



Chemical Parks in Germany

Invest in Economically Attractive Locations – at the Hub of Europe's Markets

VERBAND DER
CHEMISCHEN INDUSTRIE e.V.
WIR GESTALTEN ZUKUNFT.



VCI

Chemical Parks in Germany

There are many good reasons to invest in a Chemical Park in Germany:

- Chemical Parks provide the platform for the success of Germany's chemical industry.
- The Chemical Park concept is innovative and unmatched anywhere else in the world.
- Investors find optimum economic conditions in Chemical Parks.
- Chemical Park operators offer investors a comprehensive range of services.
- The Chemical Park concept offers investors individual solutions for their business models.



Agenda

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



Germany – the Investment Location

1. Germany – the Investment Location

Germany is the Geographical and Economic Center of Europe



GDP¹ in Germany and the World

2016	GDP ² (Bil. €)	Share in global GDP (%)	Population (Mio.)
World	68.396 ³	100%	7.467
EU 28	14.817	22%	508
Germany	3.134	5%	82

¹ Gross Domestic Product

² converted in € at the annual exchange rate 2014 of Deutsche Bundesbank

³ estimate

Source: Feri

Sources: Germany Trade Invest, 04/2009

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 (12.900 km), federal roads (38.900 km) rail- (37.775 km) and waterways (7.700 km)
- 24 offshore sea ports* and 250 inland ports** as well as 25 major airports*** are connecting the markets to the world
- National pipeline network

* Out of this, 17 with over 1 mio. tonnes of freight handling

** Out of this, 50 with over 1 mio. tonnes of freight handling

*** > 150.000 passengers /year

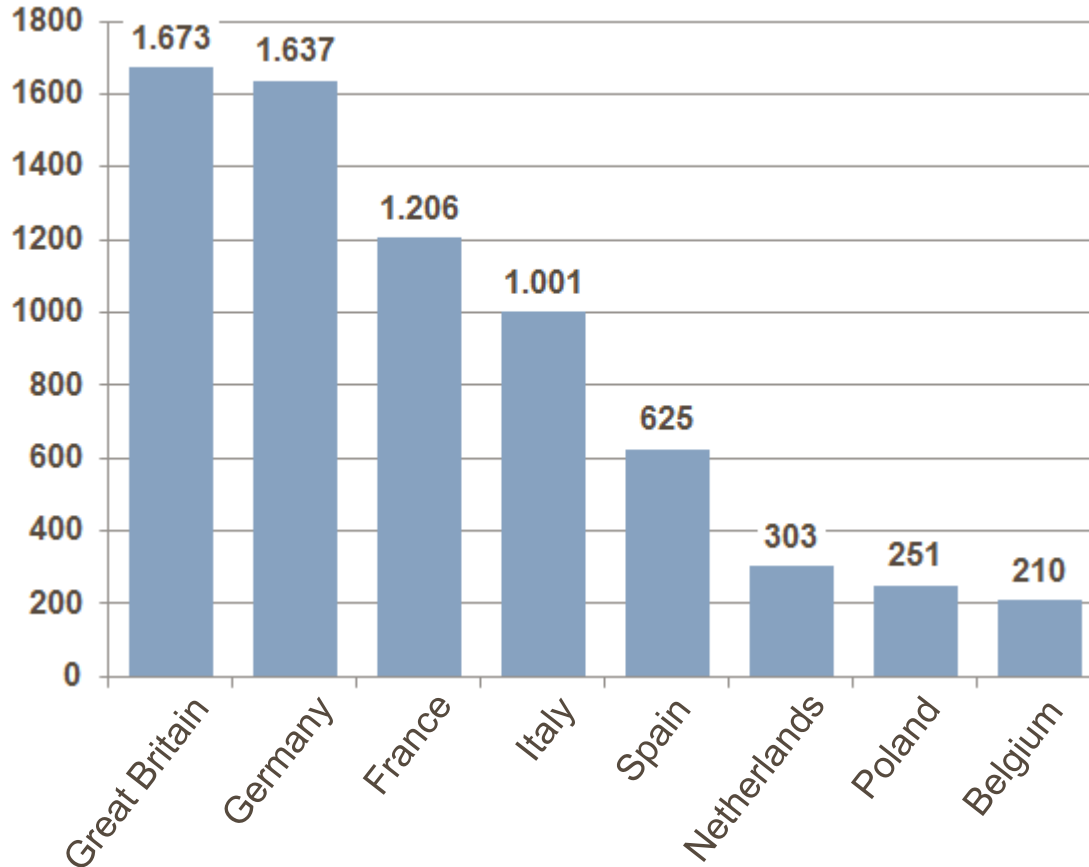
Sources: Destatis; ZDS – Zentralverband der deutschen Seehafenbetriebe e.V.; BÖB - Bundesverband Öffentlicher Binnenhäfen e. V.; Germany Trade & Invest – 04/2009

1. Germany – the Investment Location

Germany is an Attractive Domestic Market in Europe

Consumption Privat

2016, in billion Euro



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

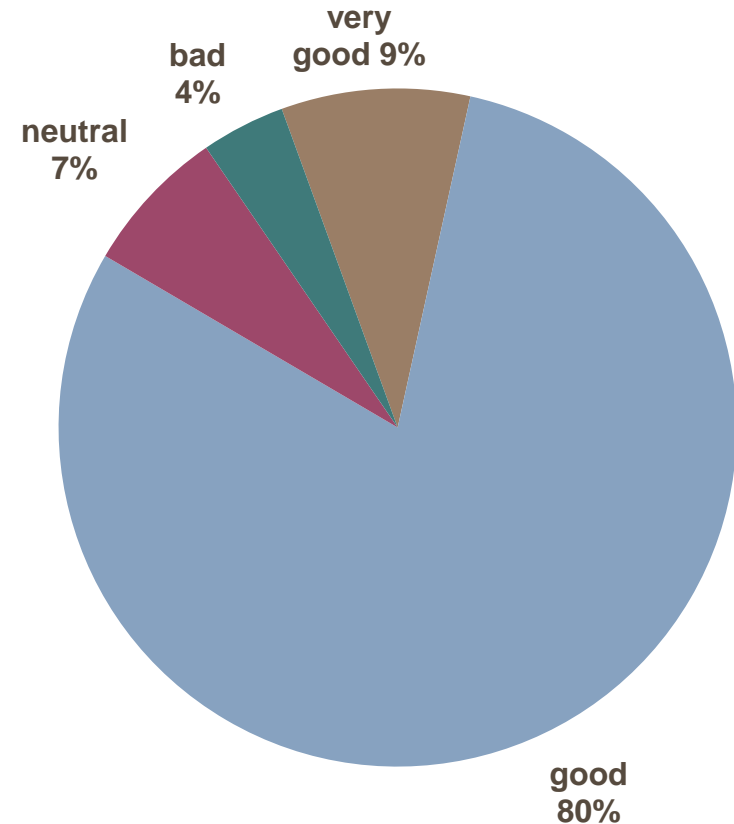
Sources: Feri

1. Germany – the Investment Location

Germany is the Top Location for Investments in Europe

Chemical Managers' Satisfaction with the Location Germany

- About 460 foreign chemical companies with sales of more than € 83 billion and about 144.000 employees are present in Germany.
- 89 percent of the chemical managers in Germany assess the German location conditions positively.



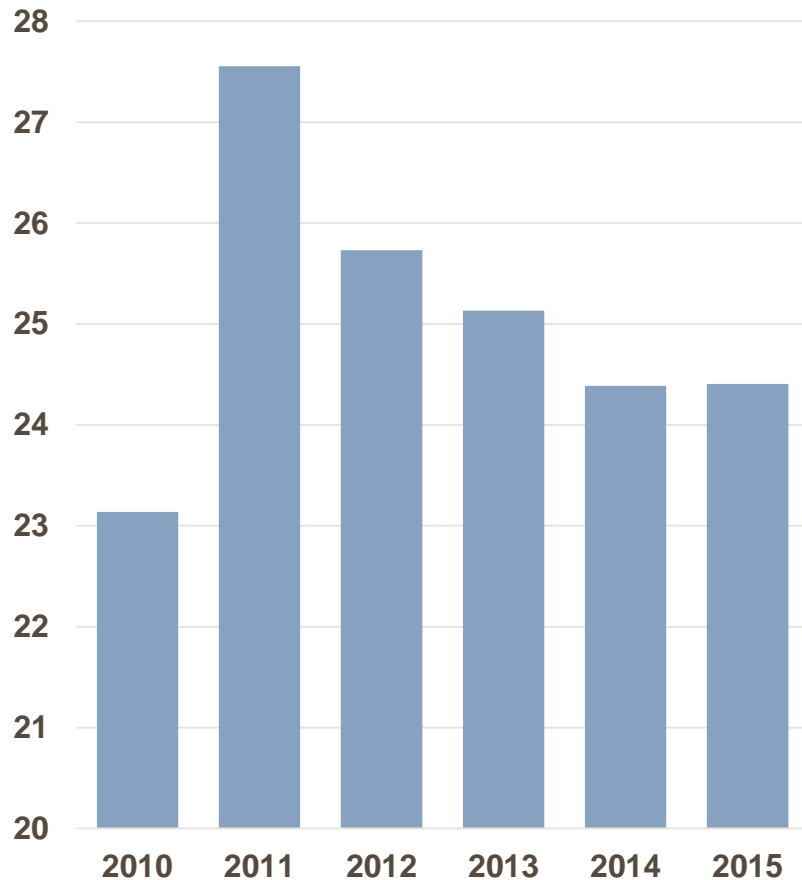
Sources: CHEMonitor Oktober/November 2016, CHEManager/Camelot Management Consultants, Deutsche Bundesbank 2017

1. Germany – the Investment Location

Germany is Attractive for Foreign Investors

Foreign Direct Investment (FDI) in Germany's Chemical Industry

Cumulated in billion Euro



- Foreign companies have expanded their capacities in Germany.
- Foreign stocks in Germany have remained at a high level in recent years.

Sources: Deutsche Bundesbank, VCI

1. Germany – the Investment Location

Germany is Attractive for Foreign Investors

Foreign Direct Investment (FDI) in Germany's Chemical Industry

- Foreign companies have continuously expanded their capacities in Germany.
- In 2012 foreign direct investment in the German Chemical Industry has grown by almost half a billion euros.

Foreign direct investment in the German chemical industry has increased by over four times quadrupled to more than € 42 billion over the last 20 years.





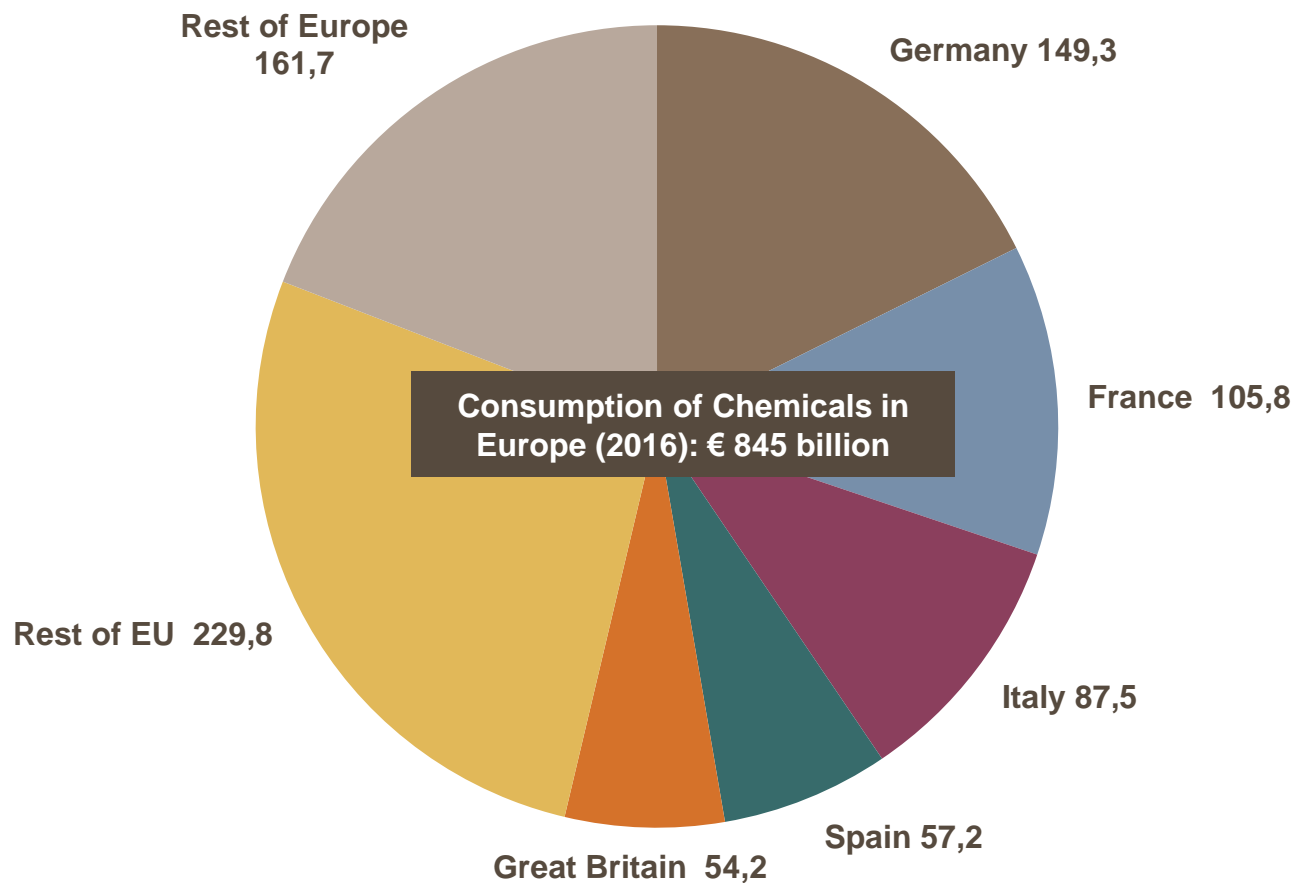
The Chemical Industry in Germany

2. The Chemical Industry in Germany

Germany: a very important sales market for chemicals in Europe

Consumption of Chemicals in Europe

2016, in billion Euro



Source: Chemdata International, VCI

2. The Chemical Industry in Germany

The German Chemical Industry has Maintained a Leading Role in Europe

	1995	2000	2014	2015	2016	Share of EU 28 (2016, %) ¹
Sales (in € billion)	112,3	135,0	190,8	188,7	184,7	25,0%
Investment (in € billion)	5,8	6,8	7,1	7,1	7,0 ³	20,1%
Exports (in € billion)	51,8	76,6	169,0	178,2	178,2 ³	22,9%
R&D Expenditures (in € billion)	5,3	7,1	10,1	10,5	10,8 ²	27,1%

¹ Data from Eurostat and OECD has been used for a better international comparability.

² VCI estimate on basis of target figures for 2016

³ VCI estimate, as of: July 2017

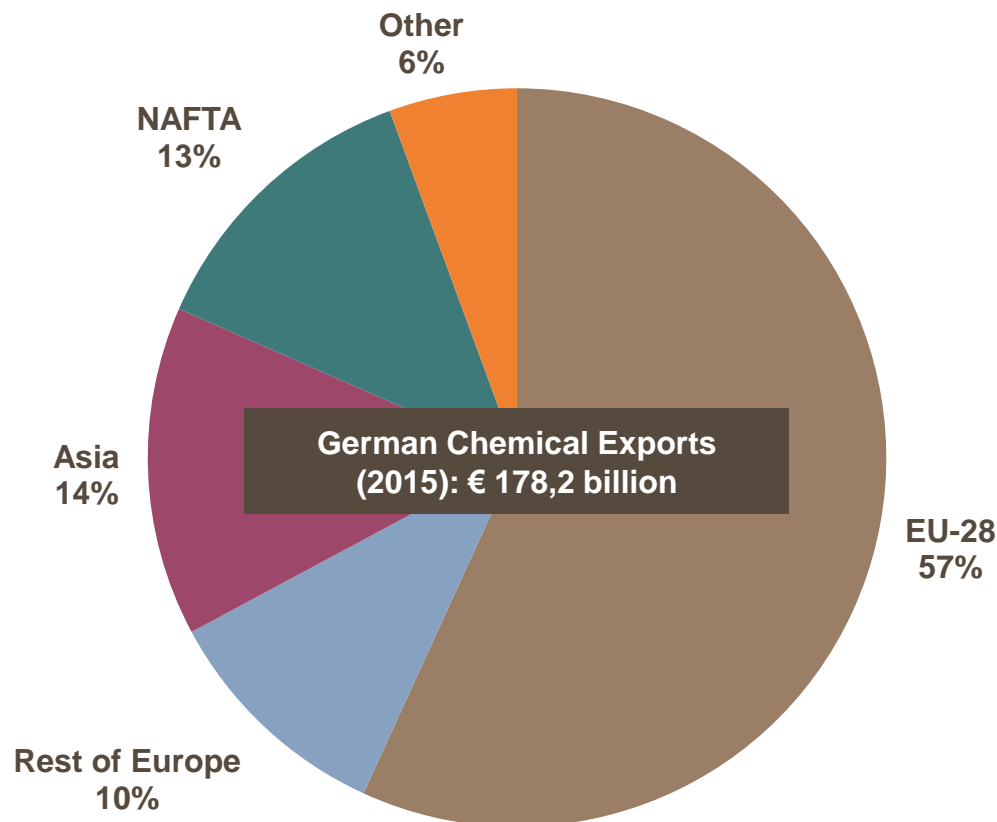
Sources: Destatis, Stifterverband, VCI

2. The Chemical Industry in Germany

Europe is the Most Important Market for the German Chemical Industry

German Chemical Exports

2015, incl. Pharma in billion Euro



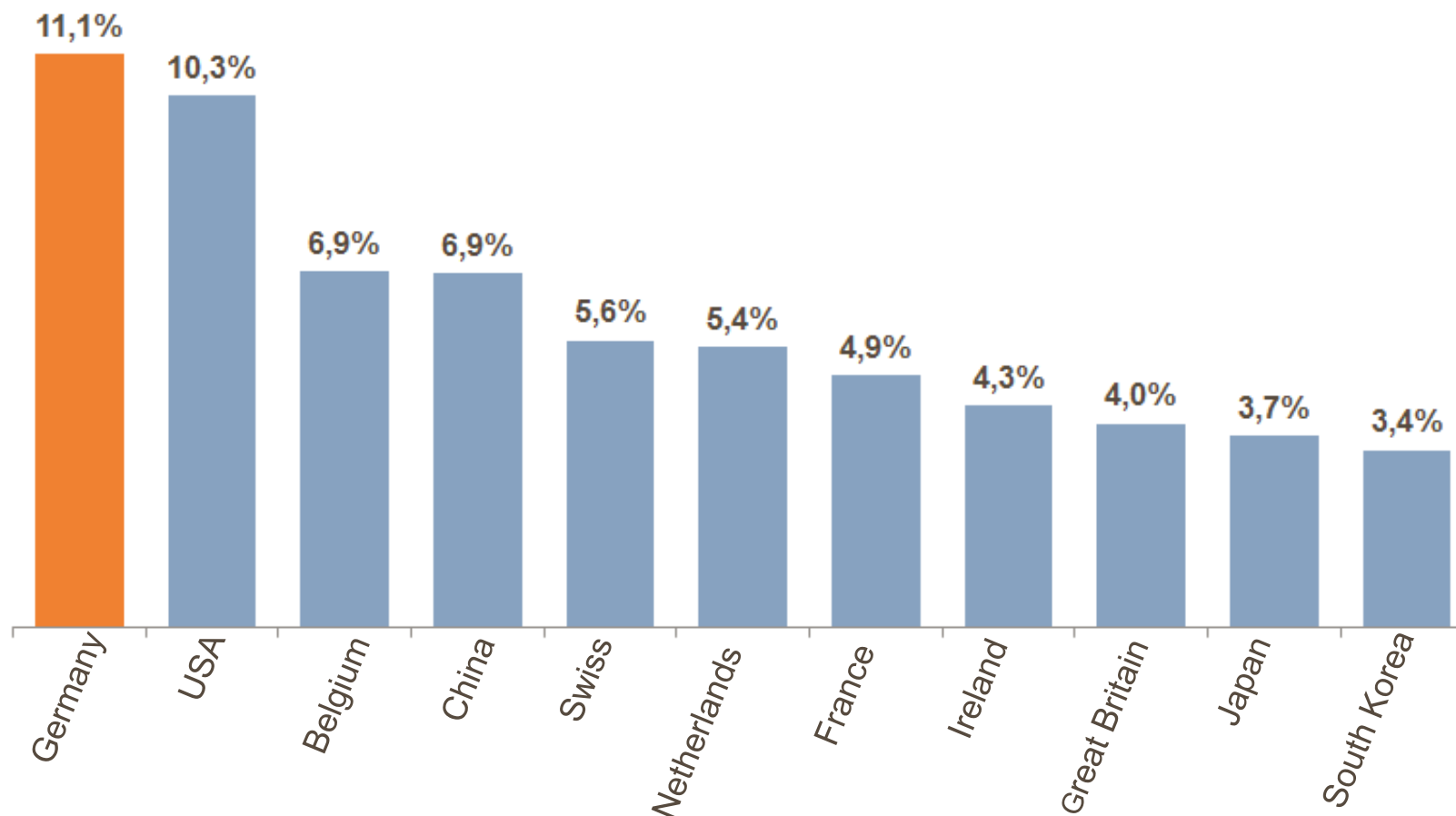
Sources: Destatis, VCI

2. The Chemical Industry in Germany

The German Chemical Industry is World Champion in Exports

Chemical Exports by Country

2016, in %

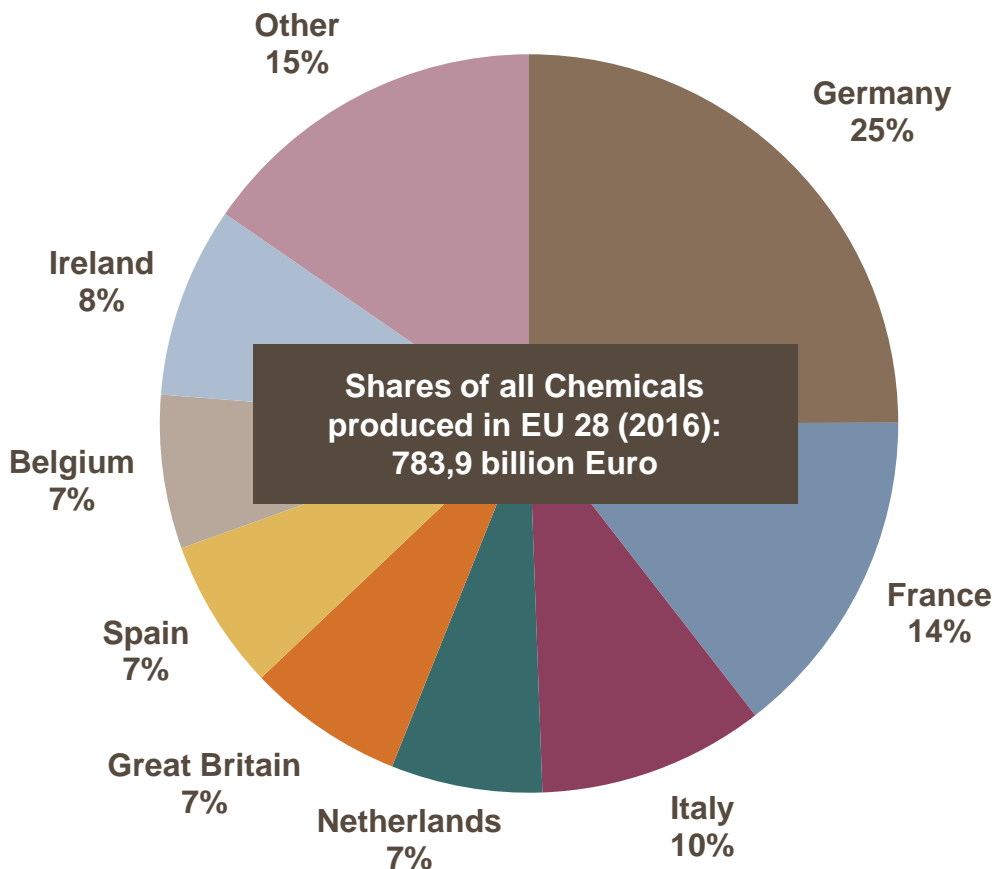


Sources: Chemdata International, VCI

2. The Chemical Industry in Germany

Germany is the Biggest Producer of Chemicals in Europe

Shares of all Chemicals produced in EU 28 incl. Pharma
2016, in percent



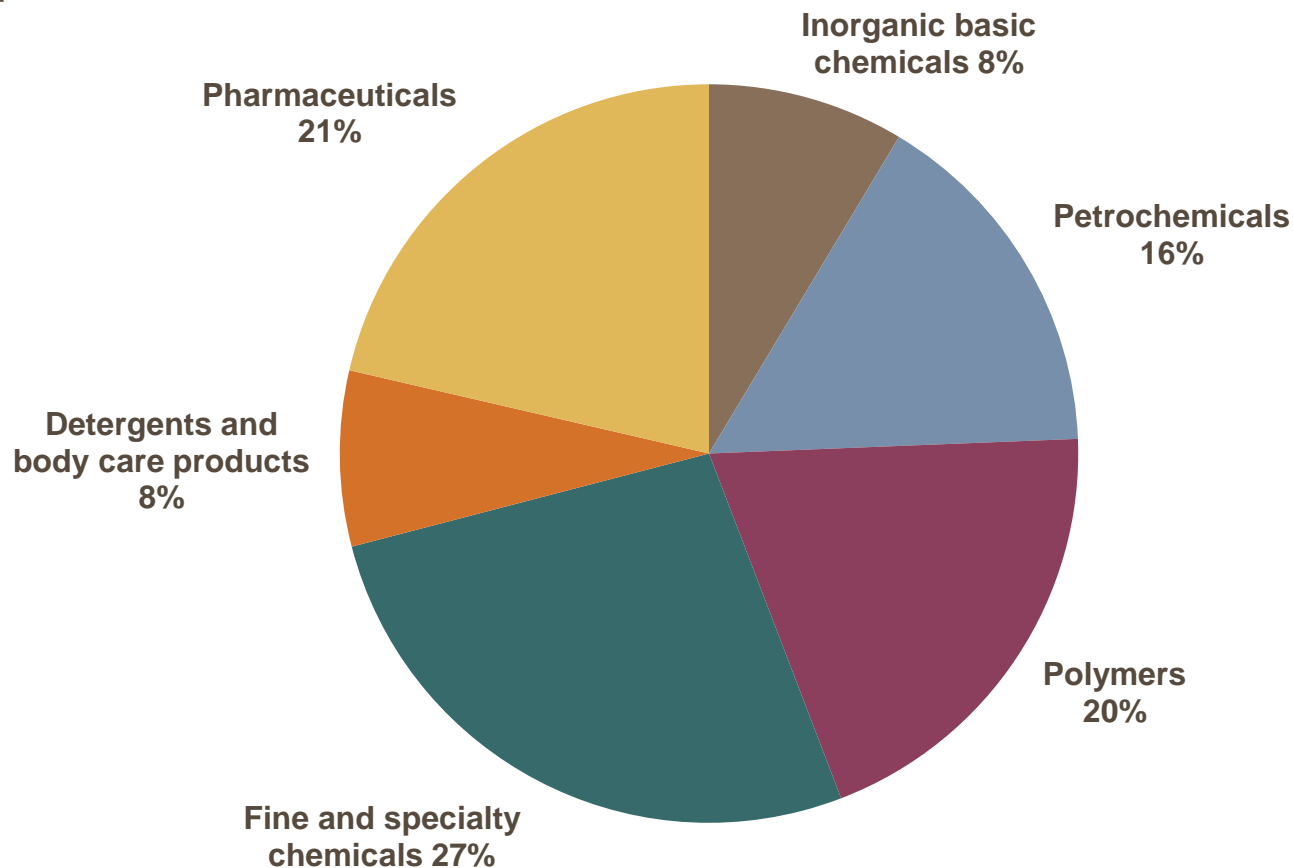
Sources: Chemdata International, VCI

2. The Chemical Industry in Germany

Chemical Production with more than 50% Innovative Products

German production according to chemical product groups

2016, in percent



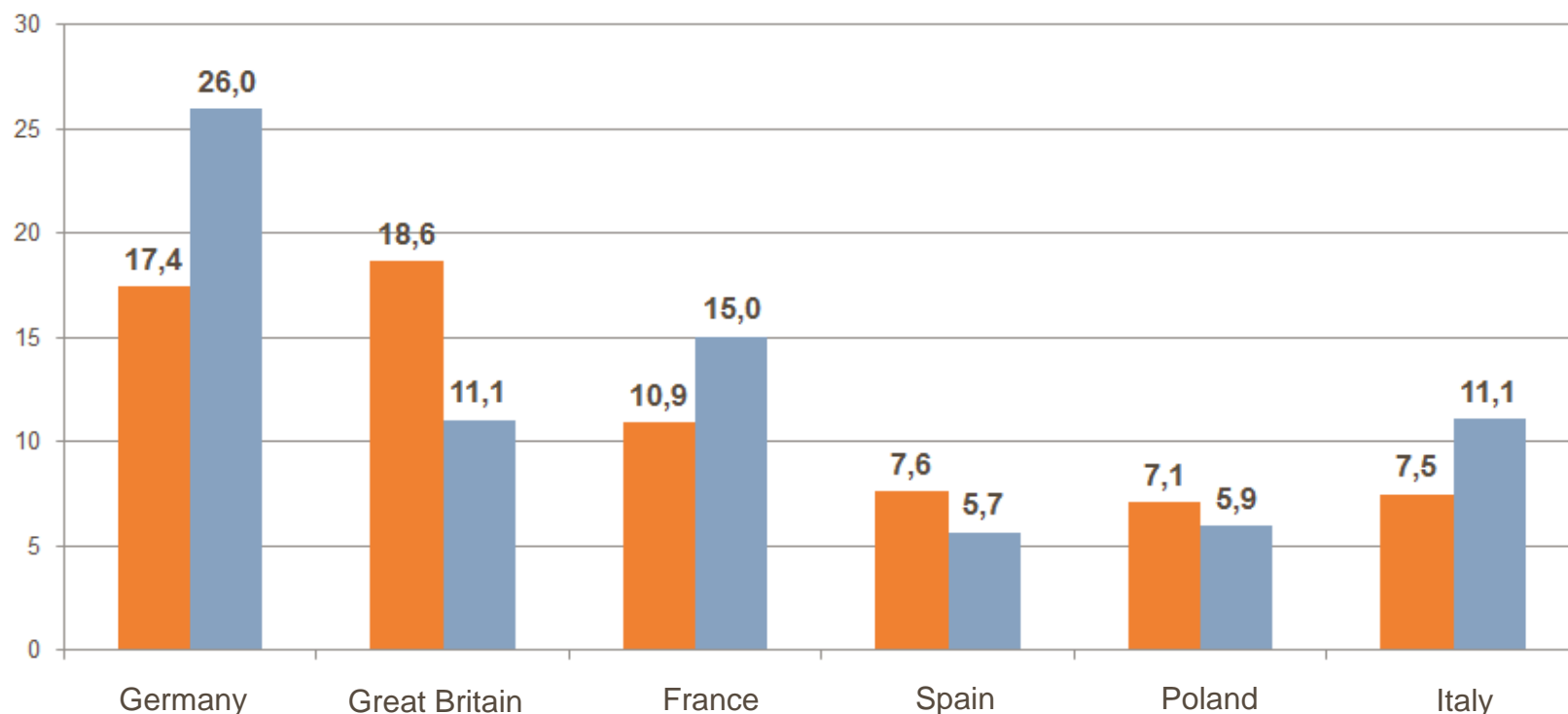
Sources: Destatis, VCI

2. The Chemical Industry in Germany

Germany has the Best Workforce in Europe

Employee Qualification

2016, percent of total number in the EU 27



¹ Respective share of all academics (university education) in the EU

² Percentage of all technicians in the EU

■ Academics ¹ ■ Technicians ²

Source: Eurostat, 2016

2. The Chemical Industry in Germany

Germany has the Best Workforce in Europe

Advantage of Site: Employee Qualification

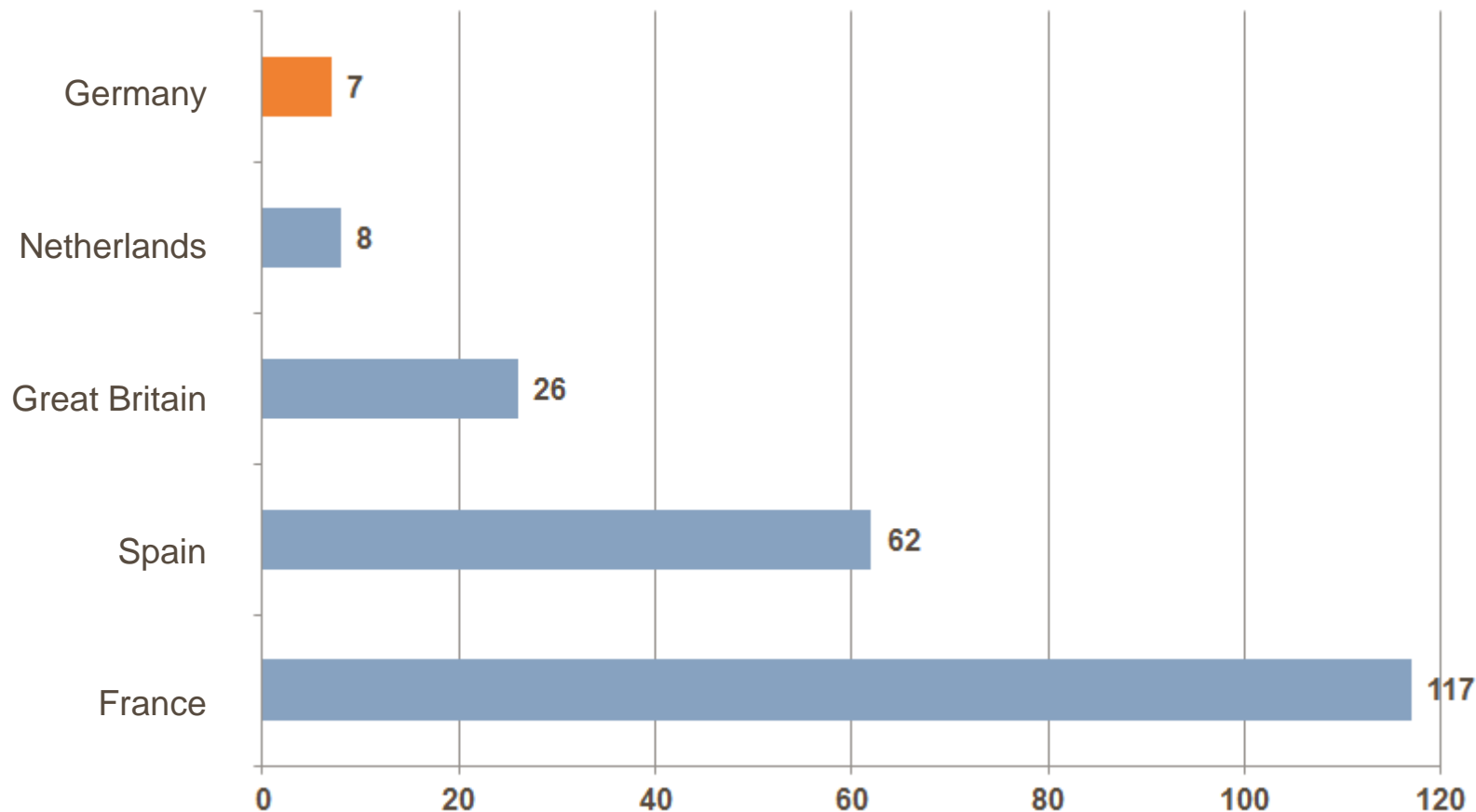
- Germany has the highest level of employee qualification in Europe.
- Good education advanced training and employee qualification are important success factors for the companies operating in Germany.
- Stable social partnership:
 - Employees identify with their companies to a high extent
 - Agreement-oriented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

2. The Chemical Industry in Germany

Lowest Number of Strikes creates competitive advantages

Days Lost to Strikes

annual average till 2015, per 1,000 employees



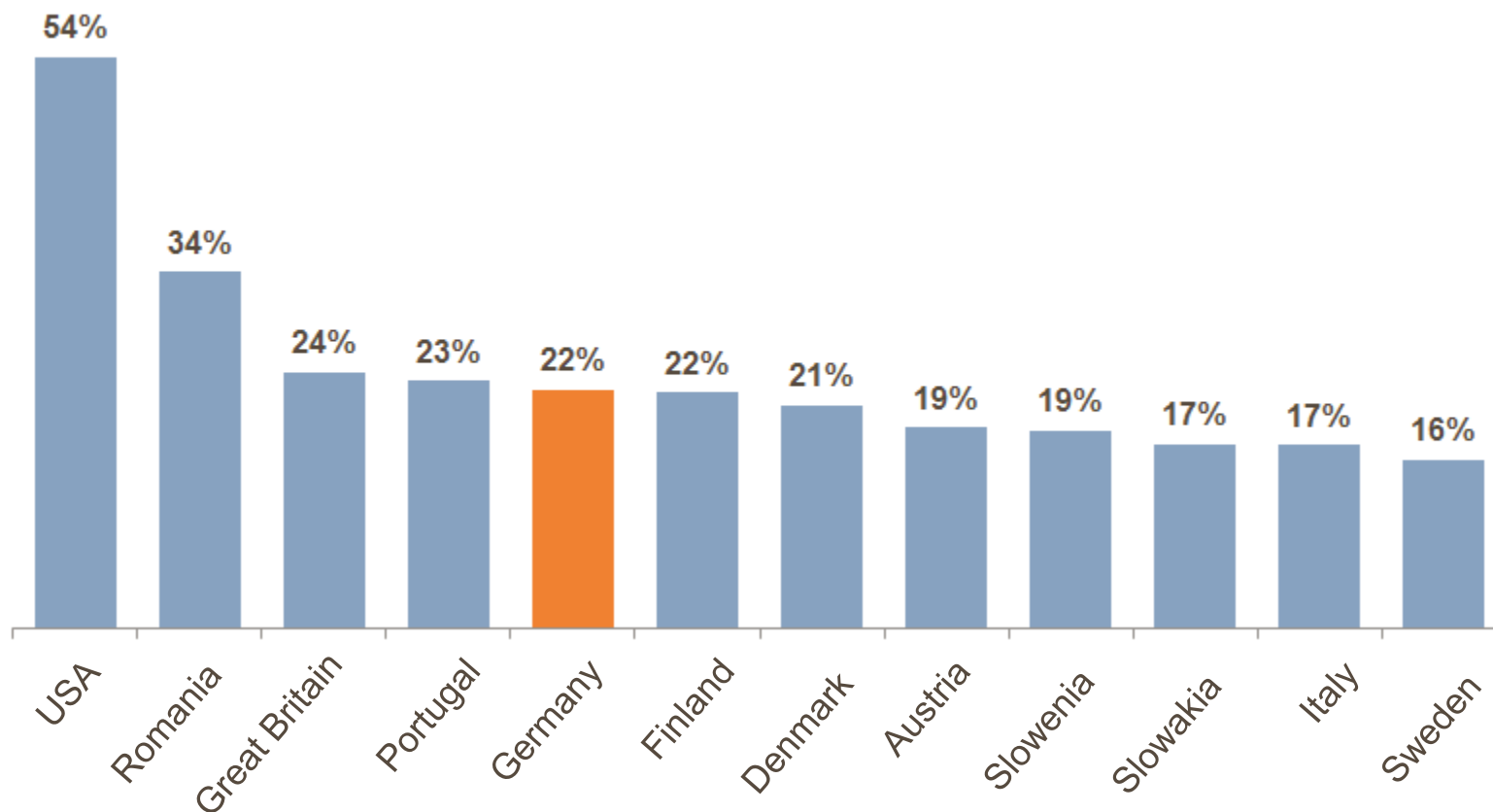
Source: Institute of German Economy, Cologne

2. The Chemical Industry in Germany

Only moderate increase of Labor Costs in Germany

Changes in Labor Costs in the Chemical Industry

2015 to 2008, in percent



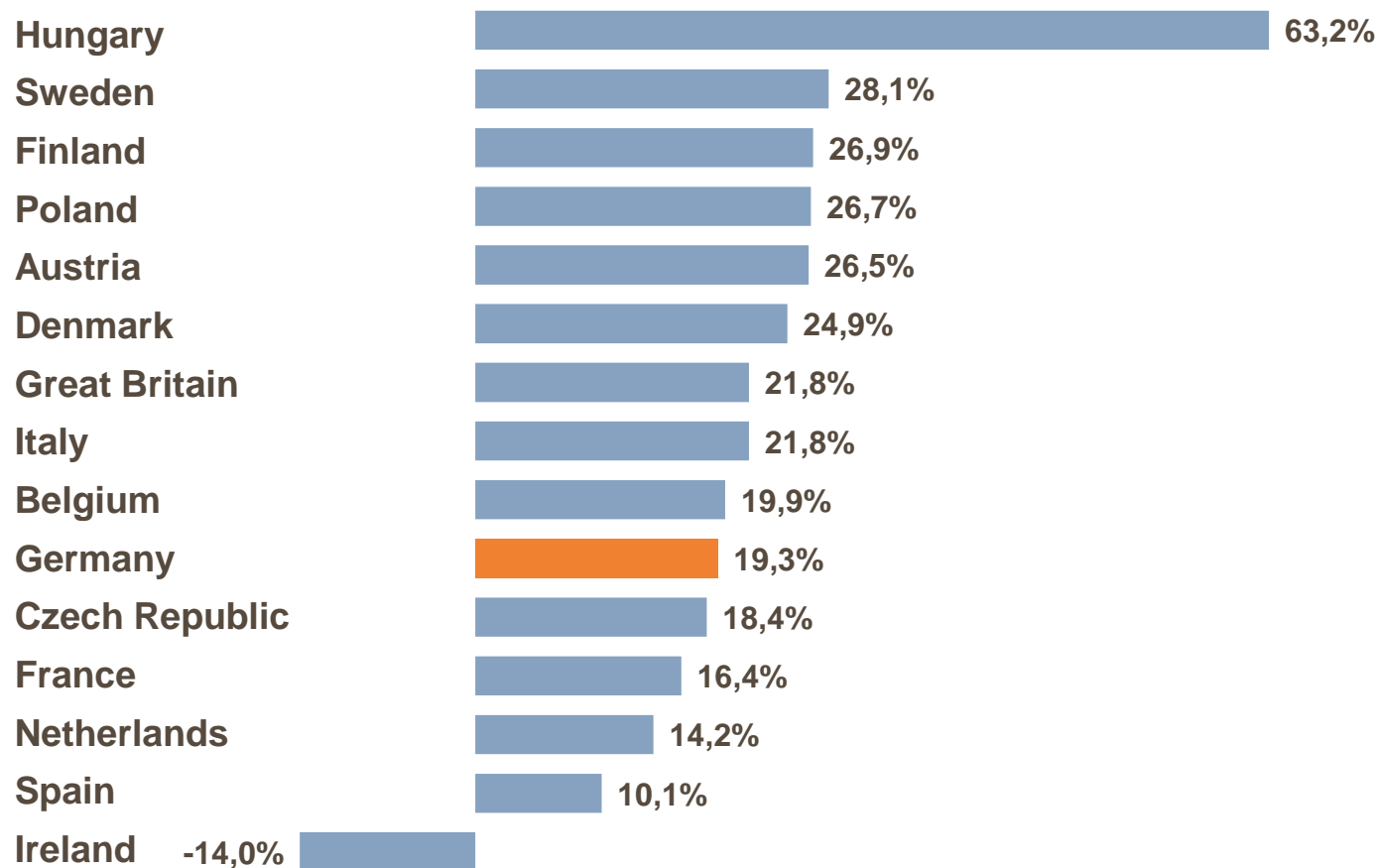
Source: BAVC

2. The Chemical Industry in Germany

Development of Unit Labor Costs in Europe

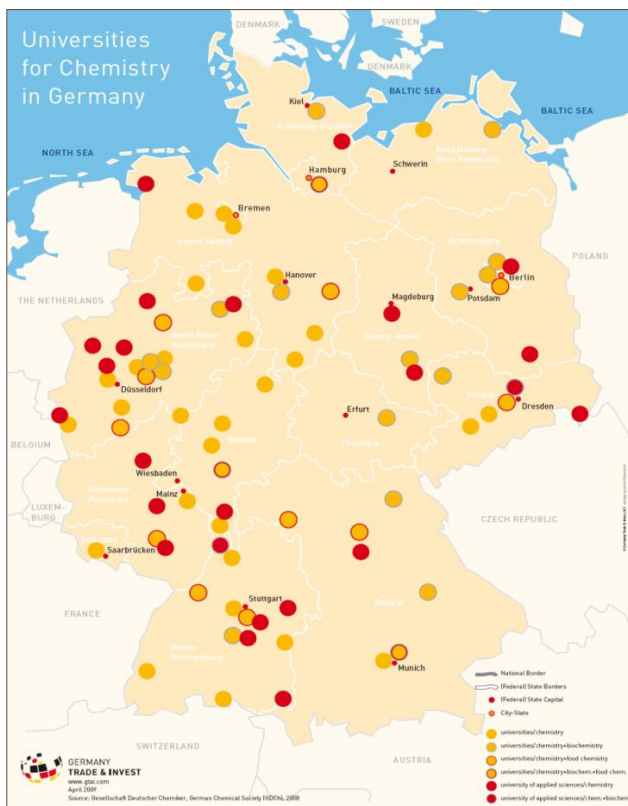
Development of Unit Labor Costs in Europe

total economy 2016 to 2005, in percent



2. The Chemical Industry in Germany

Chemical Research and Development close to Sites



- 58 universities to train young scientists for the chemical industry
- including 18 universities offering biochemistry and 14 universities offering food chemistry
- 24 universities of applied sciences offering chemistry

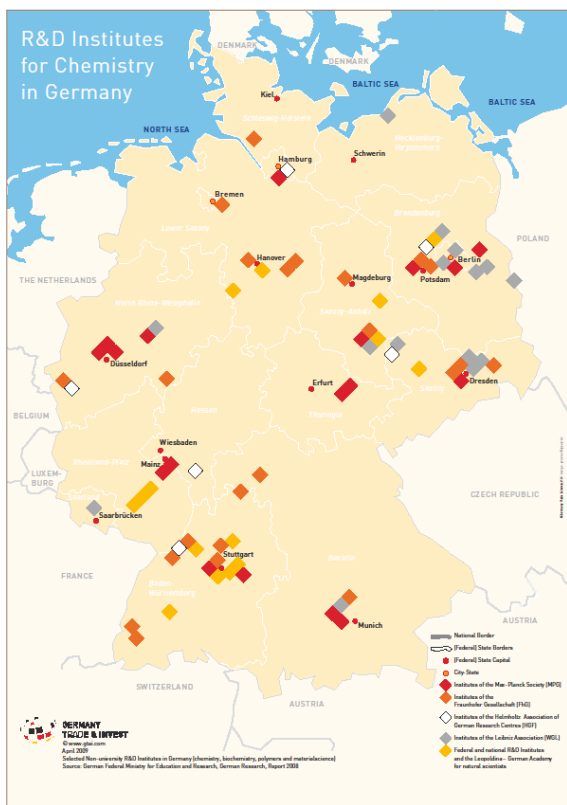
The intense exchange between universities and companies ensures that the know-how advantage of German companies is maintained.



Sources: German Chemical Society GDCh, 2007; Federal Ministry of Education and Research BMBF, 2008, Germany Trade & Invest 2009

2. The Chemical Industry in Germany

Non-University Research and Development close to Sites



76 non-university R&D facilities for the chemical industry:

- 18 Institutes of Max Planck Society (MPG)
- 23 Institutes of Fraunhofer (FhG)
- 6 Institutes of Helmholtz Association (HGF)
- 14 Institutes of Leibniz Association (WGL)
- 15 Federal and national R&D institutes

Germany has a range of universities, R&D facilities and companies that is among the leaders in the world.



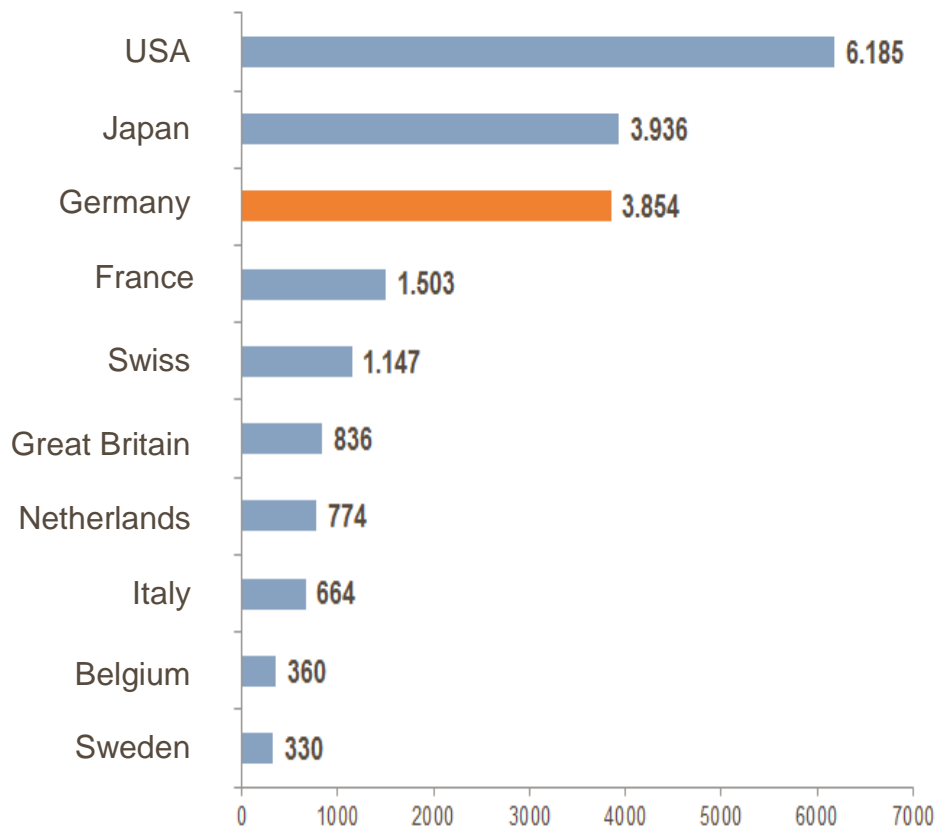
Sources: Federal Ministry of Education and Research BMBF, 2008; Germany Trade & Invest, 2009

2. The Chemical Industry in Germany

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

European Granted Patent Registrations, Chemistry and Polymers

2016, absolute figures



- The number of patents underlines the success in research and development.
- Within Europe Germany is at the top of the list for patent registrations – proof that Germany is the top location for innovations.

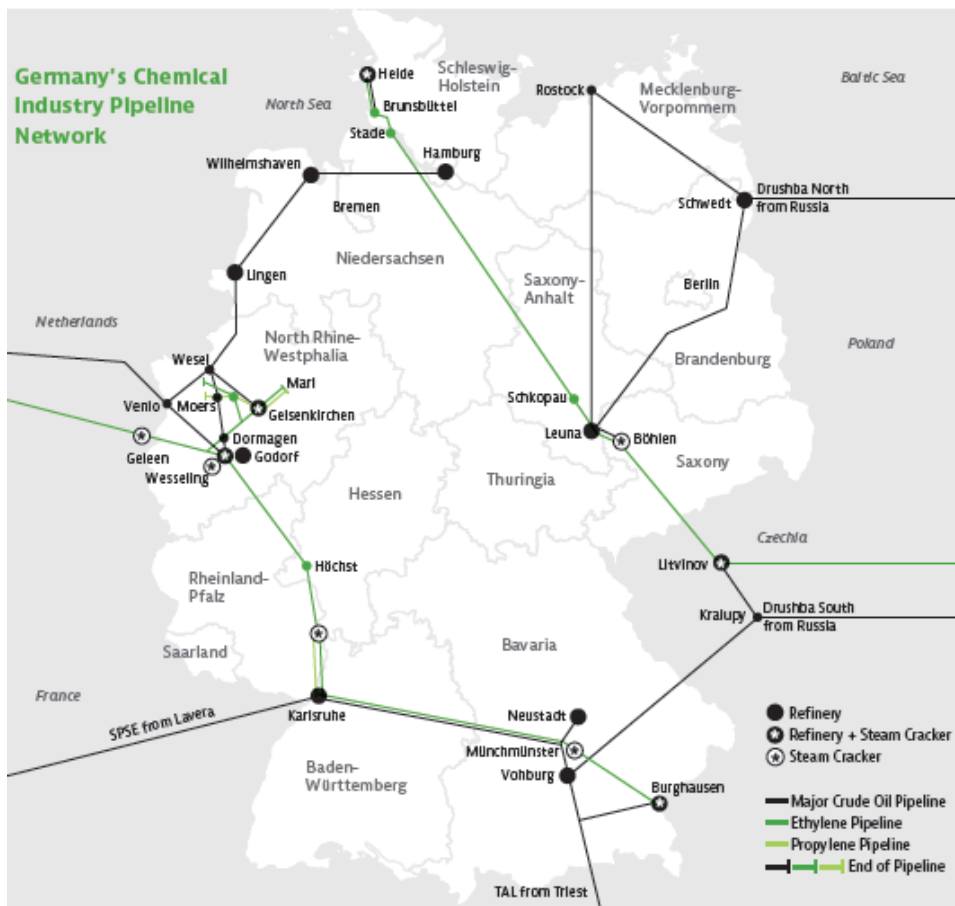
Source: EPO, 2016



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.

Source: Germany Trade & Invest, 2012, Grafik 2016

3. Chemical Parks

German Chemical Parks: Open for Siting of Companies



Unique benefits for investors:

- 35 Chemical Parks with an excellent infrastructure and more than 2,000 ha of settlement area for companies to invest
- Numerous integration possibilities and, consequently, cost-reducing synergies
- New industry segment: “Site operators” offer professional management, chemical industry-based infrastructure, qualified settlement support as well as services and expertise from one source

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

3. Chemical Parks

Concept for Investors along the Entire Value Chain

Raw material producers

Basic products (organic, inorganic)

Fine/specialty chemicals

Polymers

Processors/refiners

Plastics

Pharmaceutical precursor

Mixed products (e.g. paints, surfactants)

Producers of end products

Plastics

Pharmaceuticals

Paints/coatings

Fibers

Detergents, cleaning gents, cosmetics

Chemicals-related processing industry

Paper industry

Automotive components supply industry

Oil refining

Aluminium industry

Metal working

Glass industry

Producers of goods based on renewable raw materials/ bio-technology

Biofuels

Bio intermediates

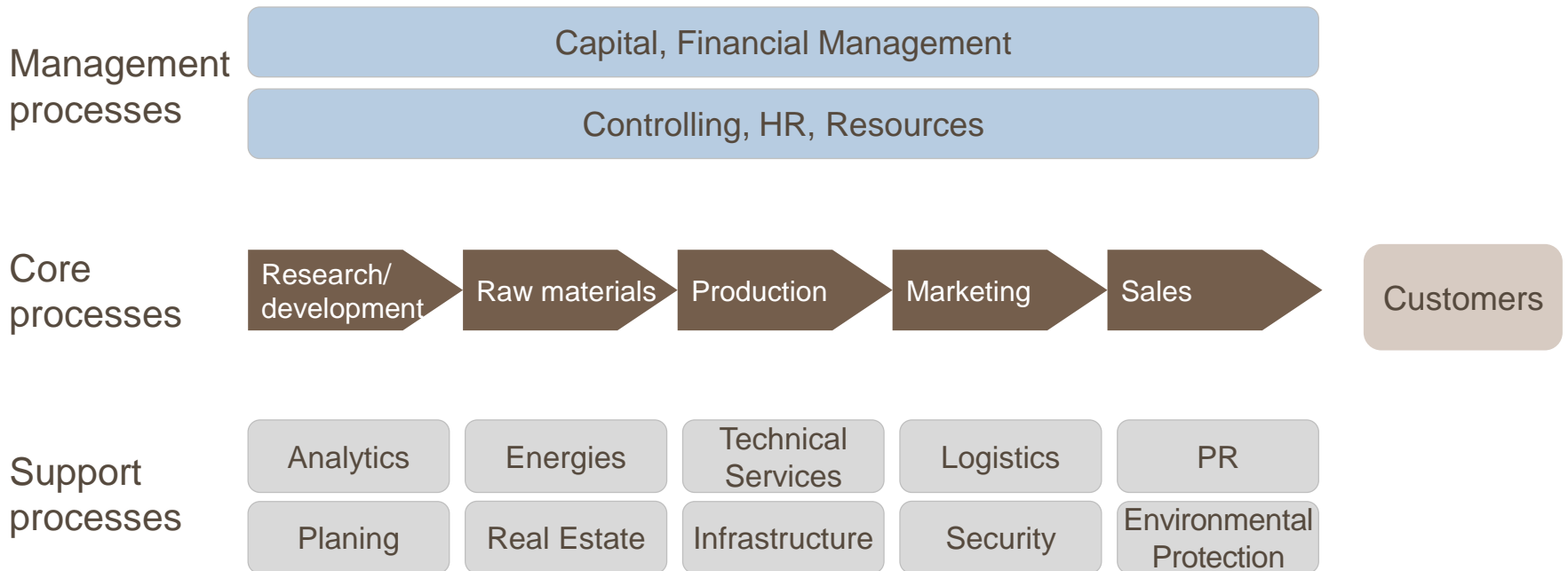
Biopolymers

Source: VCI Sector Group of Chemical Parks, 2013

3. Chemical Parks

Individual Solutions for Investors

In Chemical Parks investors can focus on their core business and outsource all other business processes:

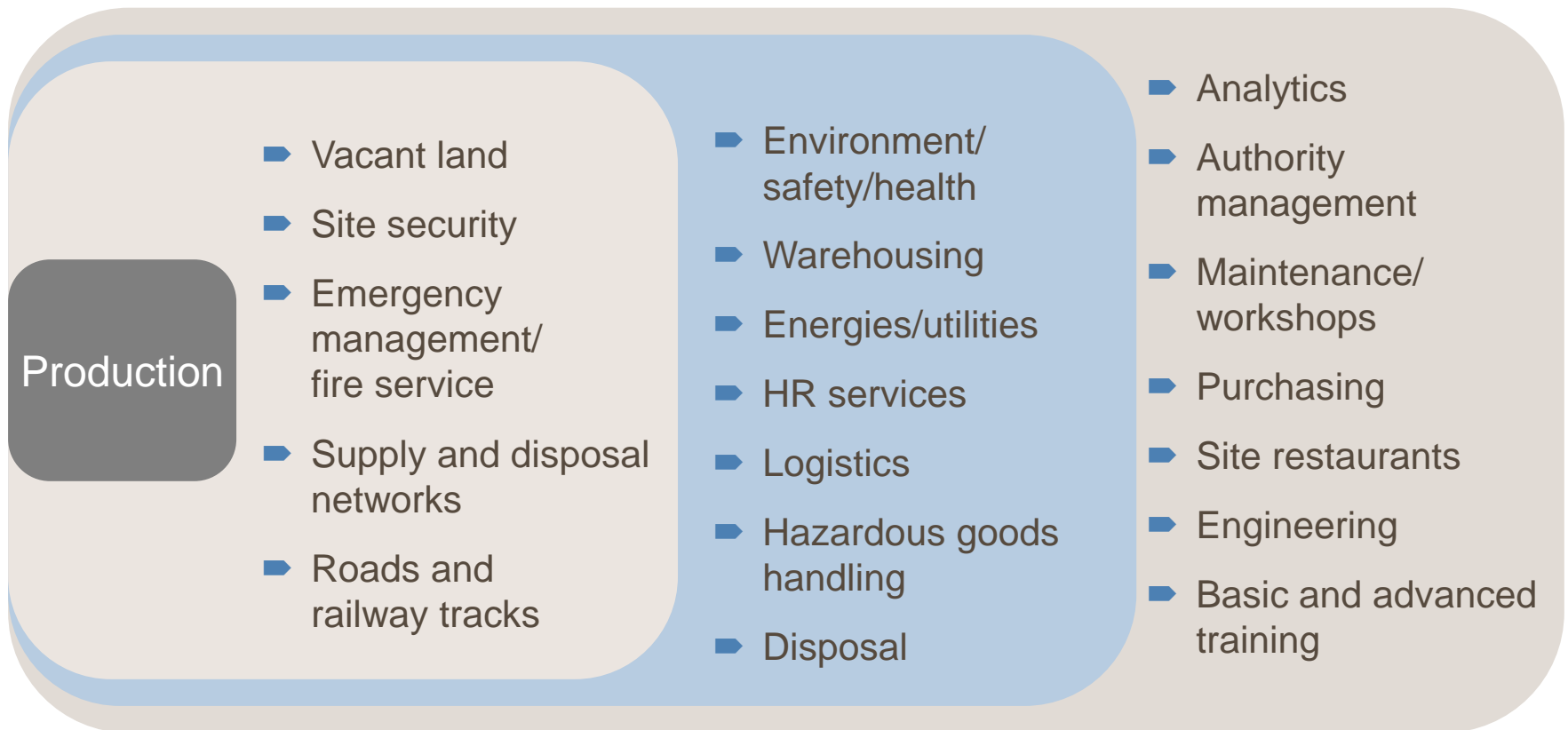


Source: VCI Sector Group of Chemical Parks, 2013

3. Chemical Parks

Comprehensive Service Portfolio of Site Operators

Investors choose the best corresponding offer for their business model from the site operators' wide range of services:



Source: VCI Sector Group of Chemical Parks, 2013

3. Chemical Parks

Advantages for companies at a glance

Investing in German Chemical Parks brings many benefits:

- Optimal economic conditions
- Professional settlement support
- Investment benefits through existing infrastructure
- Flexibilisation and optimization of business model
- Focusing on core business
- Time and cost benefits through offered individual services
- Synergy potentials resulting from optimum structures (e.g. links to supply chain, connections to research institutes)
- Benefits from integrated know-how structures

Source: VCI Sector Group of Chemical Parks, 2013

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!





References of Investment

4. References of Investment

FP-Pigments GmbH in Leuna

"Looking for a suitable location for the construction of our plant with the aim of establishing ourselves as a reliable partner in the field of special pigments worldwide, the chemical site of Leuna offered and still offers ideal conditions. More than 500 customers from around the world are supplied from Leuna."

Markus Blomquist, Managing Director FP-Pigments GmbH



Location Leuna



Decision Drivers

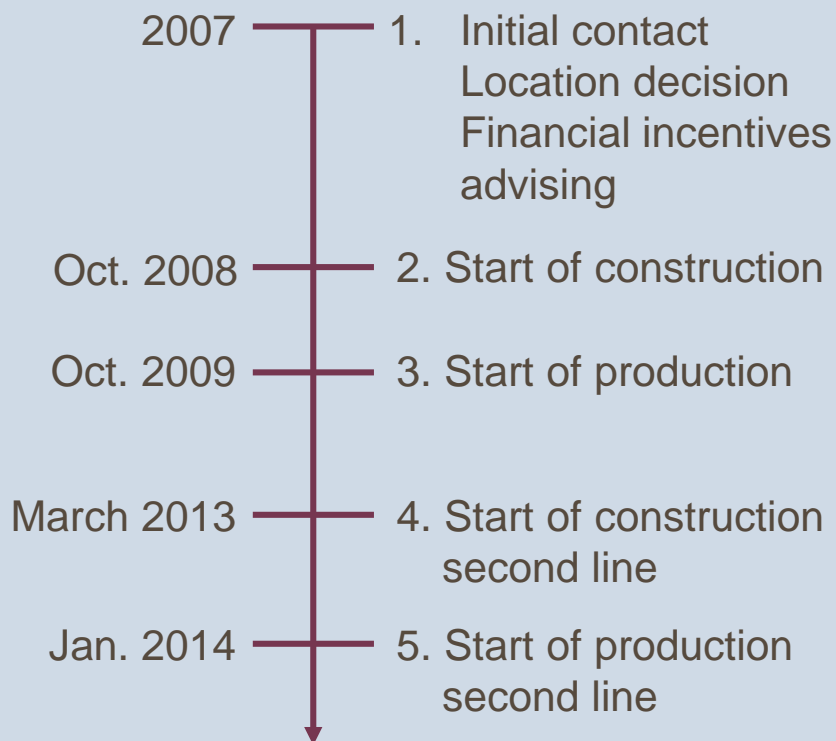
- Skilled personnel at site
- Excellent infrastructure
- Services and media supply from a single source
- Direct proximity to suppliers of raw materials
- Investment-friendly environment
- Incentives of investments

4. References of Investment

FP-Pigments GmbH in Leuna

Timeline

Milestones



Project Data

- Investment:
about € 25 million
- Product:
High-performance pigments
- Number of staff : 30

4. References 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

4. References of Investment

Heraeus Quarzglas Bitterfeld GmbH & Co. KG

Timeline

Milestone



1991	Foundation stone laying for plant 1
1992	Launch of modul 1 Expansion of further modules – plant 1
2005	Launch of plant 2 Expansion of further Modules – plant 2
2017	Start of construction new plant 3
2018	Planned launch of new plant 3

Project information

- Investment volume:
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. References 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



Standort Schwarzheide



Factors for the location decision

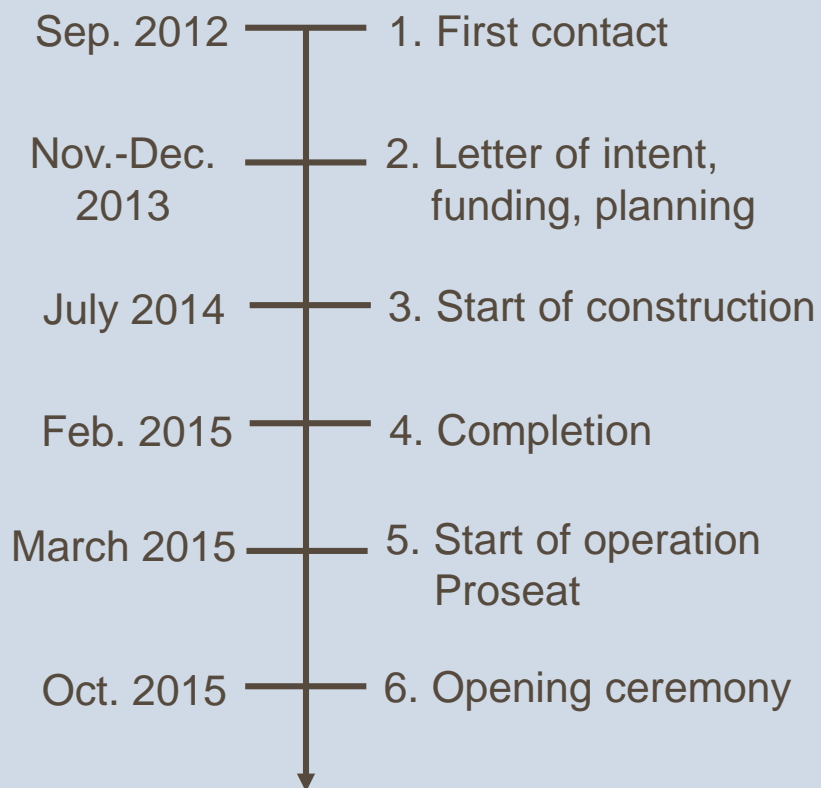
- Exzellente infrastructure
- Optimal conditions for international investors
- Direct supplies of the raw material Neopolen® via pipeline
- At the location: technology and competence centre of the plastics industry of BASF and Fraunhofer Gesellschaft
- existing well-developed infrastructure
- well qualified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

4. References of Investment

Proseat Schwarzheide GmbH

Timeline

Milestones



Project information

- Investment volume: € 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. References of Investment

CO₂ Betriebs-GmbH & Co. KG in Höchst

"This facility makes us more independent from suppliers and improves delivery reliability for users. Innovative projects with significant environmental benefits are best implemented at large industrial estates."

Gerhard Schlüter and Dr. Thilo Rießner, Managing Directors of CO₂ Betriebs-GmbH & Co. KG



Decision Drivers

- Ideal site environment (availability, location, logistics, one-stop shop)
- Raw material on site (plant-to-plant)
- Customer proximity (metropol region Frankfurt)
- Investment protection (site development)

4. References of Investment

CO₂ Betriebs-GmbH & Co. KG in Höchst

Timeline

Milestones

Oct. 2008	1. Initial contact
Dec. 2008	2. Location decision
April 2009	3. Financial incentives advising
Dec. 2009	4. Start of construction
	5. Start of production

Project Data

- Investment: € 5,2 million
- Product: Carbon dioxide (liquid CO₂)
- Benefits: Reduction of CO₂ emissions through reuse
- Annual capacity of new plant: 28.000 tons

4. References of Investment

Sirtex Medical Ltd. in Höchst

"Our new Frankfurt production site will play a key role in supplying our customers in the fast-growing European market and newly tapped markets in the Middle East and in Africa. We believe that satisfying customers' needs is about more than delivering top-quality products. It is also about delivering them on time with short transport distances. The new plant will make us faster and more efficient and allow us to respond flexibly to growing demand in the future, too."

Nigel Lange, Chief Executive Europe, Sirtex



Decision Drivers

- Central location (airport, logistics, customer proximity)
- Excellent base for market development
- One-stop project development and execution
- Customized site services

4. References of Investment

Sirtex Medical Ltd. in Höchst

Timeline

Milestones



Project Data

- Investment: € 3 million
- Product: SIR-Spheres microspheres against liver cancer
- Supplied to Europe, Middle East and Africa
- Number of staff : 10
- Production start: end of 2014

4. References of Investment

Clariant Produkte (Deutschland) GmbH im Chemiepark GENDORF

"Why does Clariant invest in the GENDORF Chemical Park? Because here we find everything that brings us ahead in the 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 of location decision

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



Contact

5. Contact

Information on the Chemical industry / Chemical parks

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