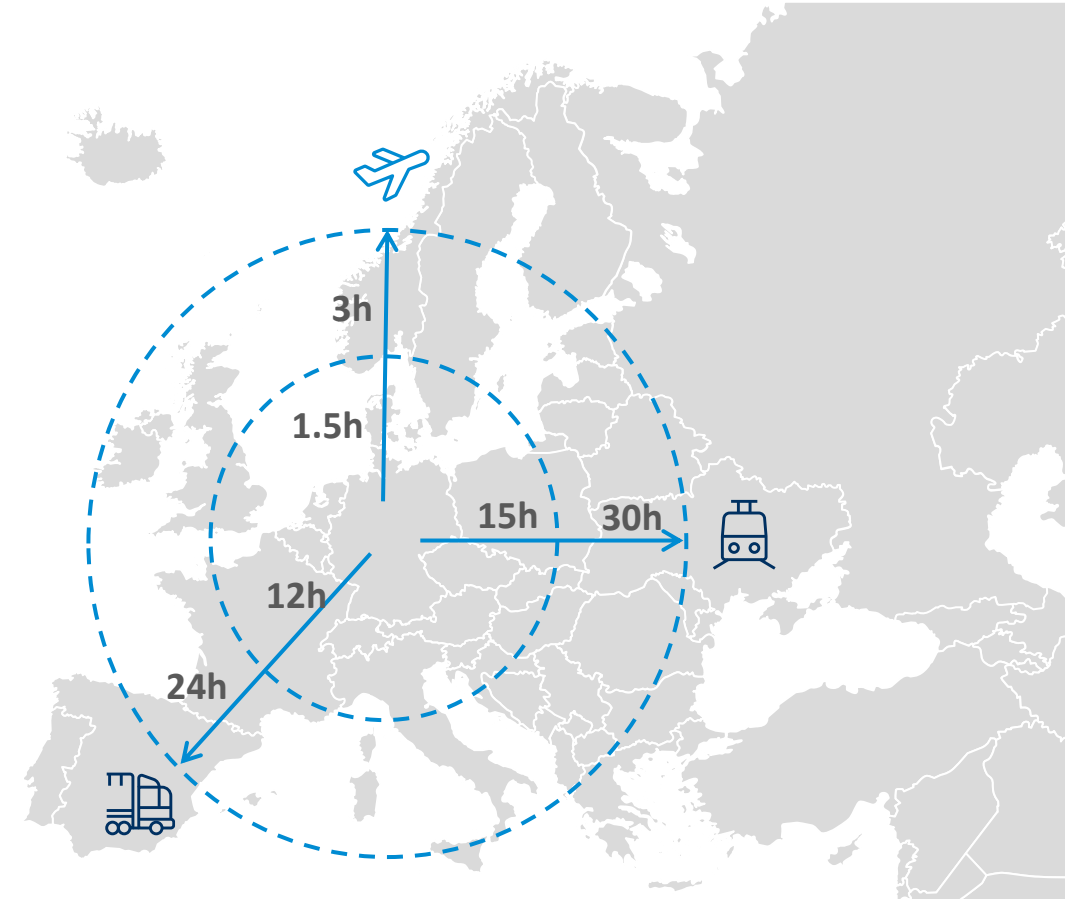
1. Germany – the Investment Location

Germany is the Geographical and Economic Center of Europe

GDP ¹ in Germany and the World

2022	GDP ² (Bil. €)	Share in global GDP (%)	Population (Mio.)
World	96.061	100	7.975
EU 27	13.756	14	448
Germany	3.275	3	83

¹ Gross Domestic Product | ² converted in € at the annual exchange rate 2022
Source: Feri



Source: GTAI; Copyright GTAI

1. Germany – the Investment Location

All Trans-European Transportation Routes Intersect in Germany

- ◆ Via the North and Baltic Sea routes to the UK, Scandinavia and the Baltic states
- ◆ Road and rail links to Denmark
- ◆ Many different links to the Benelux countries, France and Eastern Europe by road, rail and water
- ◆ Road and rail links across the Alps to the Mediterranean and the Balkan region

Germany is connected to other European markets by a dense and well-developed transportation links.



1. Germany – the Investment Location

Outstanding Infrastructure for Transport and Logistics

- ◆ The road density is higher as the EU average
- ◆ Transportation routes such as highways (13.200 km), federal roads (37.800 km), rail (39.900 km) and waterways (7.700 km)
- ◆ 20 sea ports and 250 inland ports ¹ as well as 21 major airports are connecting the markets to the world
- ◆ National pipeline network

¹ Public and private ports (factory ports)

Sources:

Statistisches Bundesamt, Verkehrsinfrastruktur in Deutschland, 2023

ZDS – Zentralverband der deutschen Seehafenbetriebe e.V.; Jahresbericht 2022/2023

Forschungs-Informations-System für Mobilität und Verkehr, Gebietsstruktur der Binnenschifffahrt und deutsche Binnenhäfen (2023)

ADV – Arbeitsgemeinschaft Deutscher Verkehrsflughäfen e.V., ADV-Mitglieder – Unsere Flughäfen – Internationale Verkehrsflughäfen (2023)

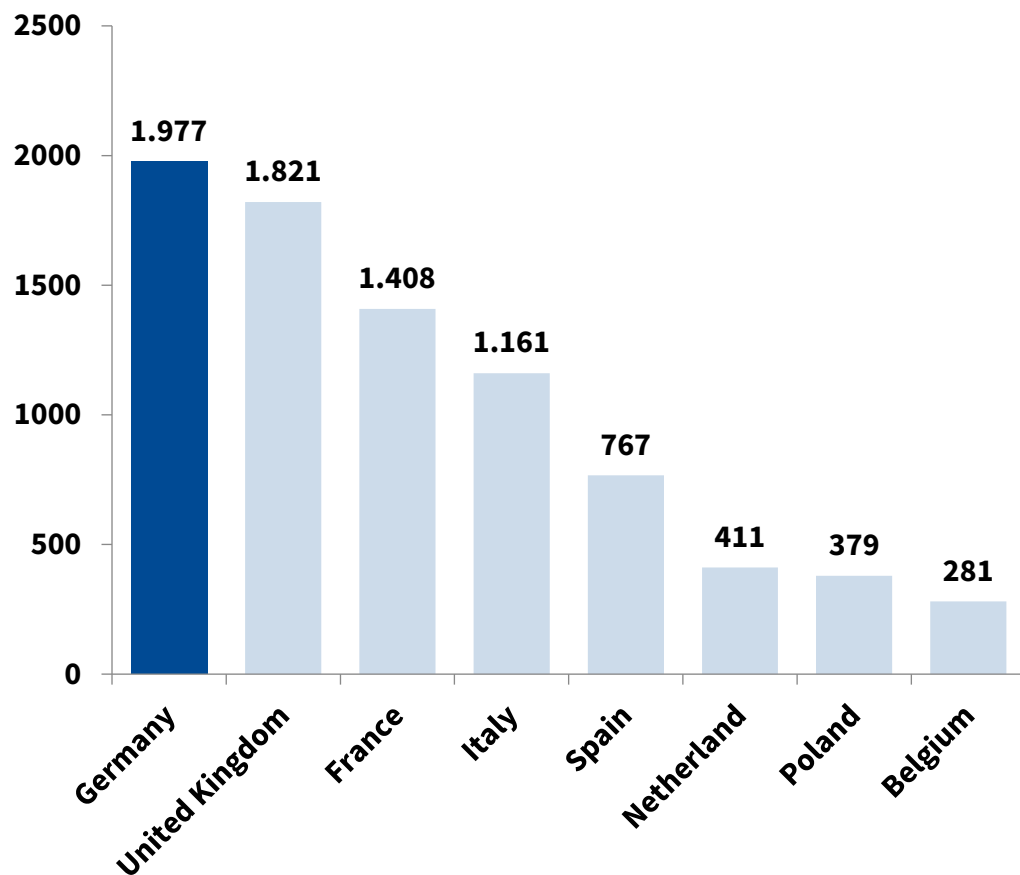


1. Germany – the Investment Location

Germany is an Attractive Domestic Market in Europe

Consumption Private

2022, in billion Euro



Source: Feri

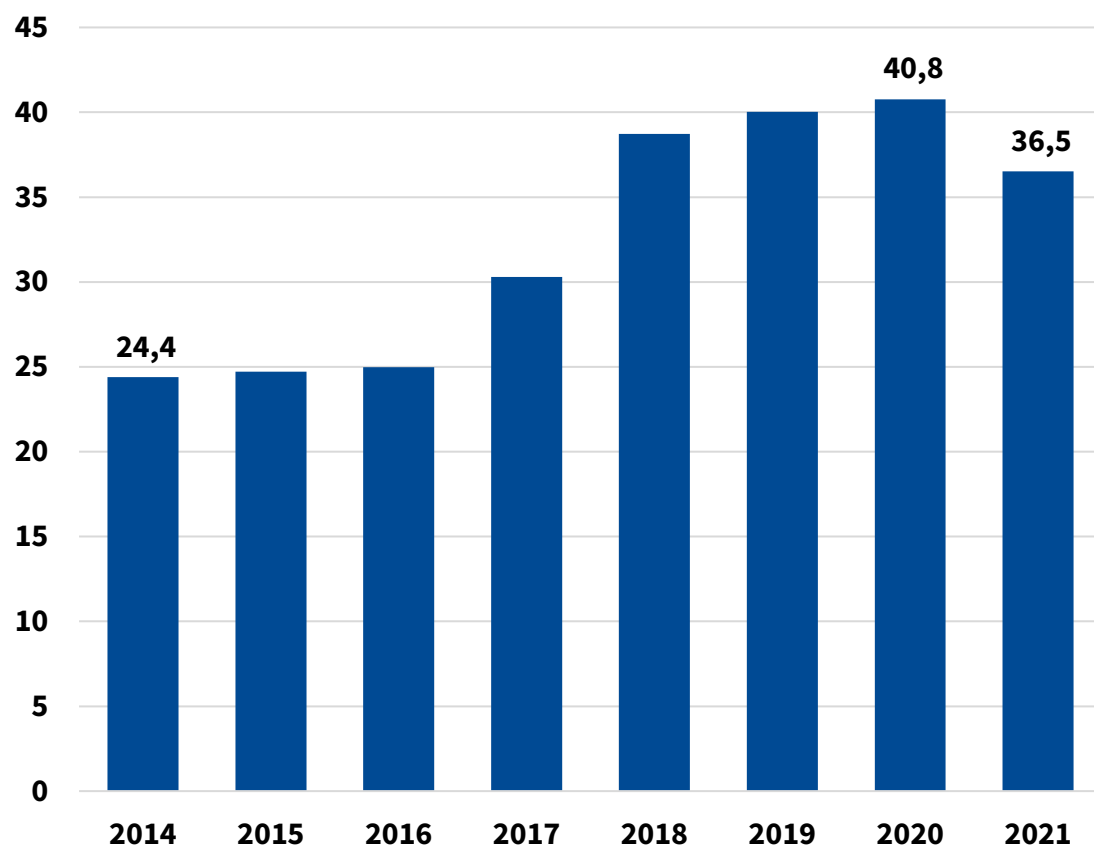
- Germany has Europe's largest gross domestic product (GDP)
- Germany is the second largest sales market in Europe
- Germany is the national economy with the highest population in Europe

1. Germany – the Investment Location

Germany is attractive for foreign investors

Foreign Direct Investment in the German Chemical and Pharmaceutical Industry

Stock of FDI, in billion Euro



Source: Statista, based on data from the Federal Statistical Office of Germany

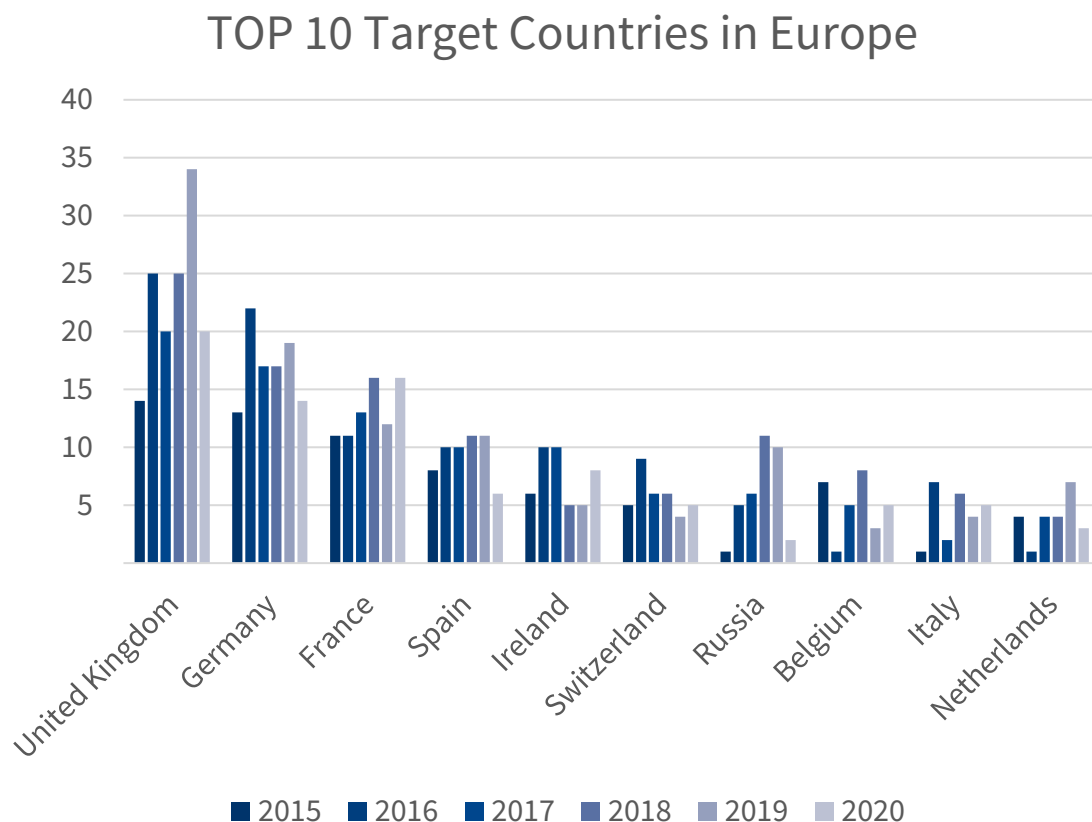
- ◆ To date, nearly 504 foreign chemical companies with over 176 billion euros in sales and roughly 109.000 staff have settled in Germany.
- ◆ Foreign companies have expanded their capacities in Germany.
- ◆ FDI stocks in Germany have clearly risen in recent years.

1. Germany – the Investment Location

Germany is attractive for foreign investors

FDI in the German Pharmaceutical Industry

FDI **PHARMA** number of projects from 2015 - 2020



- Germany is among the main target countries of foreign direct investment in the **pharmaceutical industry** in Europe.
- With a total of 102 investment projects from 2015 - 2020, Germany **ranks 2nd** in FDI Pharma Projects after the UK, followed by France, Spain and Ireland.
- The TOP 5 countries of origin of investment in the pharmaceutical industry in Germany for the past 5 years are by far the USA, followed by Switzerland, Canada, the UK and Japan.
- 55% of such FDI is in distribution and marketing, 35% in production and research.

Sources: fDi Markets, Germany Trade and Invest FDI Competence Center, 10/2021

TOP 2

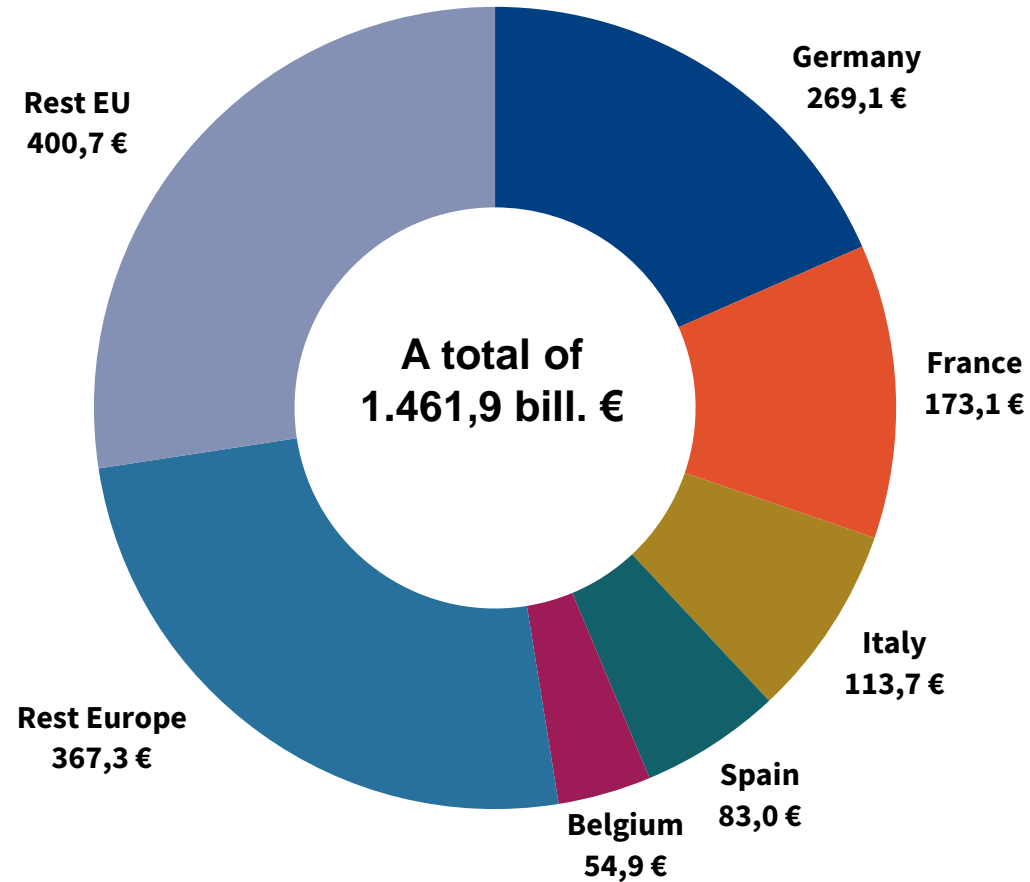
The Chemical Industry in Germany

2. The Chemical Industry in Germany

Germany: the most important sales market for chemicals in Europe

Consumption of Chemicals in Europe

2022, shares in bill. Euro



Sources: Chemdata International, VCI

2. The Chemical Industry in Germany

The German Chemical Industry maintains its Leading Role in Europe

	1995	2000	2020	2021	2022	Share in EU (2022, in %) ¹
Sales (bn €)	112,3	135,0	190,6	227,1	261,2	26,0 %
Investment (bn €)	5,8	6,8	8,5	9,5	9,4	21,0 %
Export (bn €)	51,8	76,6	200,8	240,9	286,3	22,4 %
R&D spending (bn €)	5,3	7,1	12,5	13,9	14,9	30,4 %

¹ It was resorted to data from Eurostat and OECD to improve international comparability

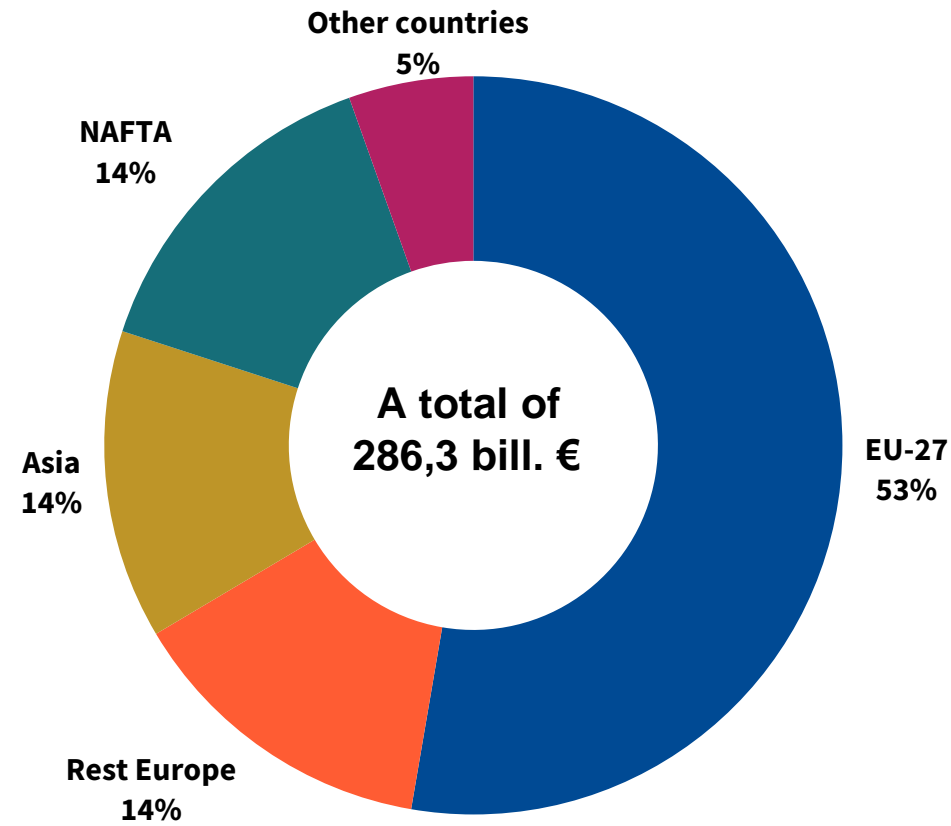
Sources: Destatis, Eurostat, Chemdata International, Stifterverband, VCI

2. The Chemical Industry in Germany

Europe is the Most Important Market for the German Chemical Industry

German Chemical and Pharma Exports

2022, shares by regions in %

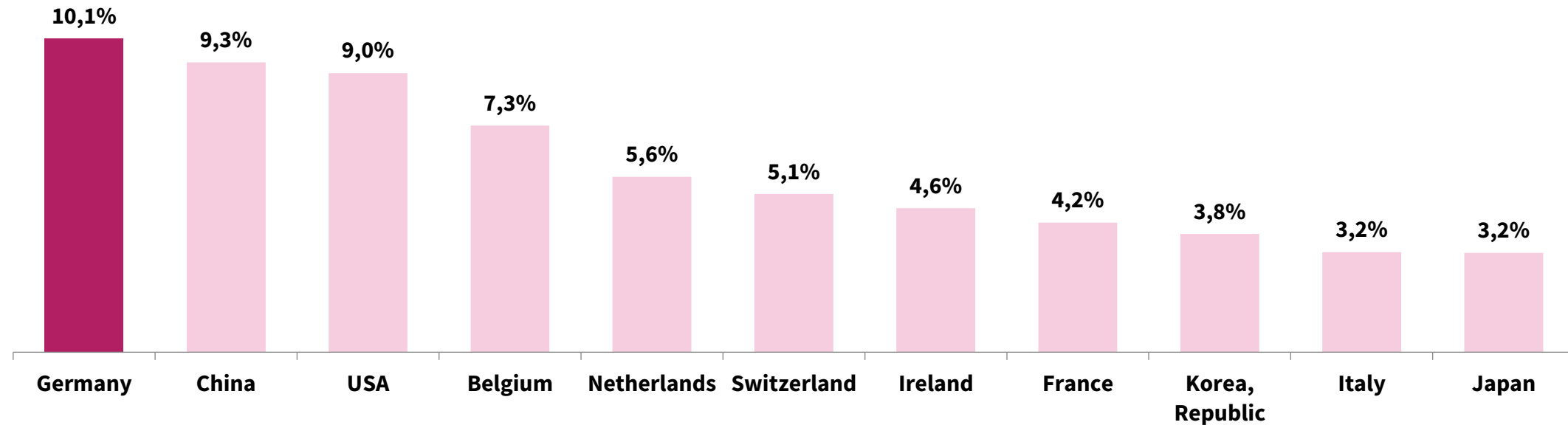


2. The Chemical Industry in Germany

The German Chemical Industry is World Champion in Exports

Chemical and Pharmaceutical Exports by Country

2022, shares in global exports in %



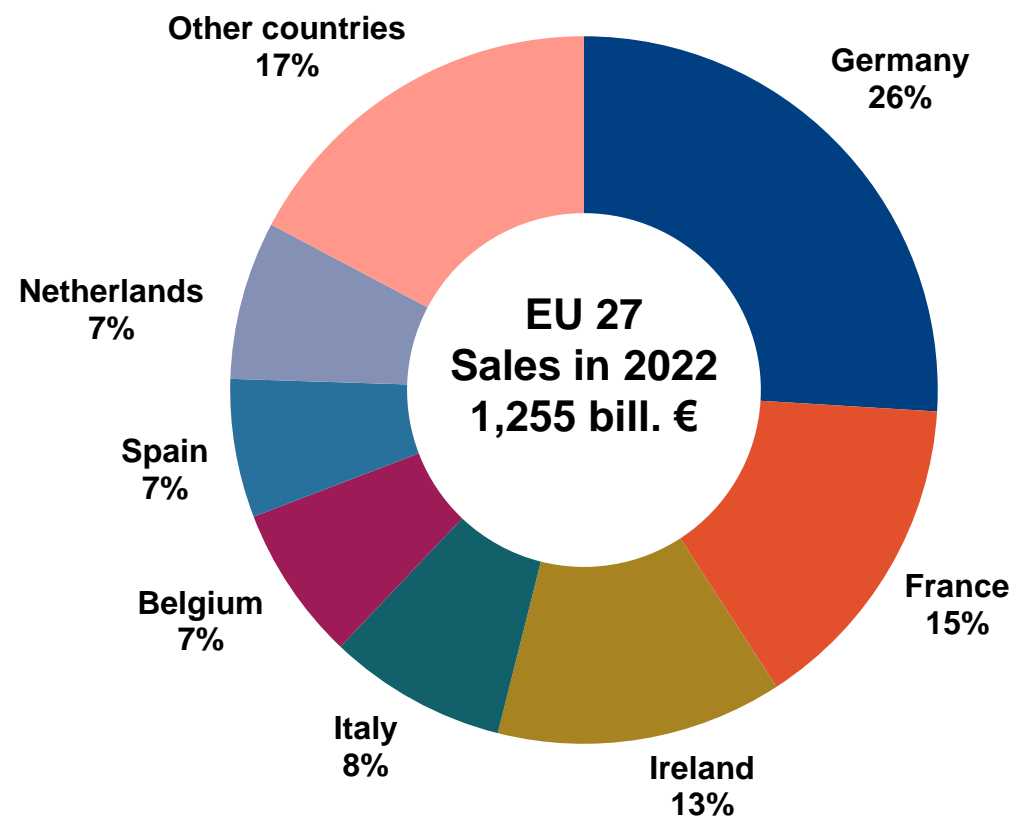
Sources: Chemdata International, VCI

2. The Chemical Industry in Germany

Germany is the Biggest Producer of Chemicals in Europe

Share of Countries in Chemical and Pharmaceutical Sales in EU 27

2022, shares in %

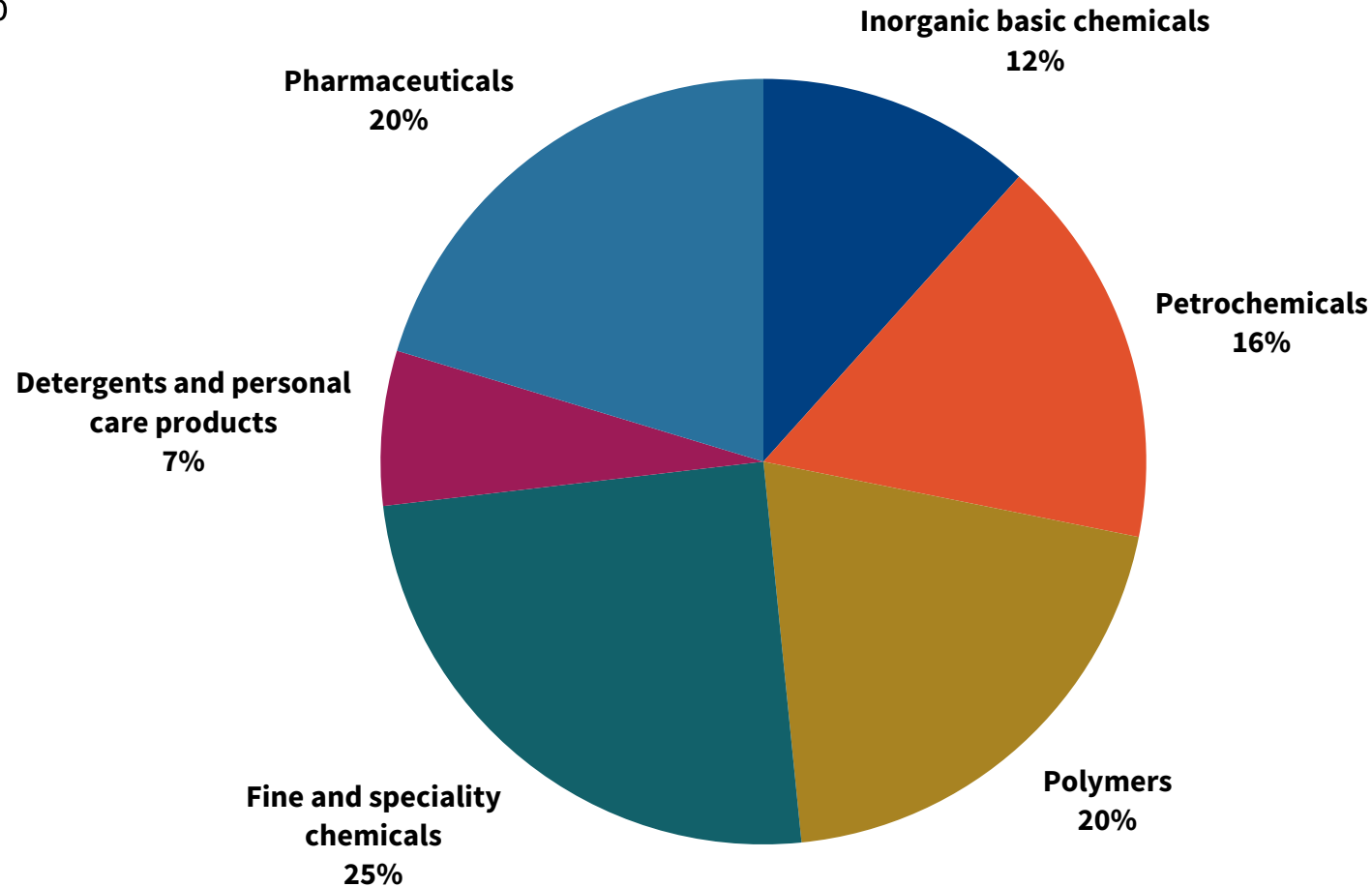


Sources: Chemdata International, VCI

2. The Chemical Industry in Germany Chemical Production with more than 50 % Innovative Products

German production by Chemical Product Groups

2022, shares in %



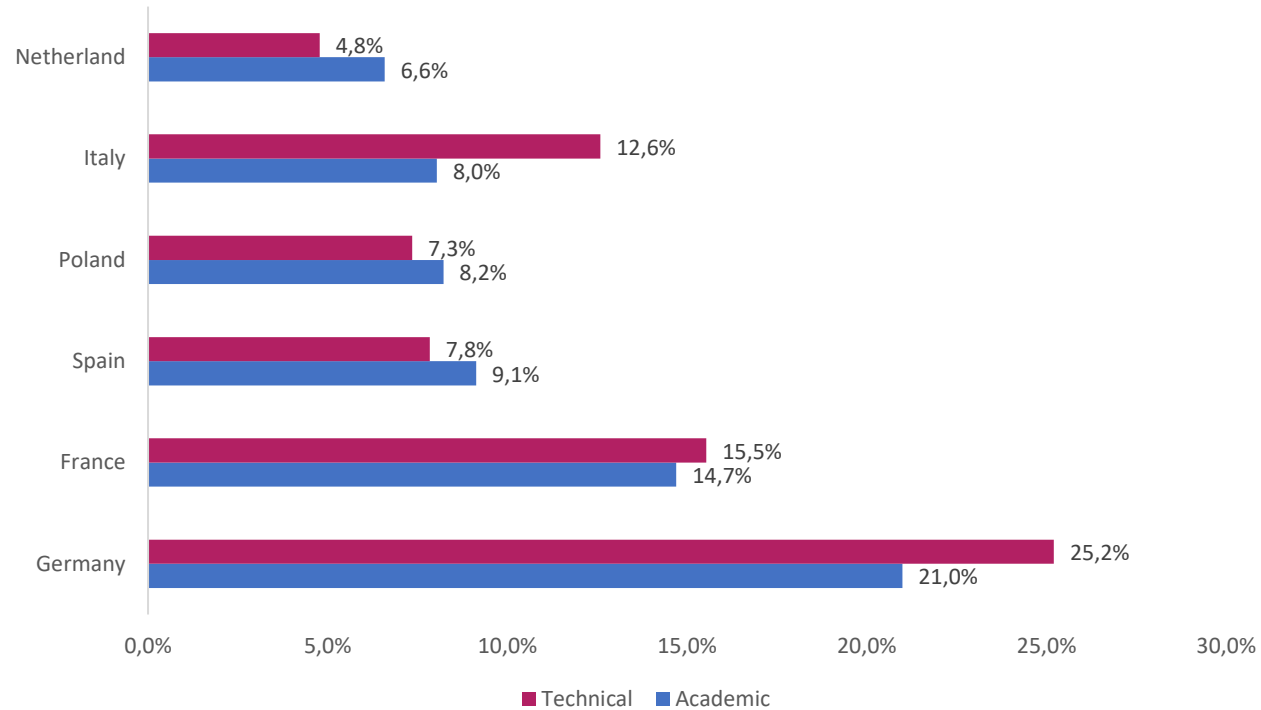
Sources: Destatis, VCI

2. The Chemical Industry in Germany

Germany has the Best Qualified Workforce in Europe

Employee Qualification

2022, percent in total in EU 27



Source: Eurostat, 2024

Share of the total number of academics and technicians in the EU 27 for the age group 25 to 65.

2. The Chemical Industry in Germany

Germany has the Best Qualified Workforce in Europe

Location advantage: Employee Qualification

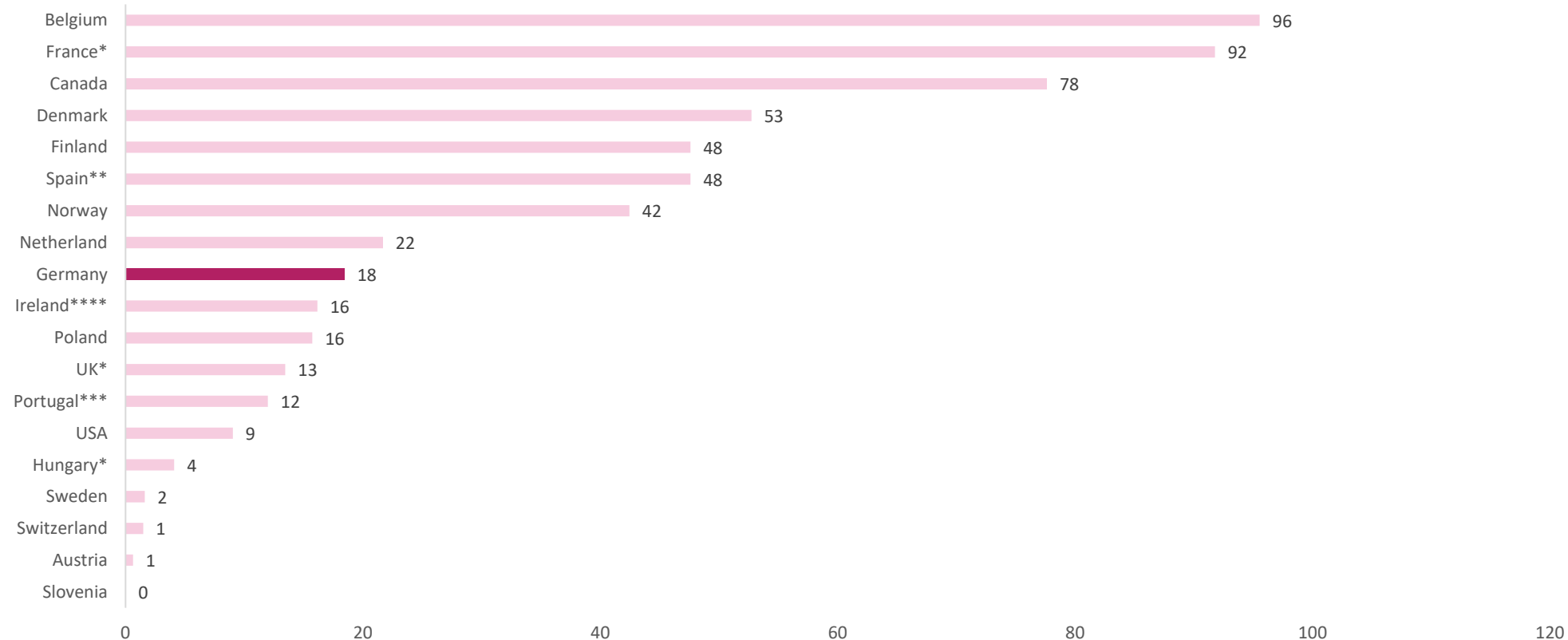
- ◆ Germany has the highest level of employee qualification in Europe.
- ◆ Good education advanced training and employee qualification are important success factors for companies operating in Germany.
- ◆ Skills in digitalisation and sustainability are taught within the dual training system.
- ◆ Stable social partnership:
 - ◆ Employees identify with their companies to a high extent
 - ◆ Agreement-oriented partnership between companies and trade unions
- ◆ High level of productivity with committed employees.

2. The Chemical Industry in Germany

Lowest Number of Strikes brings Competitive Advantage

Workdays Lost due to Strikes in Selected Countries

Workdays lost due to strikes per 1,000 employees, annual average 2012-2021, overall economy



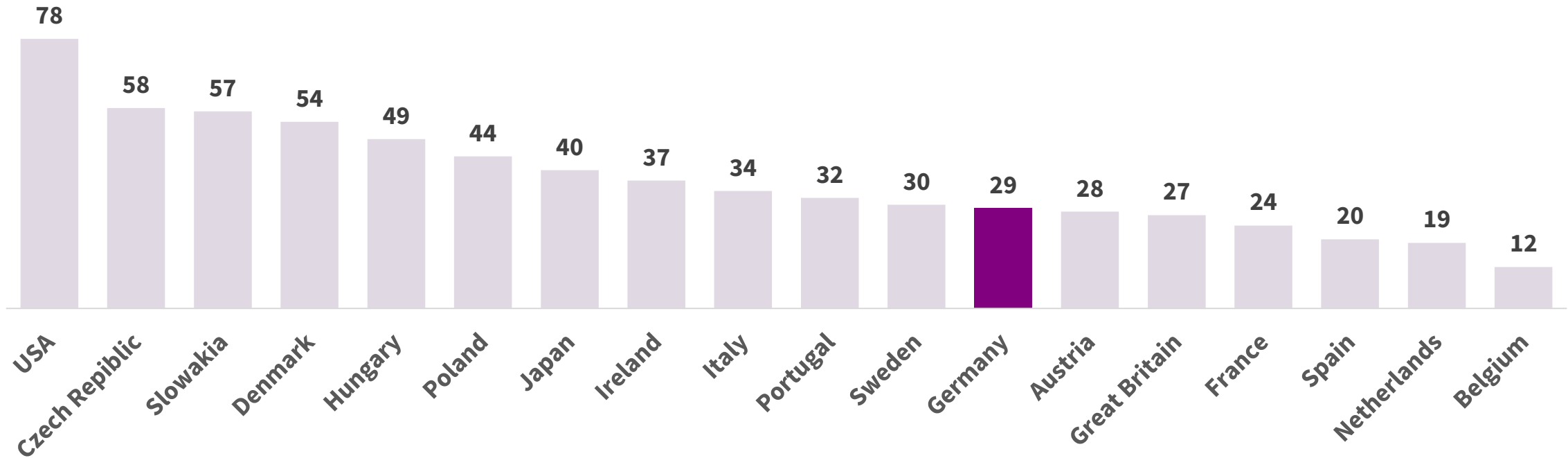
Source: WSI, Eurstat; based on national statistics and own calculations 2023

2. The Chemical Industry in Germany

Only moderate increase of Labour Costs in German Chemical Industry

Changes in Labour Costs in the Chemical and Pharmaceutical Industry

2020 to 2008, in %



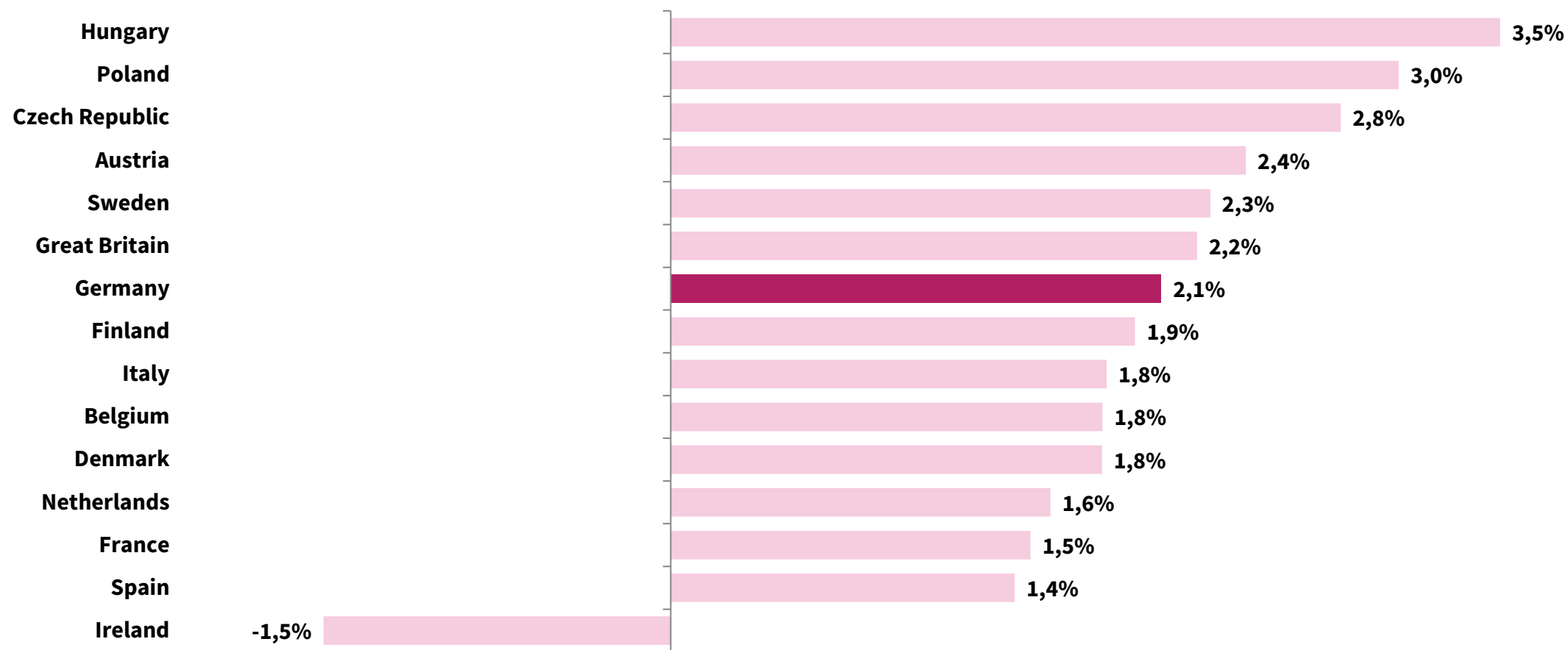
Sources: BAVC, Calculation IW Köln based on Eurostat, Federal Statistical Office of Germany

2. The Chemical Industry in Germany

Moderate Development of Unit Labour Costs in Germany

Development of Unit Labour Costs in Selected Countries of EU27 + UK

Overall economy, average change per year, 2005 to 2022, shares in %



2. The Chemical Industry in Germany

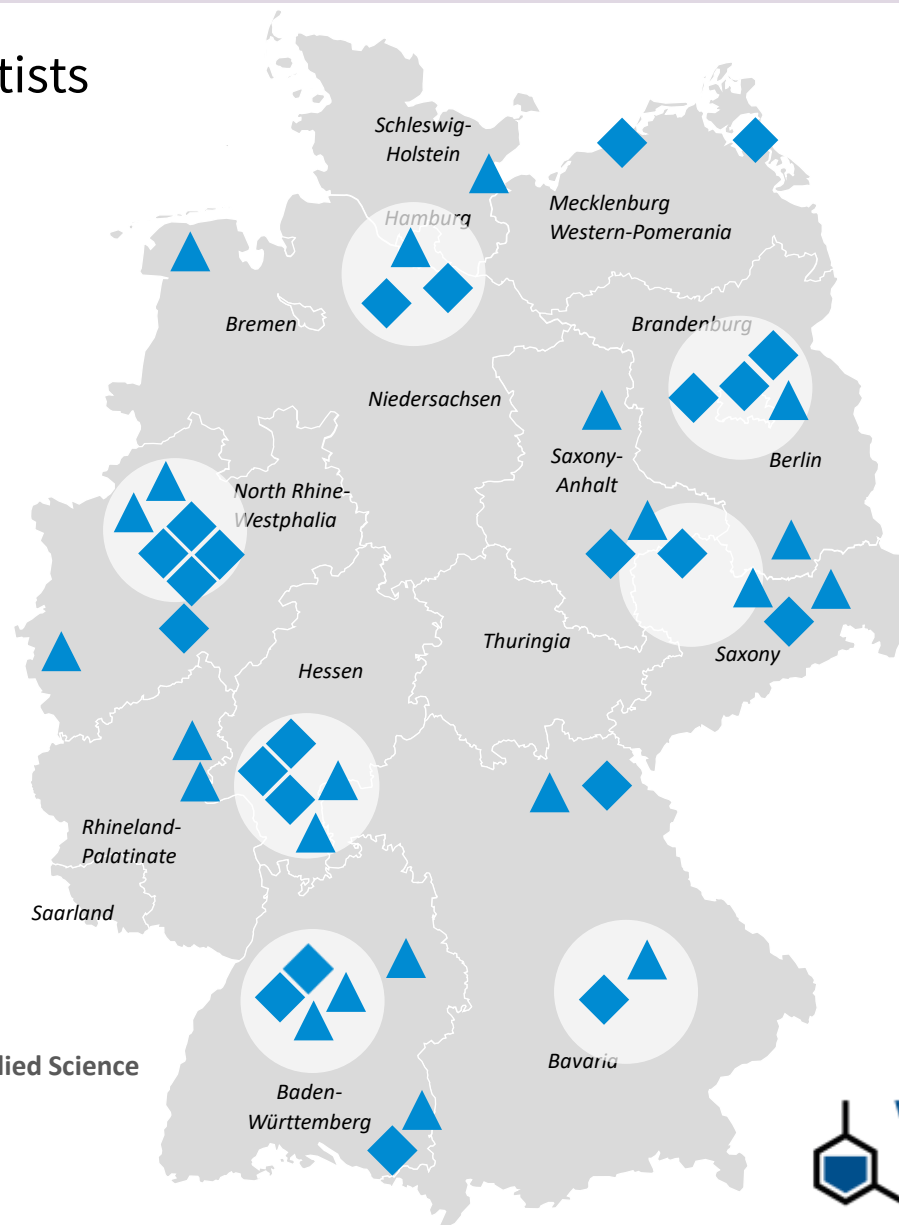
Chemical Research and Development for Chemistry close to Sites

- Over 50 universities and technical colleges train young scientists for the chemical industry
- Over 20 universities of applied sciences offer chemistry

The intense exchange between universities and companies ensures that the know-how advantage of German companies is maintained.

Source: Federal Ministry of Education and Research (BMBF): www.bundesbericht-forschung-innovation.de, 2020
Germany Trade and Invest 11/2021

◆ University
▲ University of Applied Science



2. The Chemical Industry in Germany

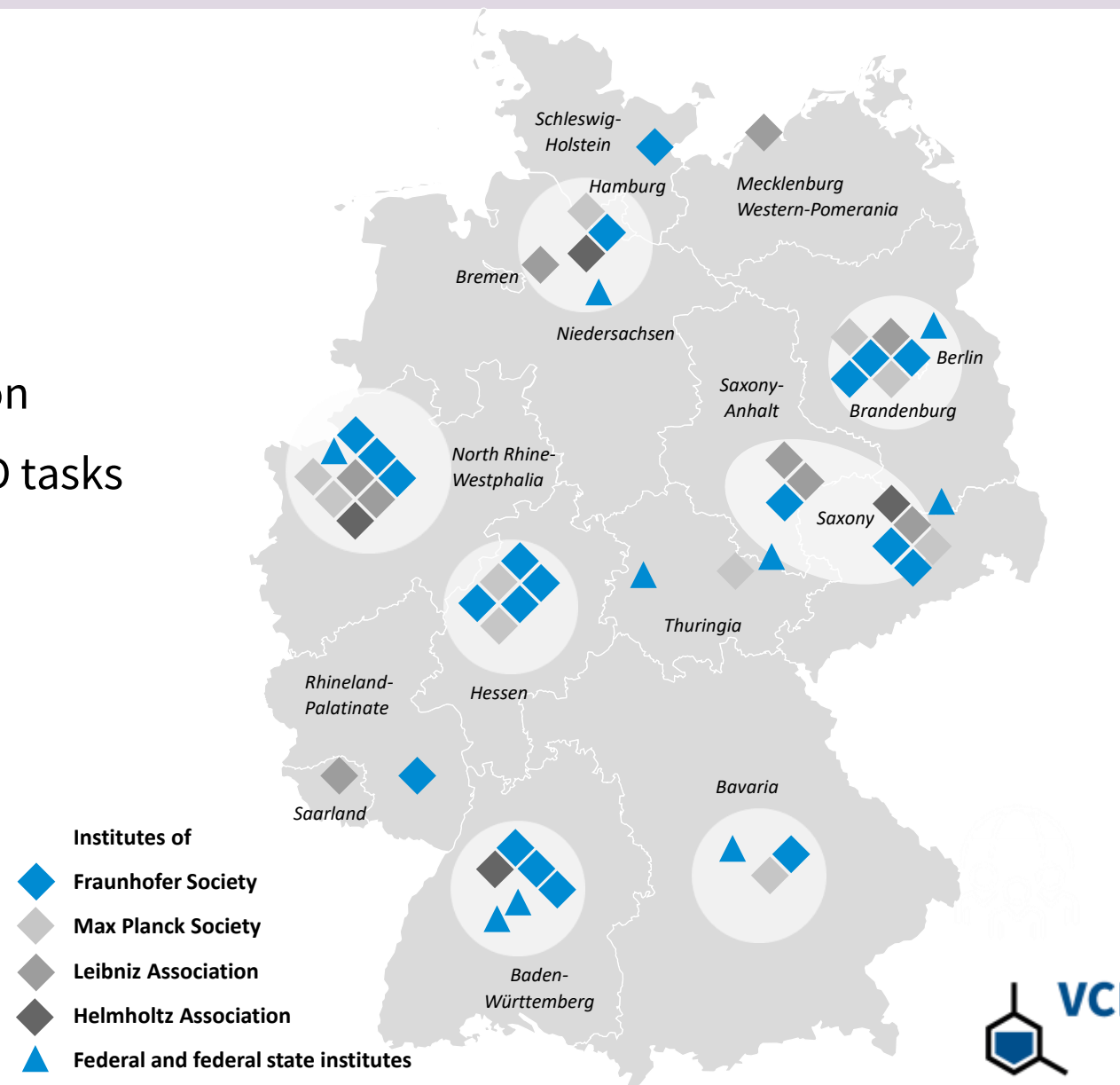
Non-University Research and Development for Chemistry close to Sites

52 Non-University R&D Facilities for Chemistry:

- 10 Max Planck Institutes
- 20 Fraunhofer Institutes
- 9 Leibniz Institutes
- 4 Research Centres of the Helmholtz Association
- 9 National and federal state institutes with R&D tasks

Germany has a network of universities, R&D facilities and companies which is unique worldwide in its breadth and depth.

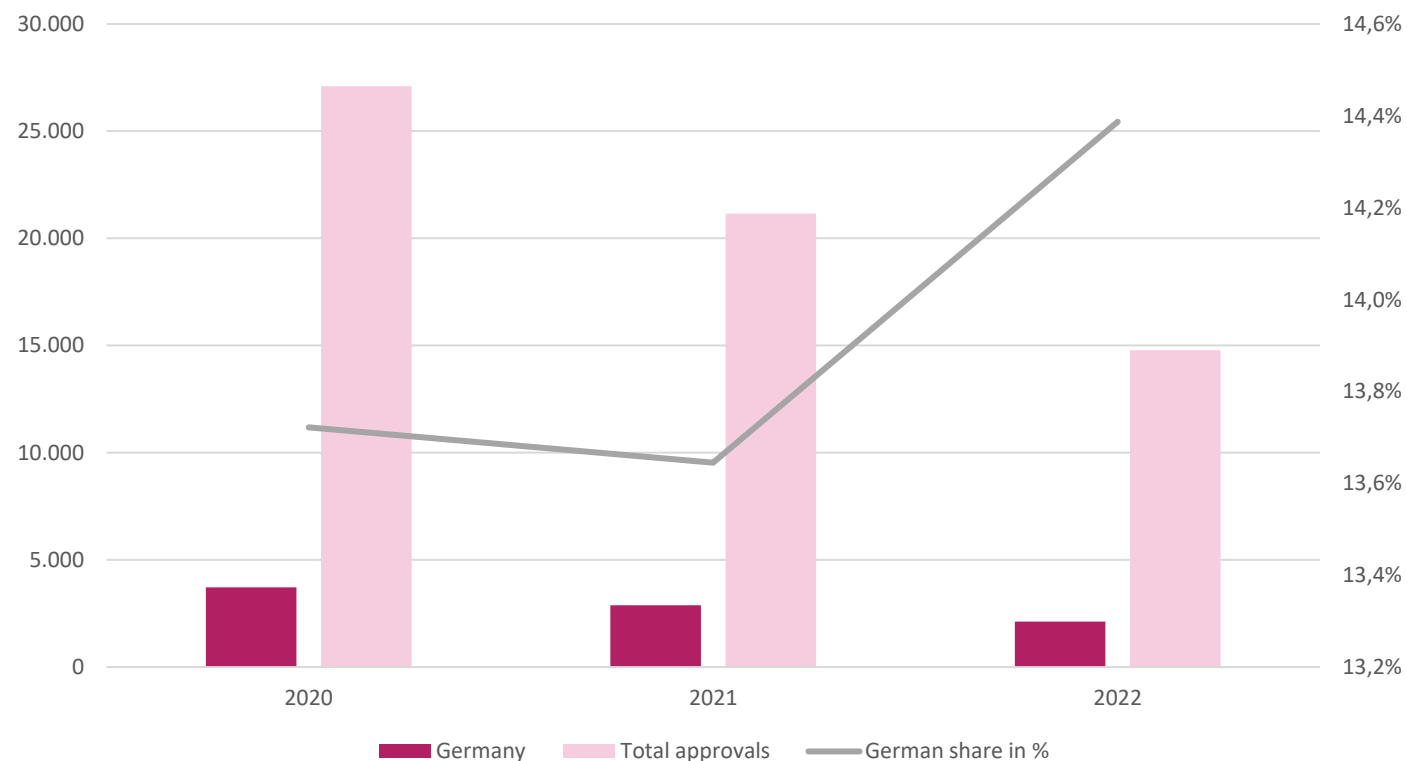
Source: Federal Ministry of Education and Research (BMBF), www.bundesbericht-forschung-innovation.de, 2020
Germany Trade and Invest 11/2021



2. The Chemical Industry in Germany

Germany is a Top Location in Terms of R&D Quality

European Patent Authorization, Chemistry and Pharma 2022, absolute figures



- Patents demonstrate the success in research and development.
- The German share of European patent applications is increasing.
- Germany is the top location for innovation in the EU.

Source: European Patent Office, 2023

TOP 3

Chemical Parks

3. Chemical Parks

German Chemical Parks: Connected to the European Pipeline Grid

- ◆ The diversified oil supply structure ensures a stable supply basis for the German Chemical Industry.
- ◆ Germany gets its oil from the Mediterranean, the North Sea and from Russia via pipelines.
- ◆ Pipelines for ethylene and propylene complement the supply structure for Chemical Parks.
- ◆ Chemical Parks are connected additionally to a network of pipelines for natural gas, naphtha, hydrogen, carbon monoxide and technical gases.

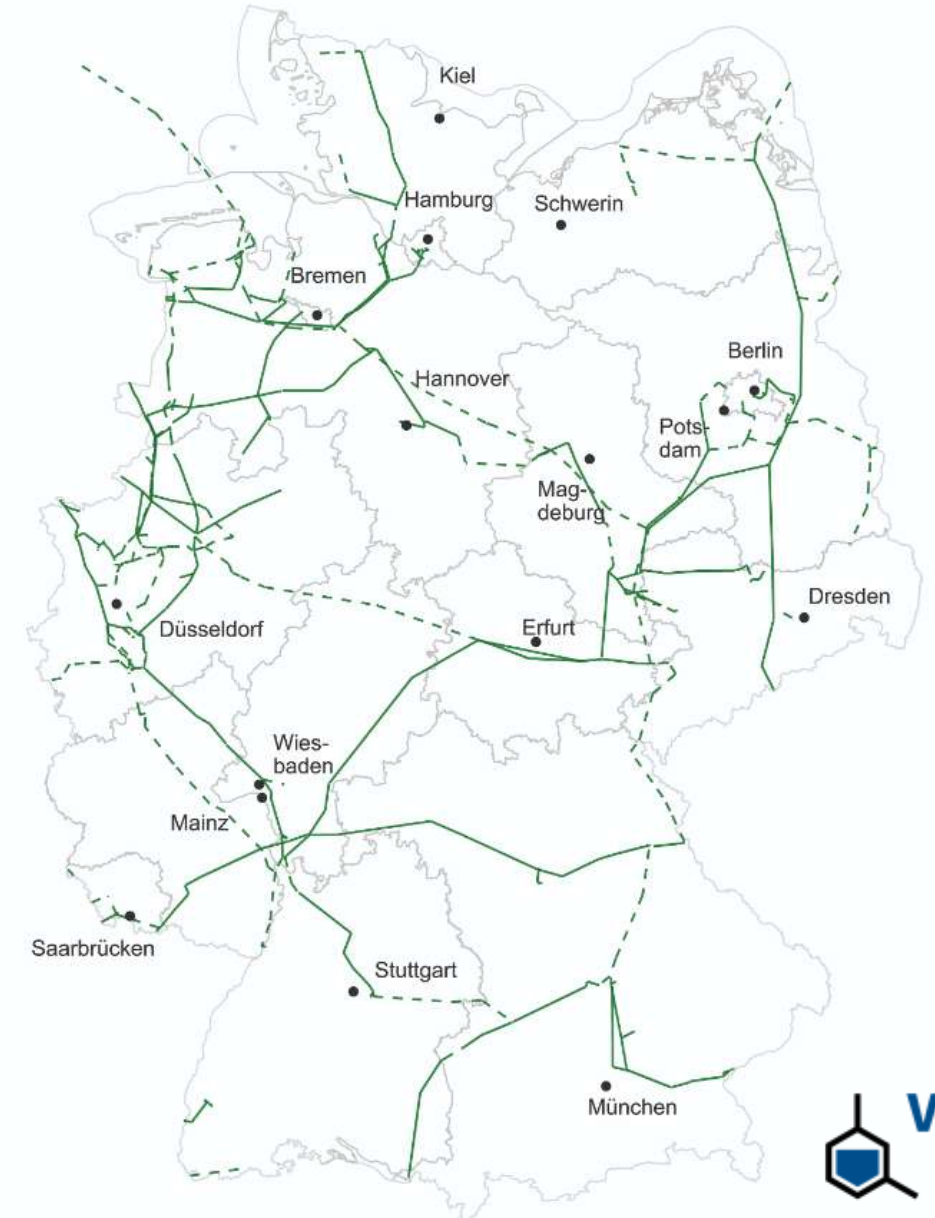
Refineries and pipelines for Germany



Source: en2x, 2023

3. Chemical Parks Planned Hydrogen Core Network 2032

- ◆ Total length of the optimised core network: 9,040 kilometres of pipeline
- ◆ Investment costs: 18.9 billion euros
- ◆ Feed-in and feed-out capacities: ca. 100 GW
- ◆ The planned nationwide Hydrogen Core Network meets these goals:
 - ◆ Fit for expansion
 - ◆ Efficient
 - ◆ Climate-friendly
 - ◆ Fast to put into practise
- ◆ The Hydrogen Core Network forms the basis for the development of the hydrogen market. Germany has the leading position in building the hydrogen infrastructure in Europe.



Source: Federal Network Agency, 2024

3. Chemical Parks

German Chemical Parks: Open for Siting of Companies

Unique Benefits for Investors:

- ◆ 41 Chemical Parks with an excellent infrastructure and over 2,000 ha of settlement area
- ◆ Many integration possibilities and, consequently, cost-reducing synergies
- ◆ “Site operators” offer professional management of Chemical Parks with typical chemistry and pharma infrastructure, qualified settlement support as well as services and expertise from a single source
- ◆ Current facts and figures on Chemical Parks: www.chemicalparks.com



Source: VCI and chemical companies 11/2021, Copyright: VCI/Typoly

3. Chemical Parks

Concept for Investors along the Entire Value Chain

Source: VCI Sector Group of Chemical Parks, 01/2024

Raw Material Producers

Basic Products (organic / inorganic)
Fine / Specialty Chemicals
Polymers

Processors / Finishers

Plastics
Pharmaceutical Pre-Products
Blended Products (e.g. coatings, surfactants)

Manufacturers of End Products

Plastics
Pharmaceuticals
Coatings / Dyes
Fibres
Detergents and Cleaning Products / Cosmetics

Process Industries close to Chemistry

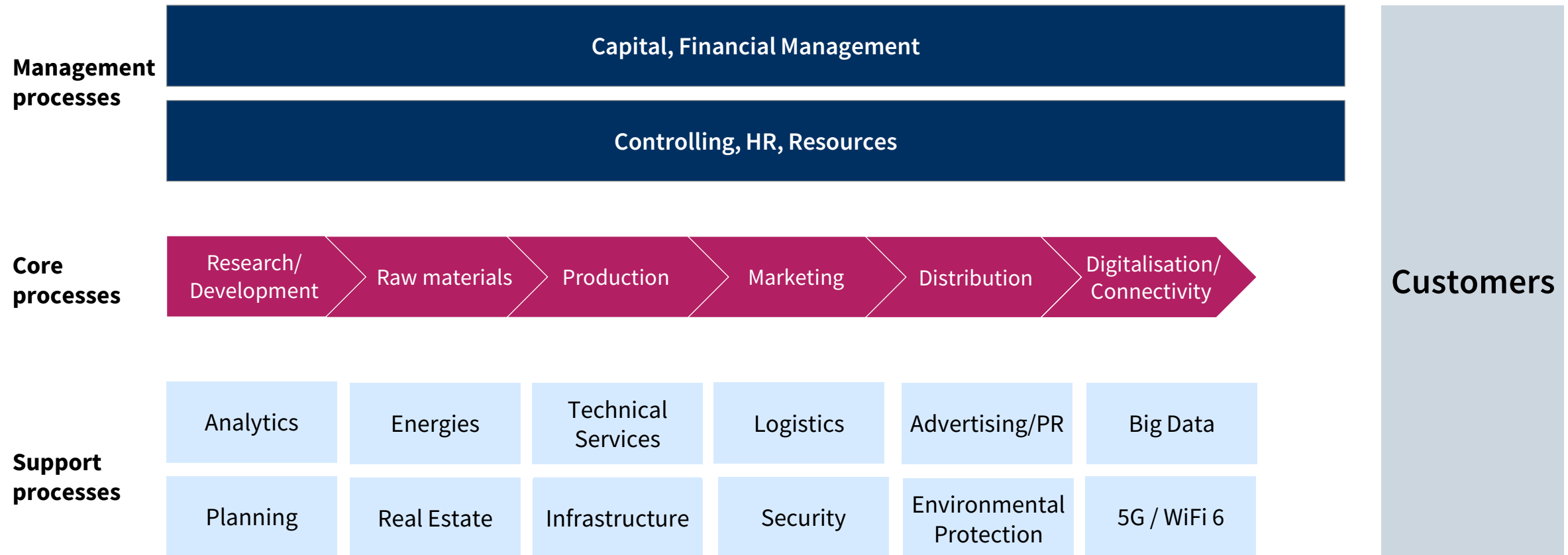
Paper Industry
Automotive Suppliers
Petroleum Processing
Aluminium Industry
Metal Processing
Glass Industry

Manufacturers based on Renewables / Biotechnology

Bio-Fuels
Bio-Intermediates
Bio-Plastics
Hydrogen
Batteries
Recycling

3. Chemical Parks Individual Solutions for Investors

In Chemical Parks Investors can Focus on their Core Business and Outsource their Support Processes:



Source: VCI Sector Group of Chemical Parks, 01/2024

3. Chemical Parks Comprehensive Service Portfolio of Site Operators

Investors choose the Best Suitable Offer for their Business Model from the Site Operators' wide Range of Services:



Source: VCI Sector Group of Chemical Parks, 01/2024

3. Chemical Parks

Advantages for companies at a glance

Settling at Chemical Parks in Germany brings many Benefits:

- ◆ Optimal framework conditions for business
- ◆ Professional settlement support
- ◆ Investment benefits through existing infrastructure
- ◆ Flexibilisation and optimisation of business models
- ◆ Focusing on core business
- ◆ Time and cost benefits through individual services on offer
- ◆ Synergy potentials resulting from optimal structures
- ◆ Benefits from integrated know-how available
- ◆ Sustainable and circular economy at high level

Source: VCI Sector Group of Chemical Parks, 01/2024

3. Chemical Parks

The Success Model “Chemical Parks in Germany”



The concept of Chemical Parks in Germany has proven its value.
We invite investors from all over the world to take part!



TOP 4

Testimonials of Investment

4. Testimonials of Investment UPM Biochemicals

“There are not many regions globally where sustainable forestry management meets the chemical industry. Central Europe and Germany specifically stand out here. The practical advantages of the Leuna site include ample space of approx. 20 hectares, which is crucial for UPM’s operations, while utilities are supplied by the site service company at competitive prices, and its proximity to customers enhances logistical efficiency.”

Dr. Michael Duetsch, Vice President Biochemicals at UPM



Location Leuna Chemical Complex

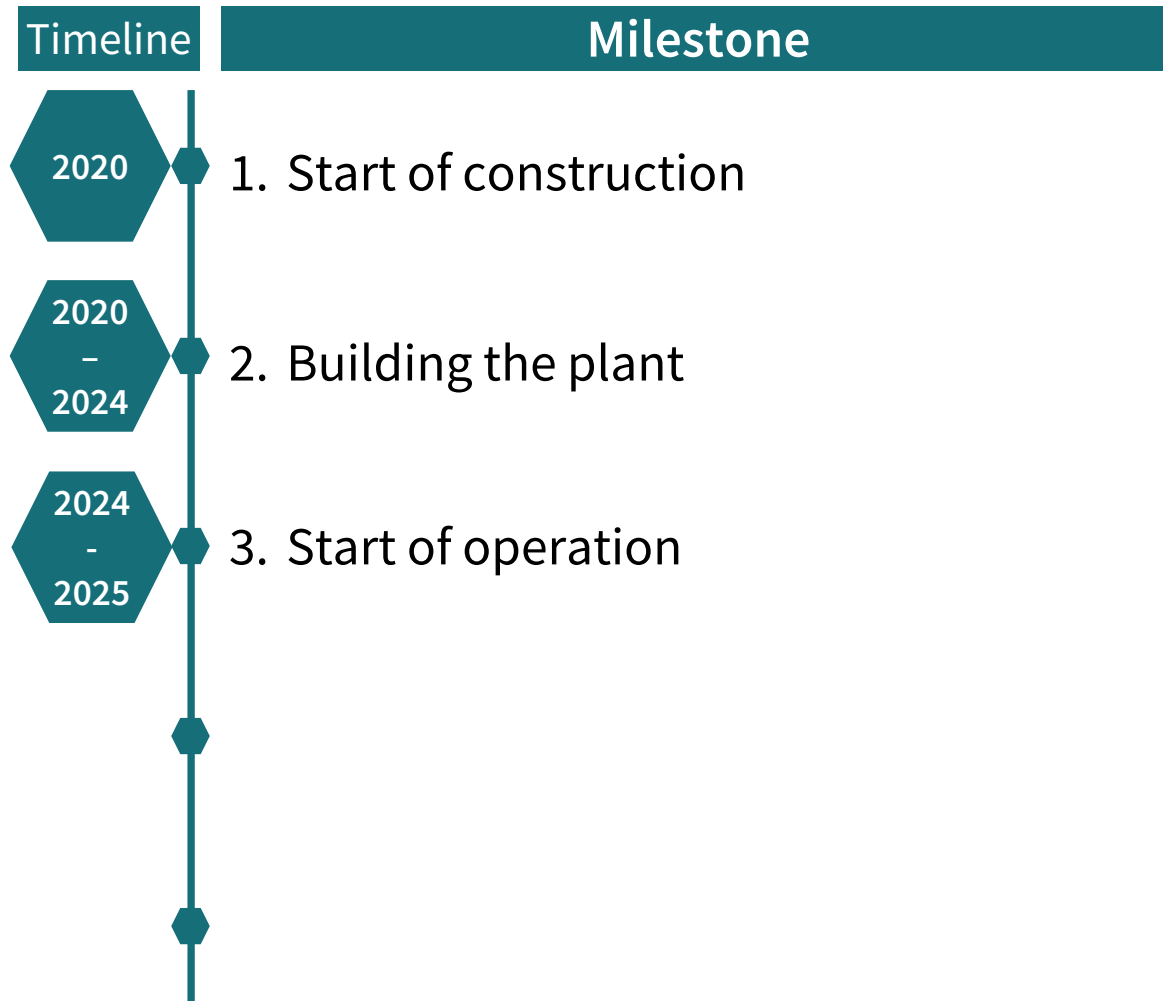


Factors for the Location Decision

- ◆ Provision of 20 hectares of settlement area
- ◆ Supply by the site service company at competitive prices
- ◆ Proximity to customers, which increases logistical efficiency
- ◆ Availability of regional, sustainably sourced biomass (hard wood)

4. Testimonials of Investment

UPM Biochemicals



Project Data
Investment: € 1,180 million
Product: Next Generation Biochemicals: Renewable Glycols, Renewable Functional Fillers, Industrial Sugars
Capacity: 220,000 tonnes / year
Number of staff: 200

4. Testimonials of Investment Heraeus Quarzglas Bitterfeld GmbH & Co. KG

„Heraeus Bitterfeld is a technology-oriented company and an award winner 2016 for family friendliness. First investments were made back in 1991. Since then, Heraeus Bitterfeld has evolved constantly. The company will continue to invest at the location and hire new staff.“

Hagen Sandner, Senior Vice President



Location Bitterfeld-Wolfen



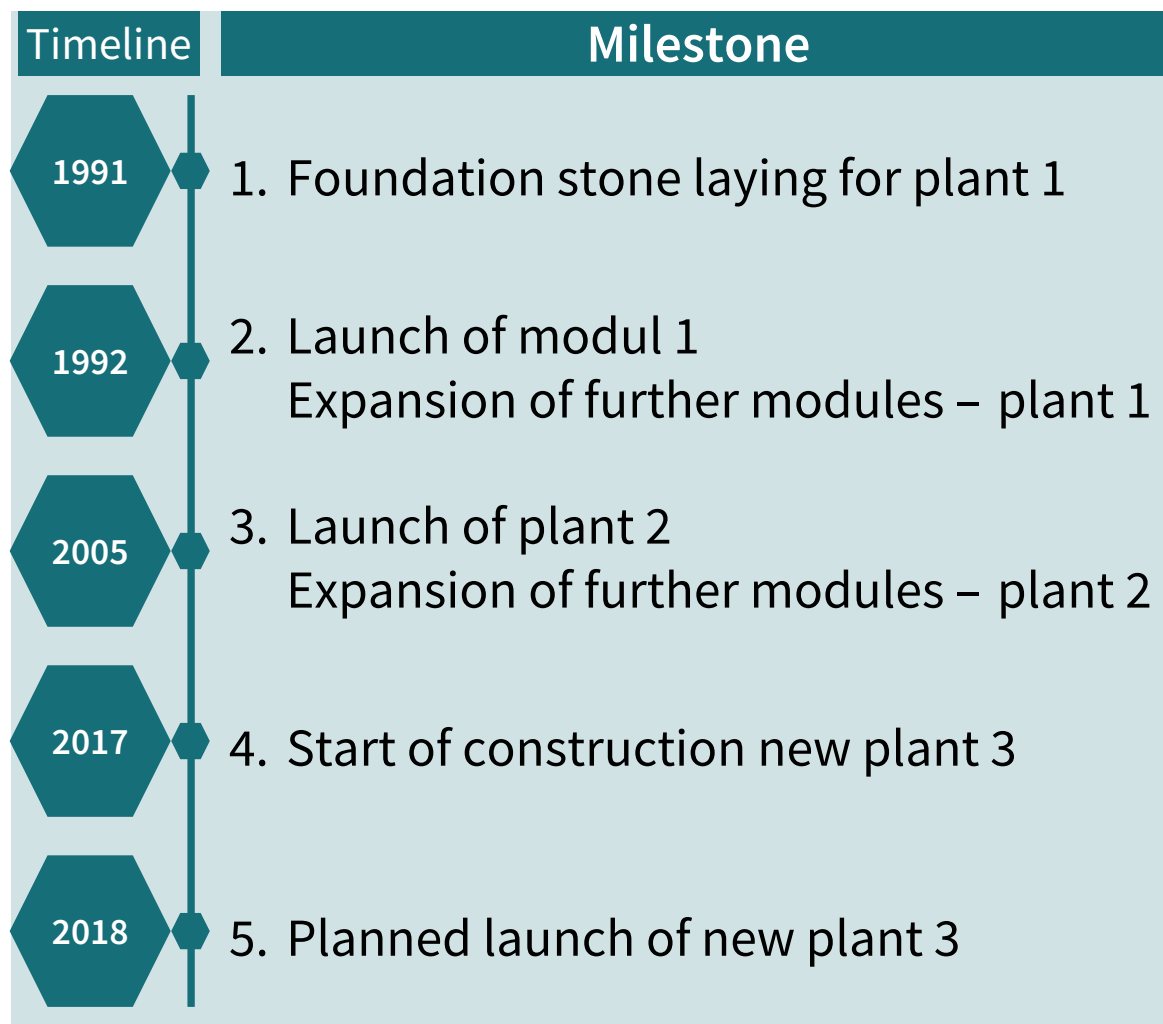
Factors for the Location Decision

- ◆ Chemical network („Verbund“)
- ◆ Existing good infrastructure
- ◆ Qualified, specialized staff

© Heraeus Holding

4. Testimonials of Investment

Heraeus Quarzglas Bitterfeld GmbH & Co. KG



Project Data

- Investment:
since 1991 > € 600 million
- Product:
hollow cylinders from quartz glass for telecommunications
- Export:
China and USA
- Number of staff:
539
- The newly built plant 3 will create 70 new jobs

4. Testimonials of Investment Proseat Schwarzheide GmbH

„Proseat found a great total package at Schwarzheide. That was decisive for our location decision.“

Stefan Hünemann, President & CEO of the Proseat Group



Location Schwarzheide



Factors for the Location Decision

- ◆ Excellent infrastructure
- ◆ Optimal conditions for international investors
- ◆ Direct supplies of the raw material Neopolen® via pipeline
- ◆ At the location: technology and competence centre of the plastics industry of BASF and Fraunhofer Gesellschaft
- ◆ Existing well-developed infrastructure
- ◆ Well qualified staff

© Proseat Schwarzheide GmbH

4. Testimonials of Investment Proseat Schwarzheide GmbH



Project Data
Investment: € 10 million
Product: moulded parts from expanded polypropylen (EPP) for the automobile industry
Number of staff: 70 (planned) currently 40
Launch of production: 2015
Planned: expansion of production

4. Testimonials of Investment Clariant Produkte (Deutschland) GmbH at the GENDORF Chemical Park

"Why does Clariant invest in the GENDORF Chemical Park? Because here we find everything that brings us ahead in competition. With the site operator InfraServ Gendorf we also have a partner who takes care of the tasks around our core business. This allows us to focus on what we do best: developing and manufacturing our more than 1,000 products. The many advantages make the GENDORF Chemical Park a central pillar in our global production network."



Dr. Stephan Trautschold, Site Manager Clariant in GENDORF



Factors for the Location Decision

- ◆ Saving resources through production and materials network
- ◆ Sufficient free and expansion areas
- ◆ Infrastructure optimally tailored to the needs of a chemical company

© InfraServ GmbH & Co. Gendorf KG

4. Testimonials of Investment AMG Lithium GmbH in Höchst

„AMG Lithium GmbH strives to become the #1 supplier for the battery market in Europe, with battery-grade lithium hydroxide and high-performance battery materials of the next generation. At the Höchst site, we are developing these materials in a state-of-the-art laboratory. Environmental protection, safety and sustainability are top priorities. This is how we want to reduce CO₂ emissions: with our products that make energy storage more capable and economically viable, and also for our own activities in product design, manufacture and transport along the entire supply chain.“

Dr. Stefan Scherer, CEO, AMG Lithium GmbH



Factors for the Location Decision

- Central location in Europe (airport, logistics, proximity to customers)
- Tailored infrastructure for the operation of laboratory and administration
- Flexible options for expanding our locations according to company growth

AMG Lithium Location at Industrial Park Höchst: Administration und Laboratory

4. Testimonials of Investment AMG Lithium GmbH in Höchst (Laboratory B596)



Project Data

- Investment laboratory:
~ 5 million €
- Products:
Lithium hydroxide BG, sulfide materials for batteries
- Focus on the developing battery market in Europe
- Number of staff:
30 (2021)

4. Testimonials of Investment

ARCUS Greencycling Technologies GmbH in Höchst

“A professional environment with good operation experience and an orientation to start-ups – such as Industriepark Höchst – is a decisive component in scaling up our technology.”

Markus Klatte and Daniel Odenthal – Founders of ARCUS Greencycling Technologies GmbH



Factors for the Location Decision

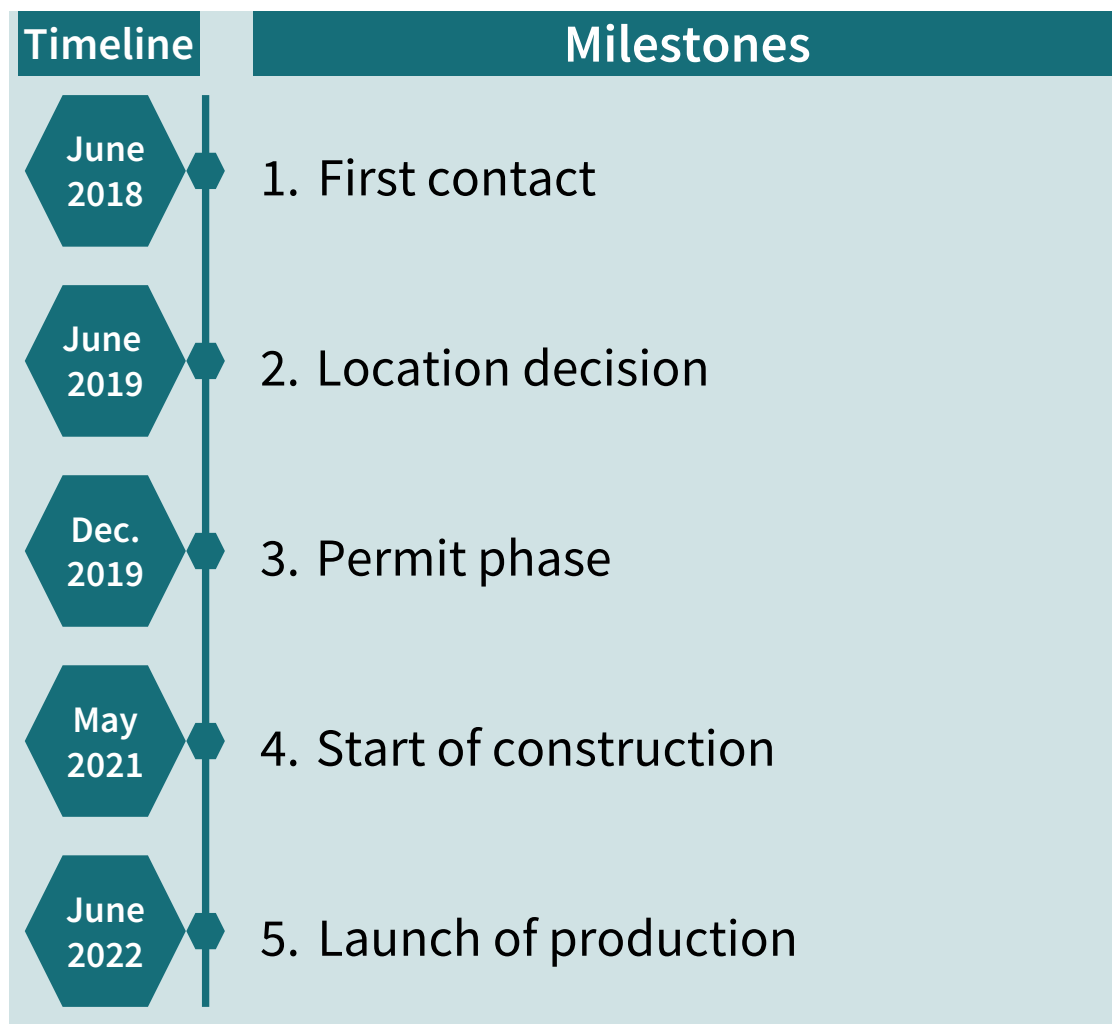
- (Petro-)Chemical infrastructure and individual services at the site
- Consistent support in project planning and implementation
- Open mind for technology innovations



Location at Industrial Park Höchst (in construction)

4. Testimonials of Investment

ARCUS Greencycling Technologies GmbH in Höchst



Project Data
Investment: ca. 4.5 million €
Product: Pyrolysis oil for the petrochemical industry from mixed plastic wastes
Capacity: 4,000 tonnes p.a.
Number of staff: 19 – 15
Launch of production: Mid-2022

4. Testimonials of Investment Tradebe GmbH

„We are proud to strengthen the circular economy as a partner of BASF in Schwarzheide!“

Dr. Volker Sernau, Plant Manager Tradebe GmbH



Factors of the location decision

- Circular economy potential
- Direct integration at the most important customer
- Excellent infrastructure
- Well-developed disposal infrastructure
- Outstanding logistics links by road and rail
- Well-qualified expert staff

© Tradebe GmbH

4. Testimonials of Investment Tradebe GmbH

Timeline	Milestones
2016	1. First contact
2017	2. Feasibility evaluation on the recycling of materials from production residues
2018	3. Start of large-scale plant trials
2019	4. Takeover and start of conversion of a former BASF plant
2020	5. Construction and launch of a distillation plant/ramp-up
2021	6. Continuous production

Project Data
Investment: 6 million €
Products: Toluene (99.9%), monochlorobenzene (99.5%)
Number of staff: 20
Launch of production: 2020
Plans to expand the product portfolio

TOP 5

Contact

5. Contact

VCI Sector Group of Chemical Parks



Thilo Höchst

Managing Director

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