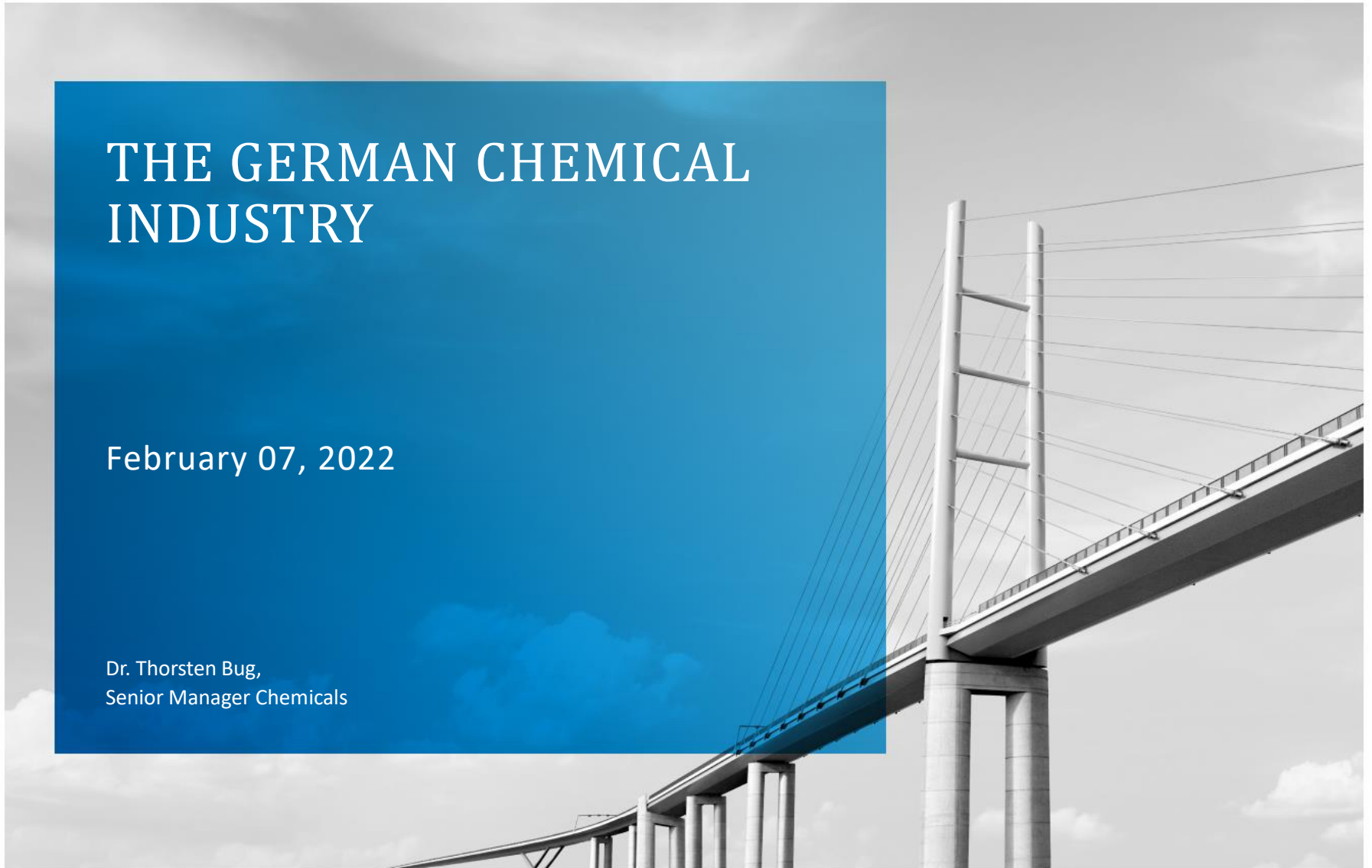


THE GERMAN CHEMICAL INDUSTRY

February 07, 2022

Dr. Thorsten Bug,
Senior Manager Chemicals



Agenda

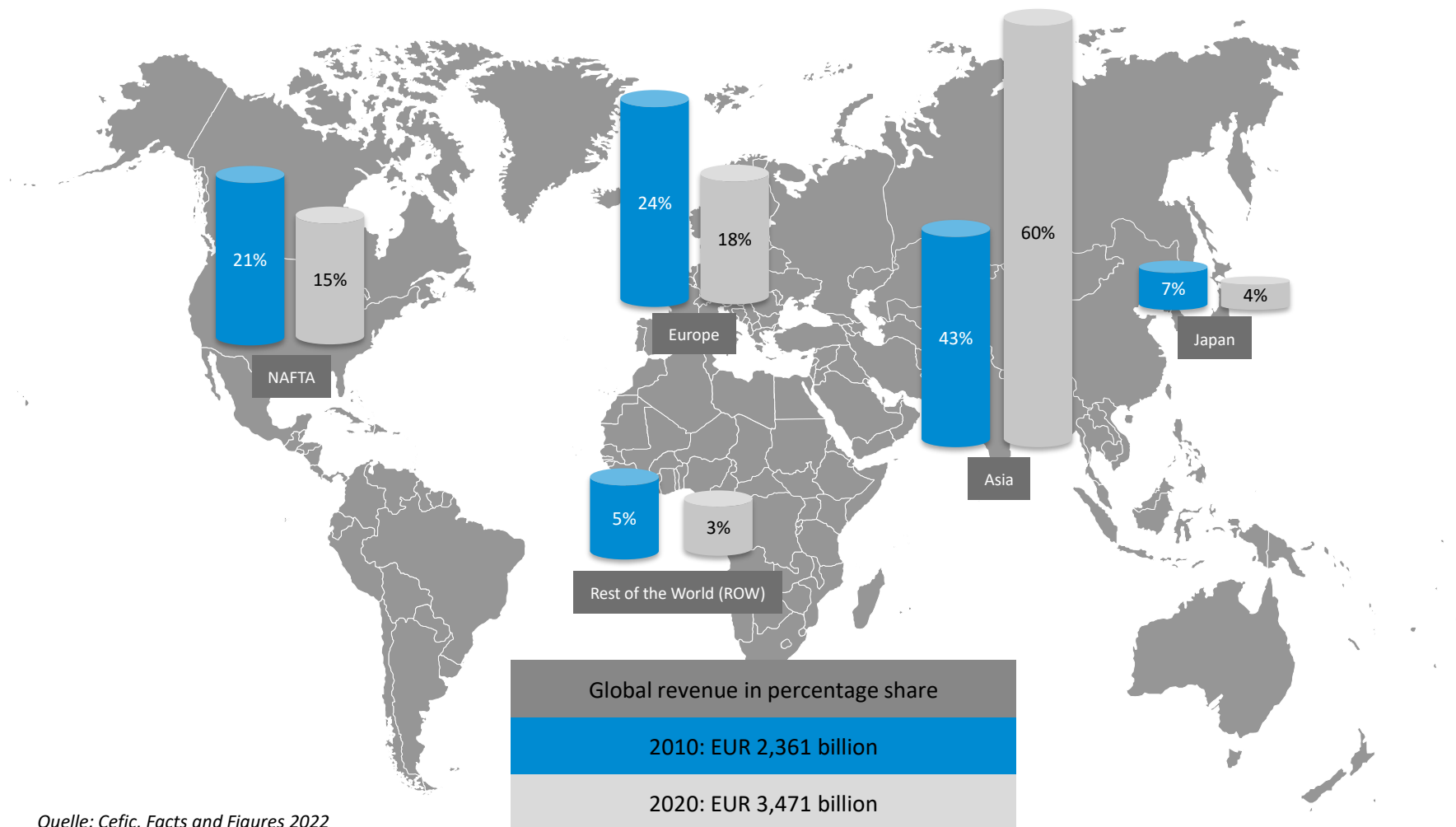
1. The Chemical Industry Globally
2. The German Chemical Industry
3. Opportunities for Chemicals Producers in Germany

Main sources:

- Cefic: The European Chemical Industry Council, Brussels, www.cefic.org
- Destatis: Statistisches Bundesamt (engl.: Federal Statistical Office), Wiesbaden, www.destatis.de
- VCI: Verband der chemischen Industrie (engl.: German Chemical Industry Association), Frankfurt/Main, www.vci.de

Global chemical revenue

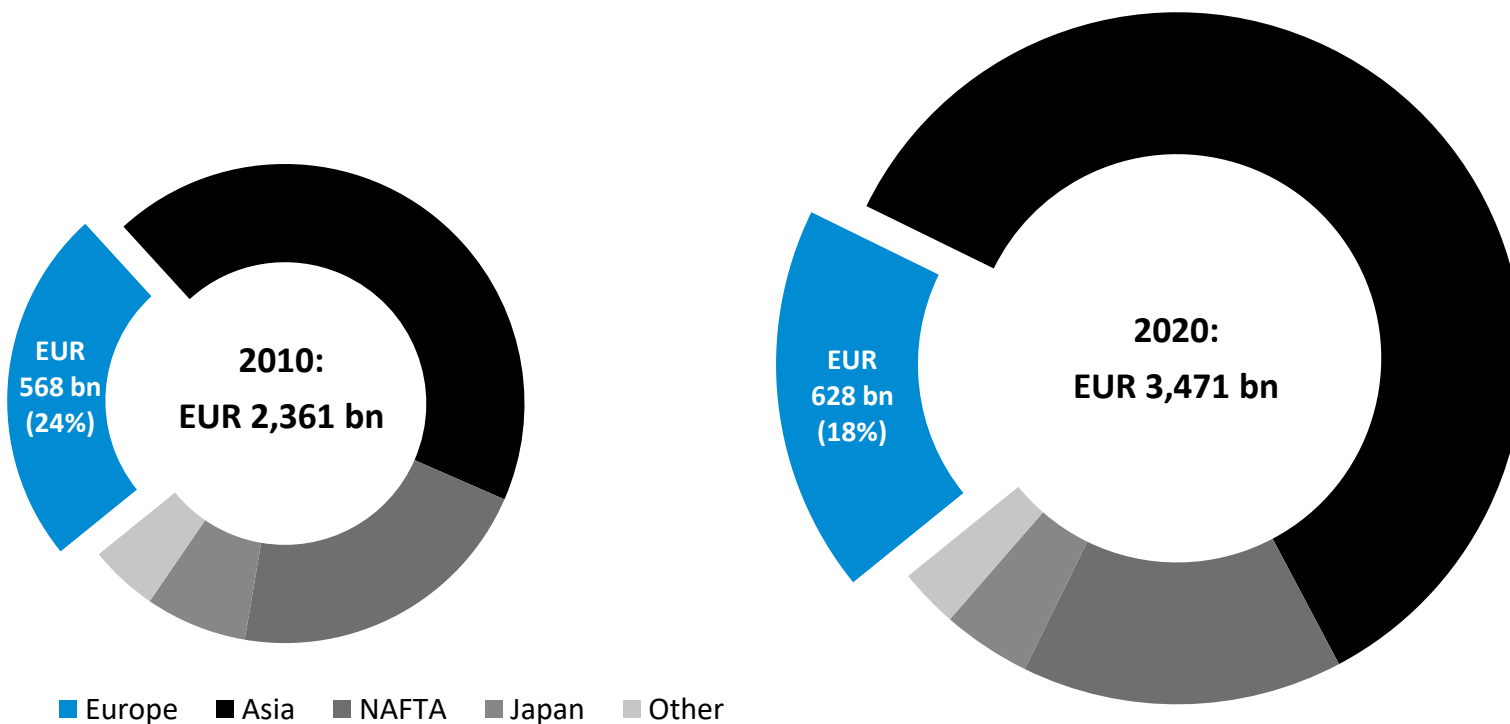
Market shares from NAFTA, Europe and Japan are progressively moving to Asia in the last decade.



Quelle: Cefic, Facts and Figures 2022

Global Chemical Revenue

Despite the Asian market growth in the period 2010-2020, Europe continues to be a relevant chemicals market.

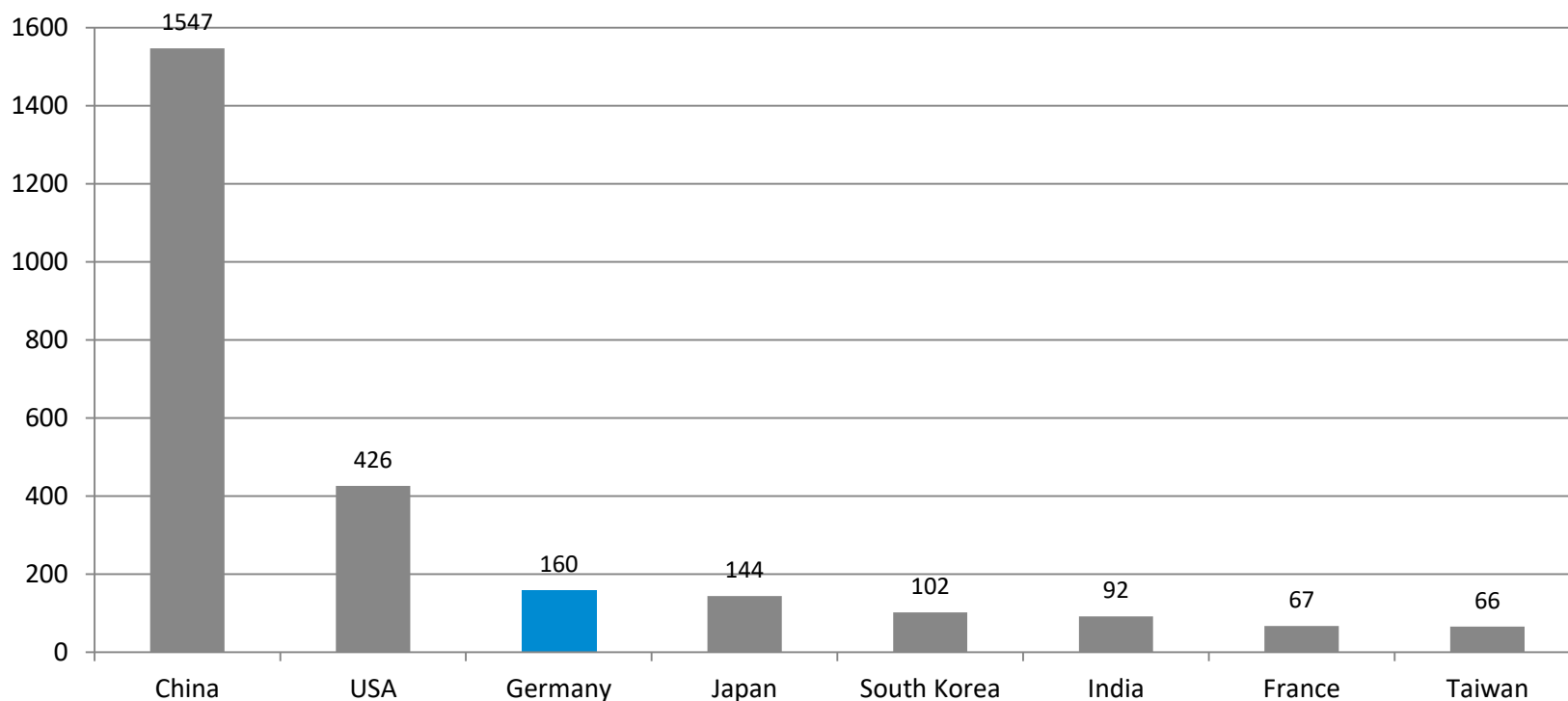


Quelle: Cefic, Facts and Figures 2022

Global Chemical Revenue

Germany is the world's third largest chemical market, being surpassed only by China and the US in terms of revenues.

Chemical Revenue in EUR billion, 2020

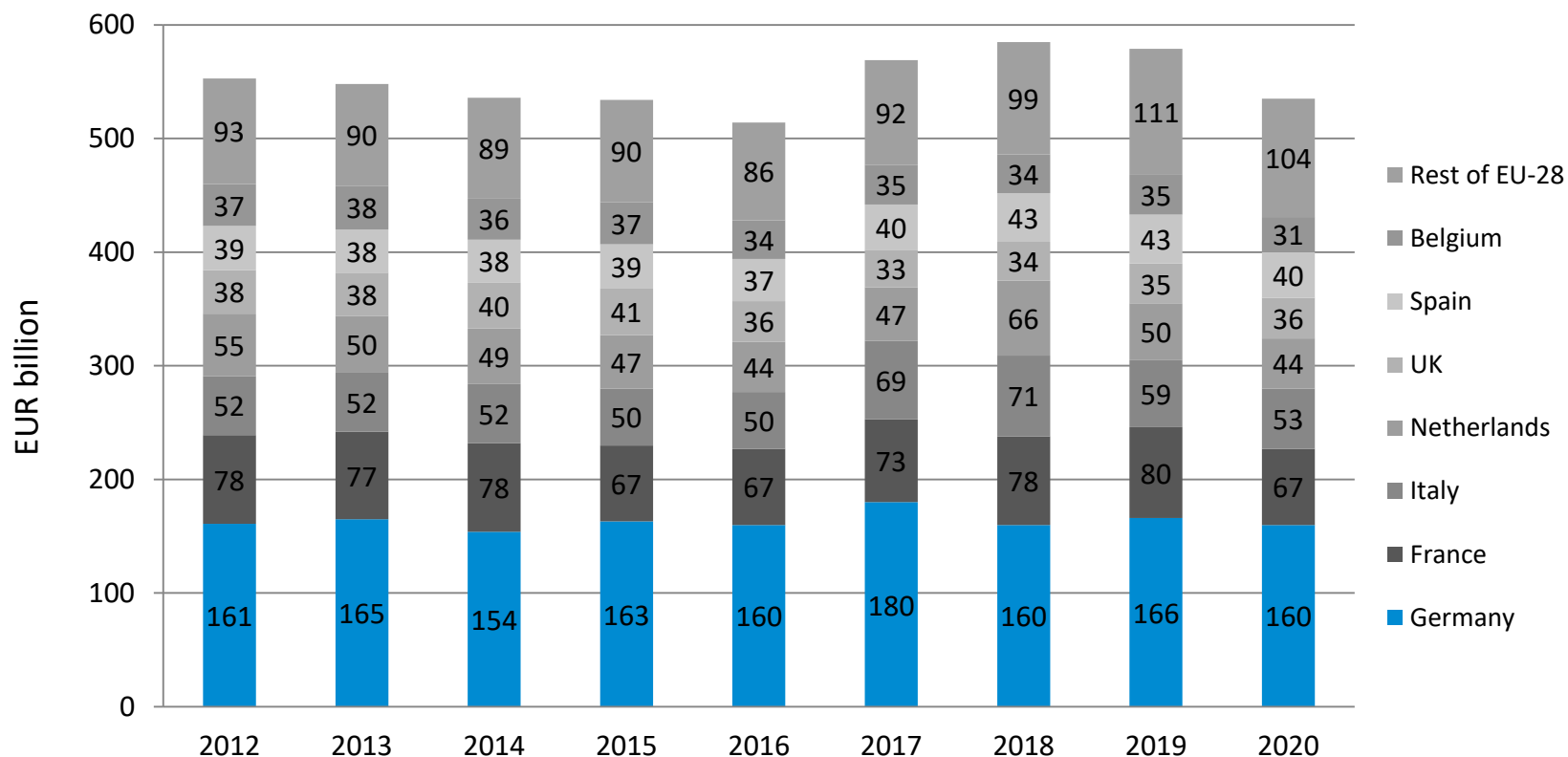


Source: Cefic Chemdelta International 2022

European Revenues

With a share of 32% in 2020, the German chemical industry has consolidated its leading role in Europe during the recent years.

European (EU-28+UK) Chemical Industry Revenues in EUR billion, 2012–2020



Quelle: VCI, *Chemiewirtschaft in Zahlen 2021* (Table 59b)

Agenda

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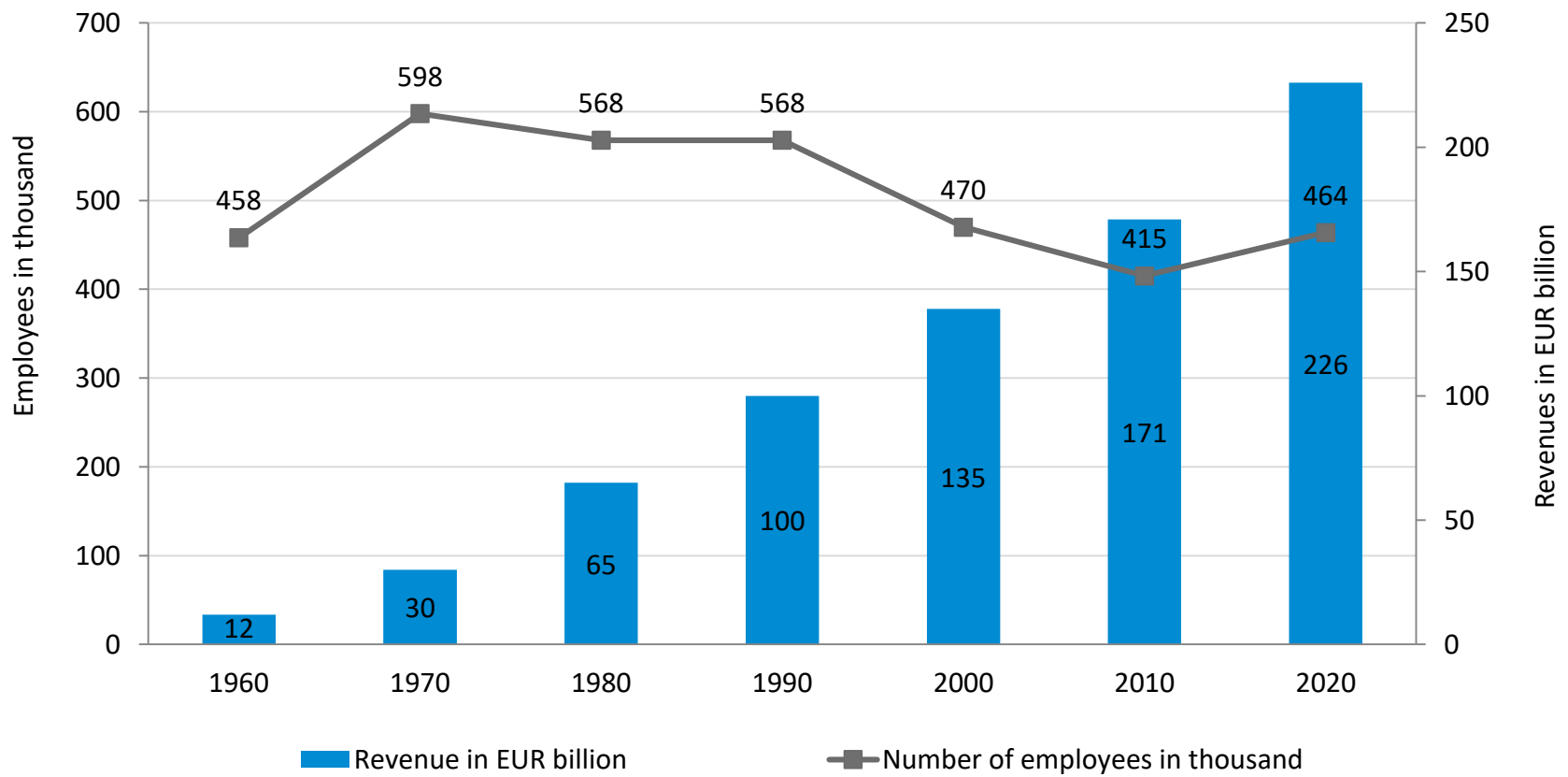
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The History of the German Chemical Industry

Within 60 years, revenues increased by a nominal 5.0 % (real 2.7%) on average a year, while the number of employees has remained constant.

Revenues and Number of Employees of the German Chemical and Pharmaceutical Industry, 1960-2020



Quelle: VCI, *Chemiewirtschaft in Zahlen 2021*

Details: 1960 without Saarland. From 1964 on including West-Berlin; 1970, 1995, and 2008 new Classification. From 1991 Germany reunified.

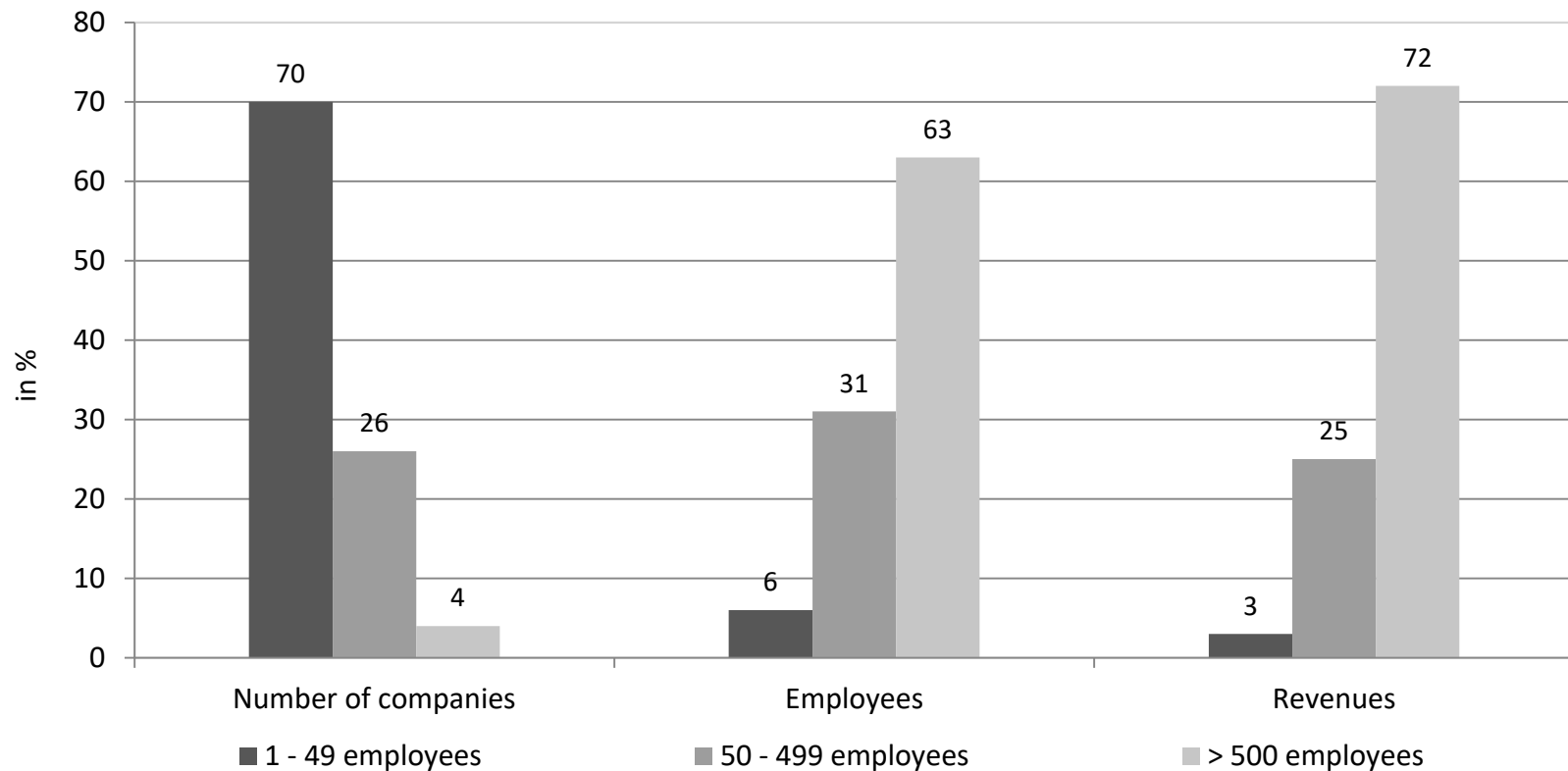
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www.gtai.de

German Chemical Companies Structure

The industry is “dominated” by small companies, whereas the lion’s share of revenues are raised by large corporations.

Number of Chemical Companies, Employees and Revenues by Company Size, 2019

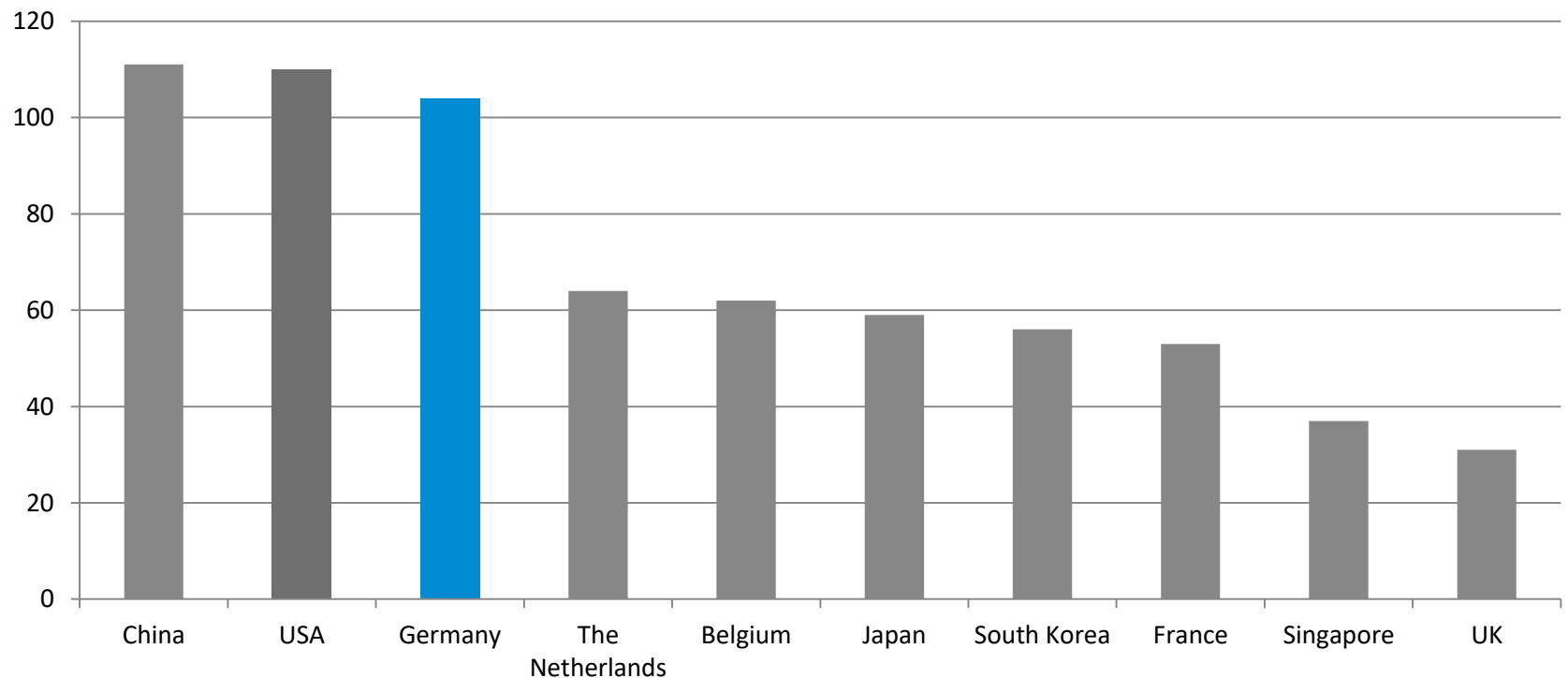


Source: VCI, *Chemiewirtschaft in Zahlen 2022*, Table 17a.

Chemical Exports

In 2020, China has surpassed the US in terms of exports for the first time. Germany still maintains the No. 3 spot globally.

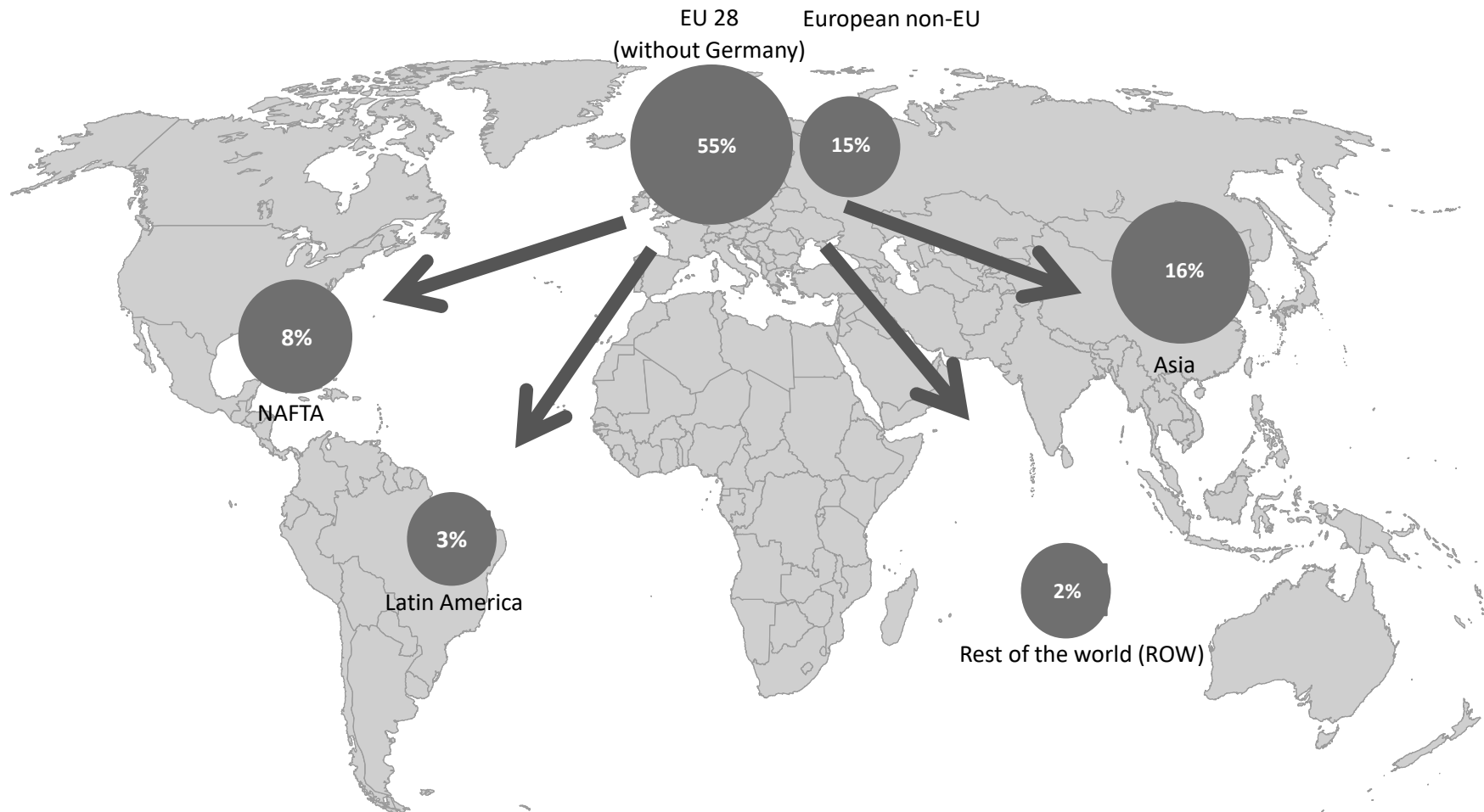
Chemical Exports by Country in EUR billion, 2020



Source: VCI, *Chemiewirtschaft in Zahlen 2022*, Table 60b.

German Chemical Exports

European countries are dominating German Chemical Exports in 2020.

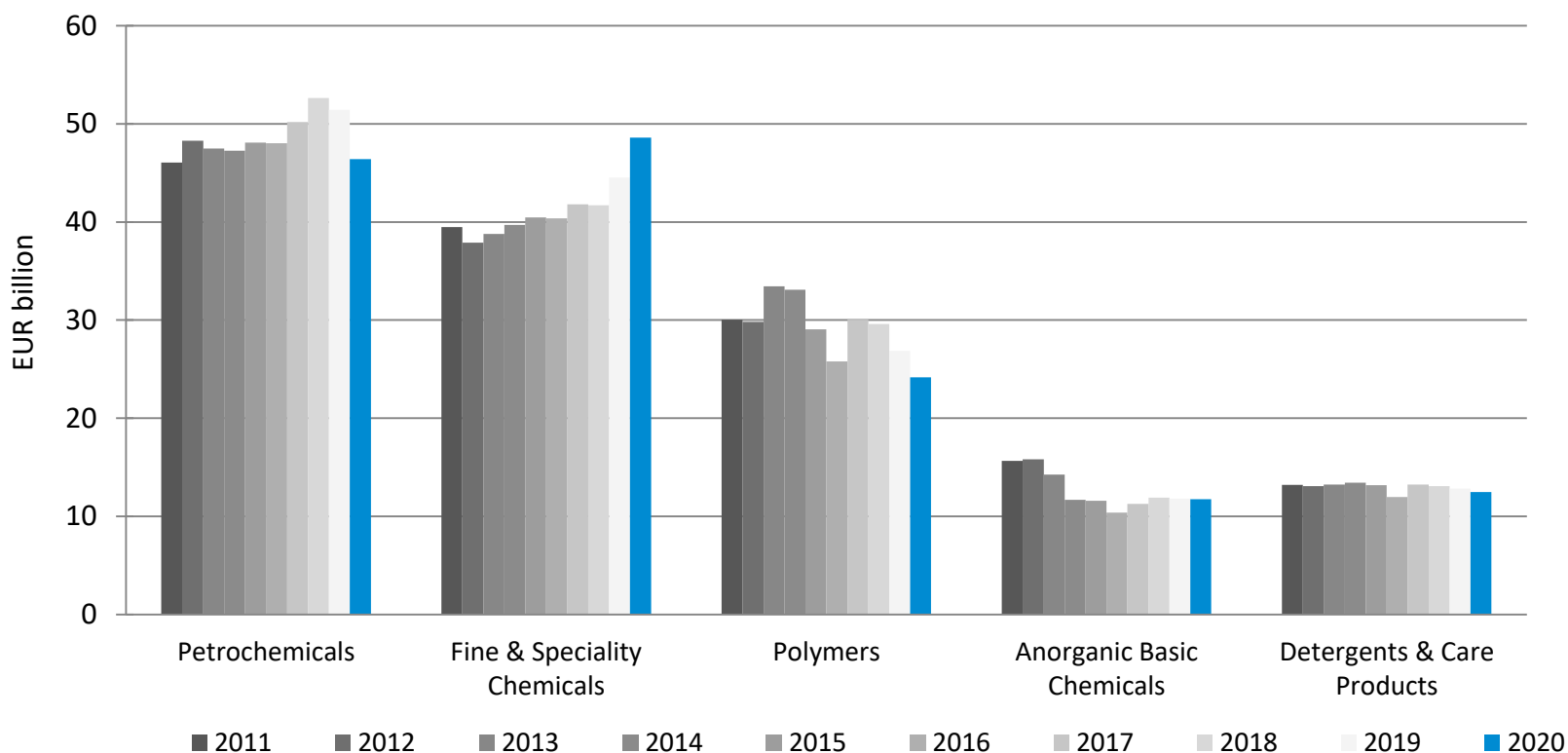


Source: VCI, *Chemiewirtschaft in Zahlen 2022*, Table 41b.

Chemical Market Segmentation

Petrochemicals as well as Fine and Specialty Chemicals continue to constitute the backbone of the German chemical production market.

Chemical Market Segmentation by Revenues in EUR billion, 2011–2020

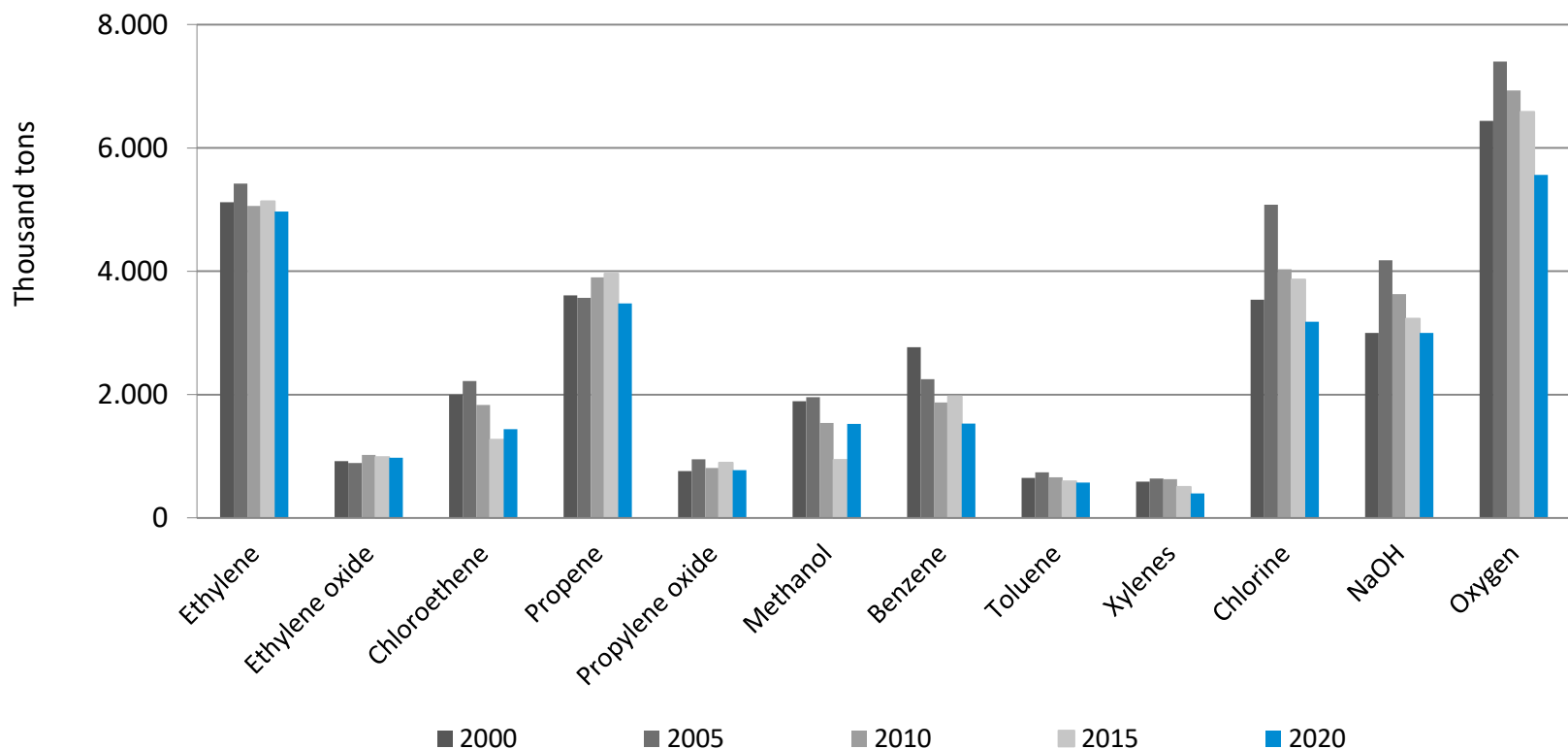


Source: VCI, *Chemiewirtschaft in Zahlen 2022*, Table 14a

German Chemicals Production

Regardless of any economic recession, production volumes of basic chemicals have remained almost unchanged over the past 2 decades.

Production Volumes of Basic Chemicals in Germany, 2000–2020

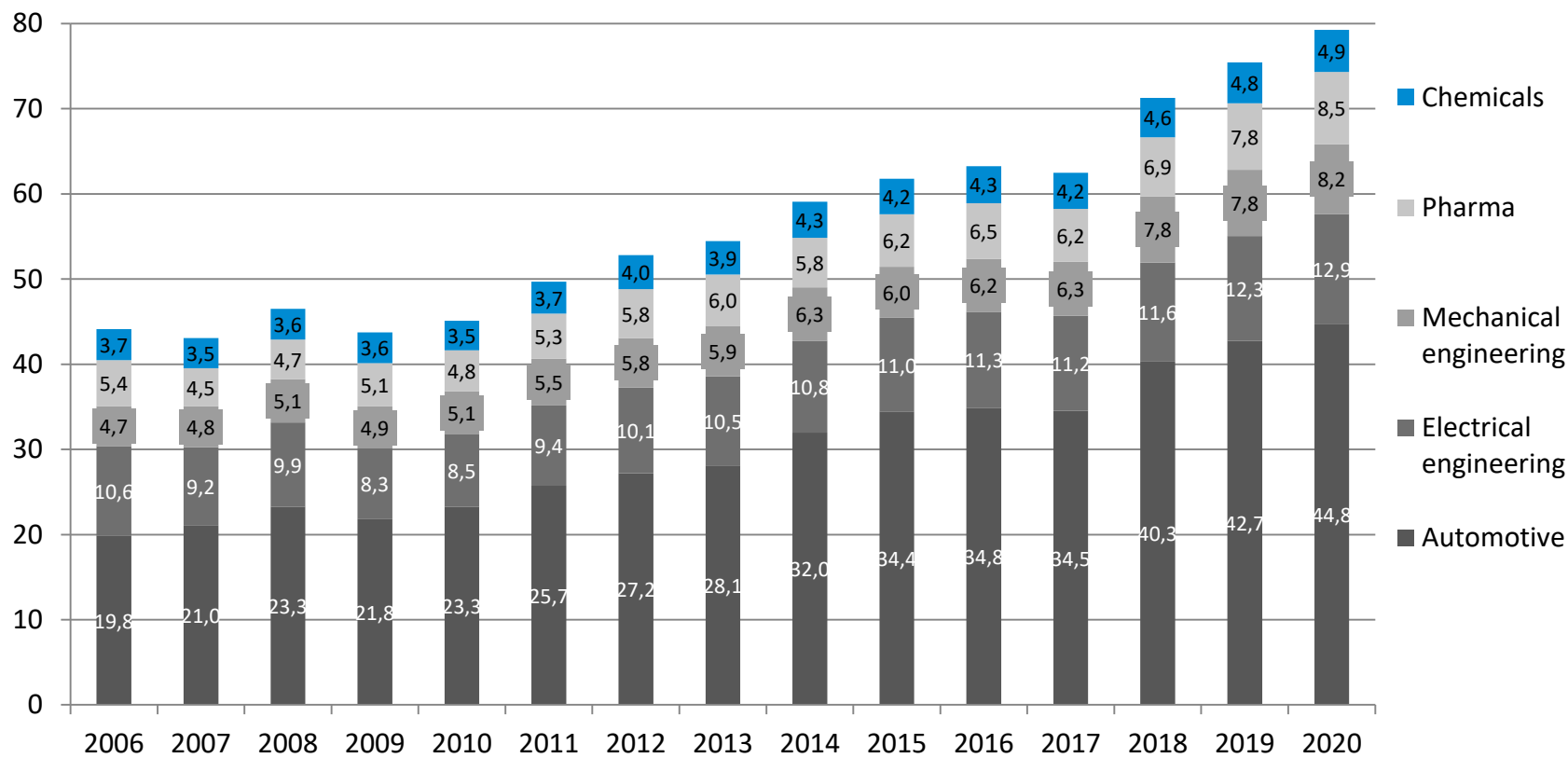


Source: VCI, *Chemiewirtschaft in Zahlen 2022*, Table 4a and 4b; Oxygen in million m³ under normal conditions..

Germany's private R&D spending

German chemical industry R&D expenditure was EUR 4.9 billion in 2020, making the sector the fifth strongest in Germany.

R&D Expenditure by Industry, 2006–2020

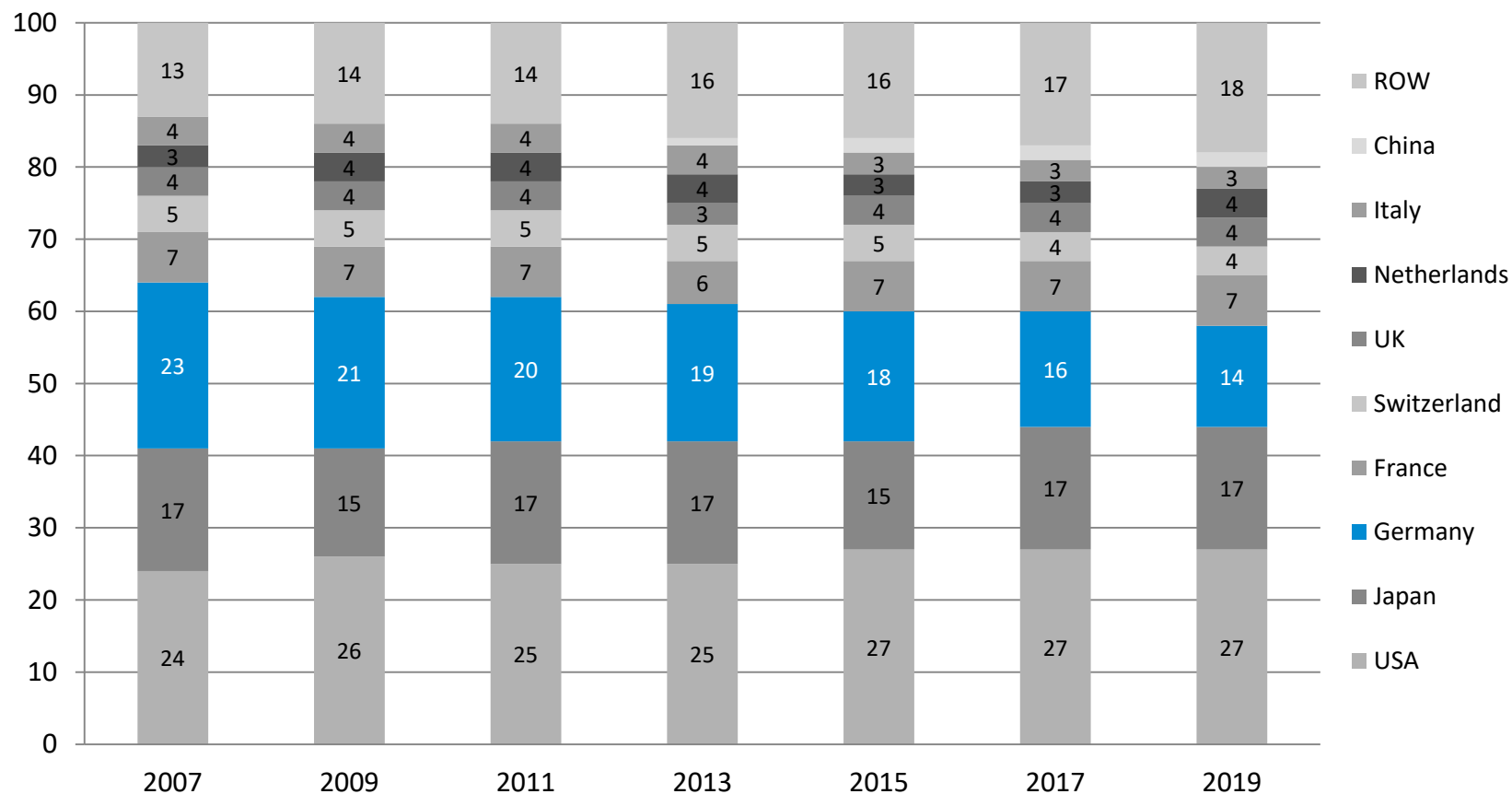


Source: VCI: Chemiewirtschaft in Zahlen 2022, Table 47

Chemical Patents

Germany is number three spot for European chemical patent registrations, only surpassed by the US and Japan.

European Chemical Patents granted by the EPO by Source Country in %, 2007–2019

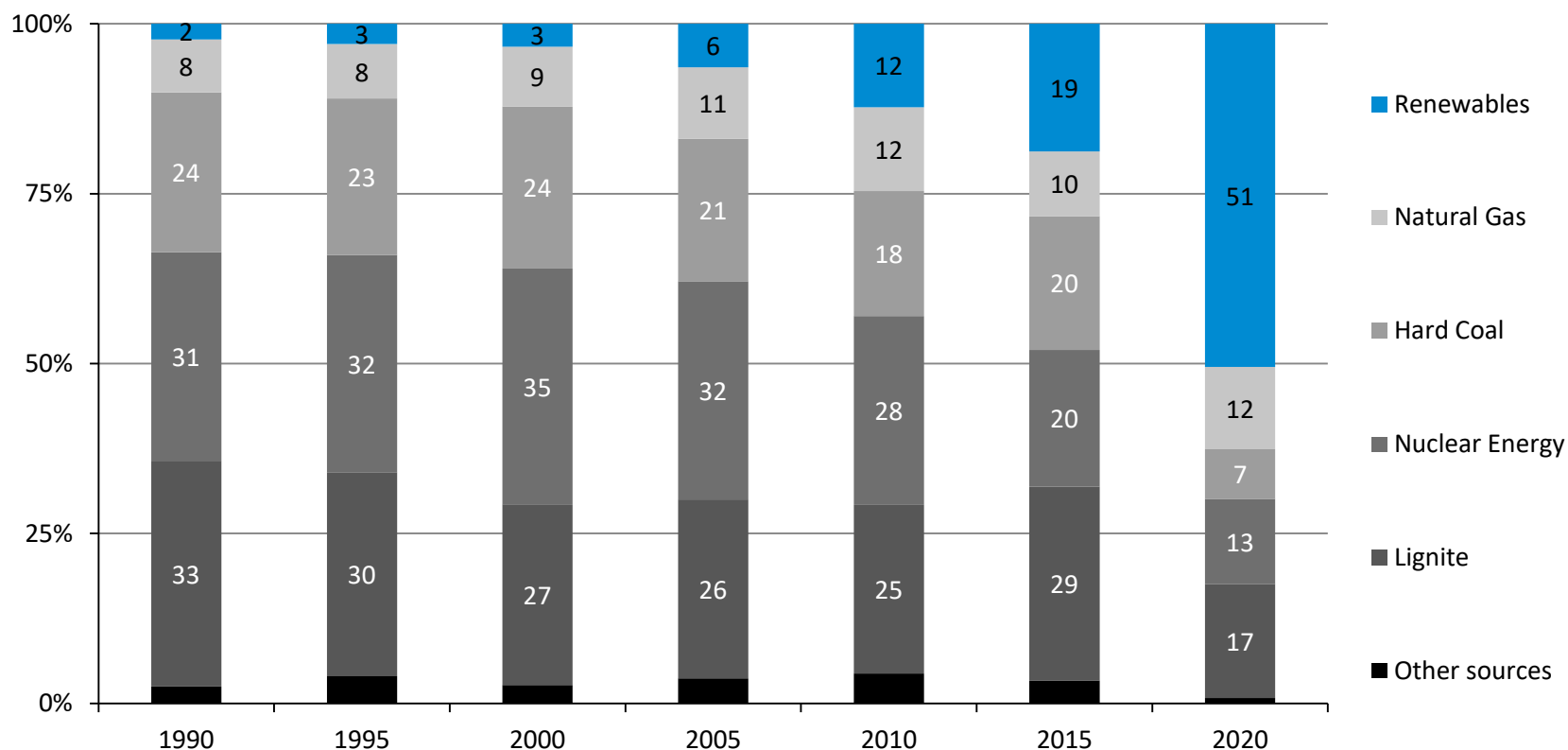


Source: European Patent Office (EPO), 2020

Electricity generation

In the last 30 years Germany got “greener” as Renewables has grown from 2% up to half of the entire electricity production.

Electricity Generation in Germany by Energy Carrier in %, 1990–2020

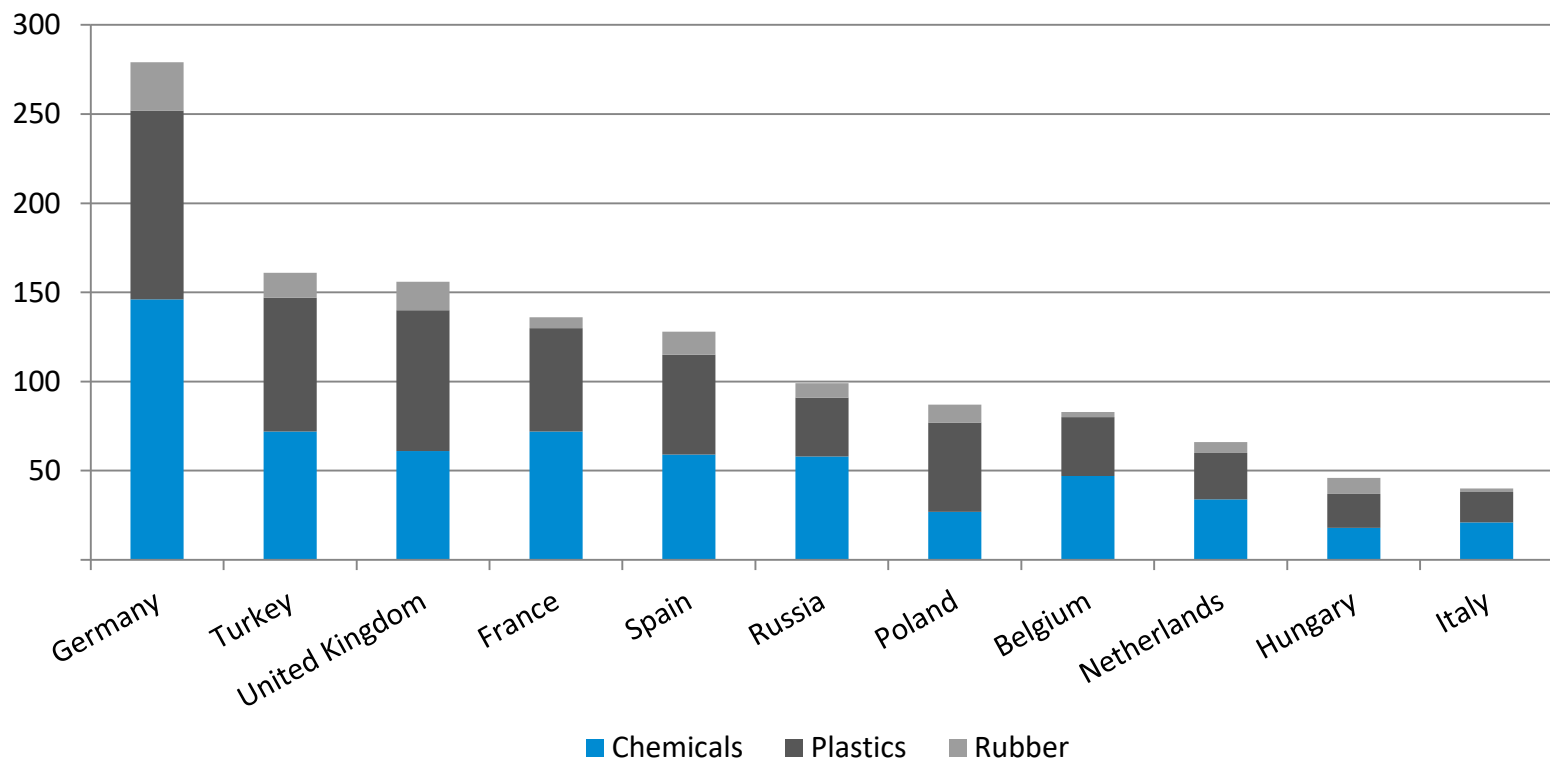


Source: AG Energiebilanzen e.V. (<http://www.ag-energiebilanzen.de/>)

Investments in Europe

Thanks to market attractiveness, most chemical investments in Europe for the period 2016 to 2020 occurred in Germany.

Number of Investments in Europe, 2016–2020



Source: fDi markets (as of February 07, 2022). Total number of investments (1,562): Chemistry (727), Plastics (686), Rubber (156). Graph represents 82% of all investments.

Agenda

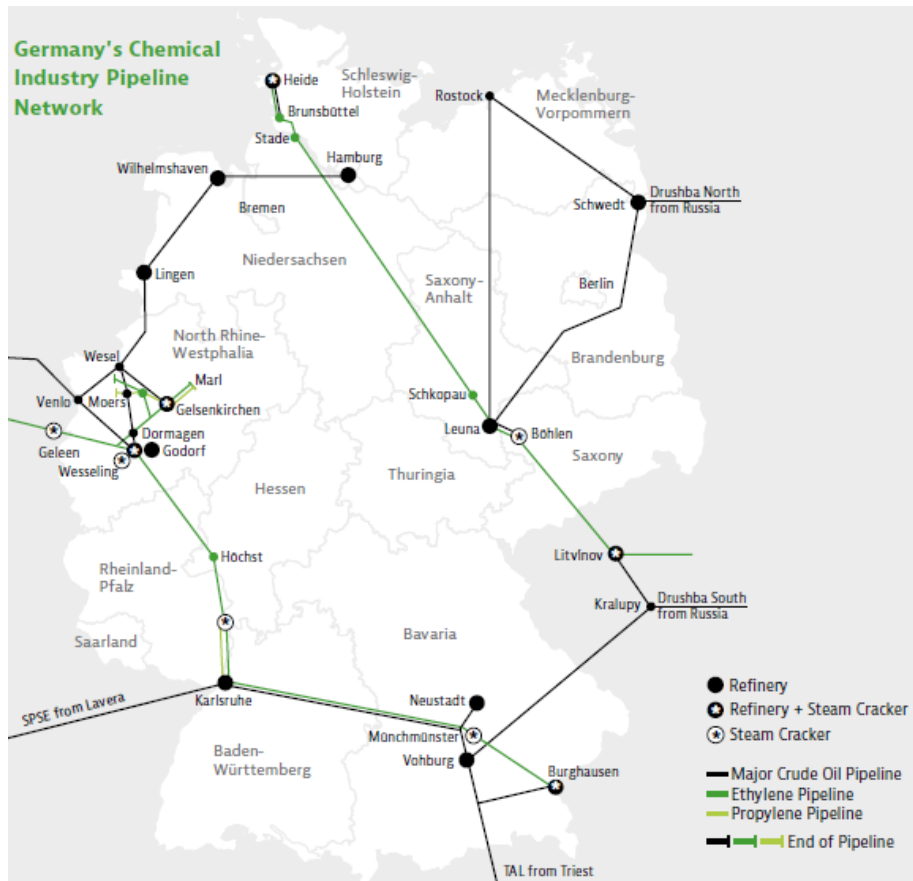
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Raw Materials Supply

Germany's chemical industry regions are well connected to the European pipeline grid.

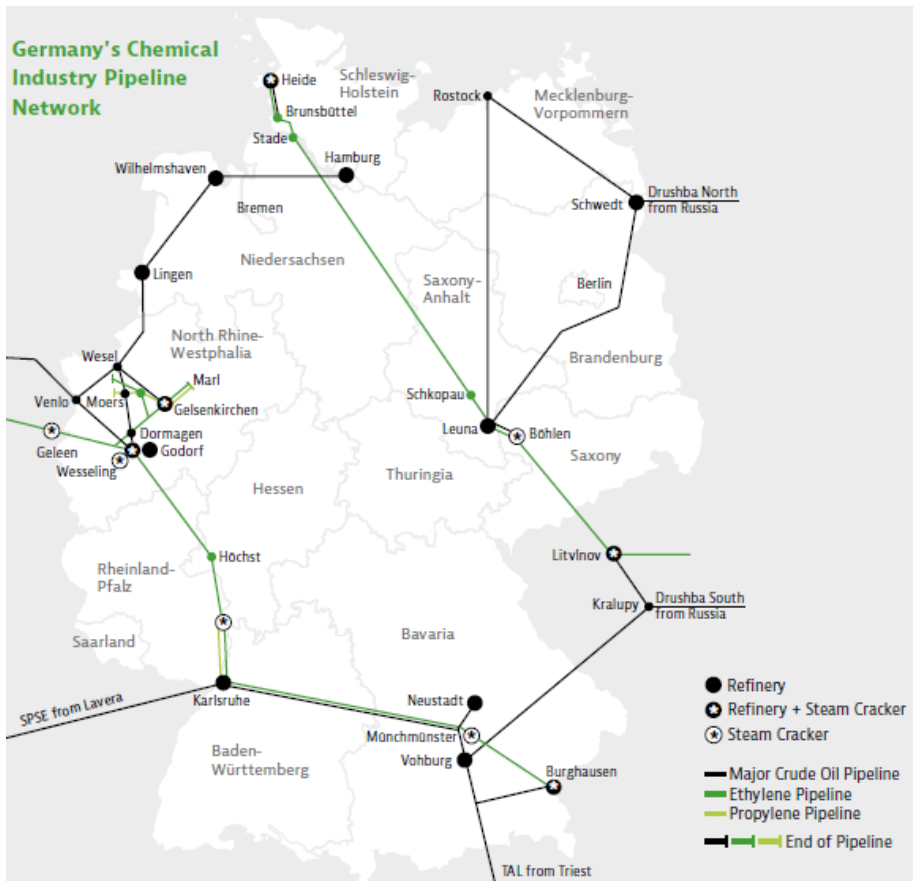


Infrastructure of raw materials supply:

- Crude oil via pipelines from:
 - Russia
 - the Mediterranean Sea
 - France
 - the North Sea
- Crude oil processing via:
 - 14 refineries
 - 8 steam crackers
- Pipelines for:
 - ethylene and propylene
 - natural gas
 - hydrogen
 - carbon monoxide

Phlethora of Logistics

Additionally to the pipeline grid, Europe's longest autobahn, rail and waterway network connects Germany with its nine neighboring states.



Autobahn **12,550 km**

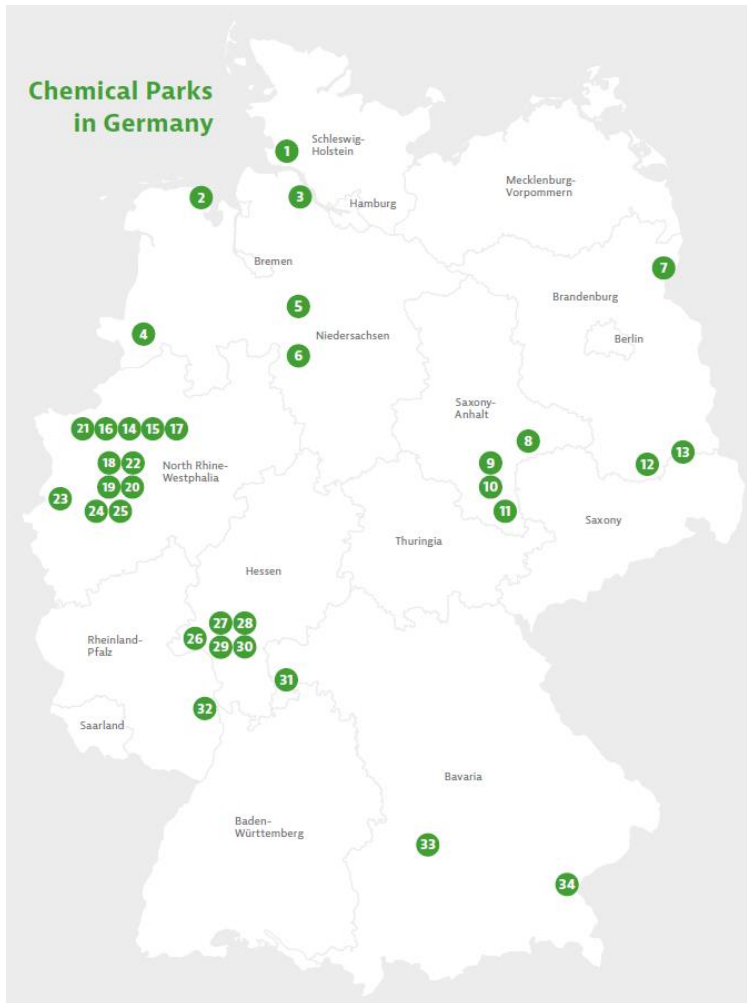
Railways **40,330 km**

Waterways **7,450 km**

Seaports **9**

Major Airports* **12**

Chemical Parks „Plug & Play“ concept

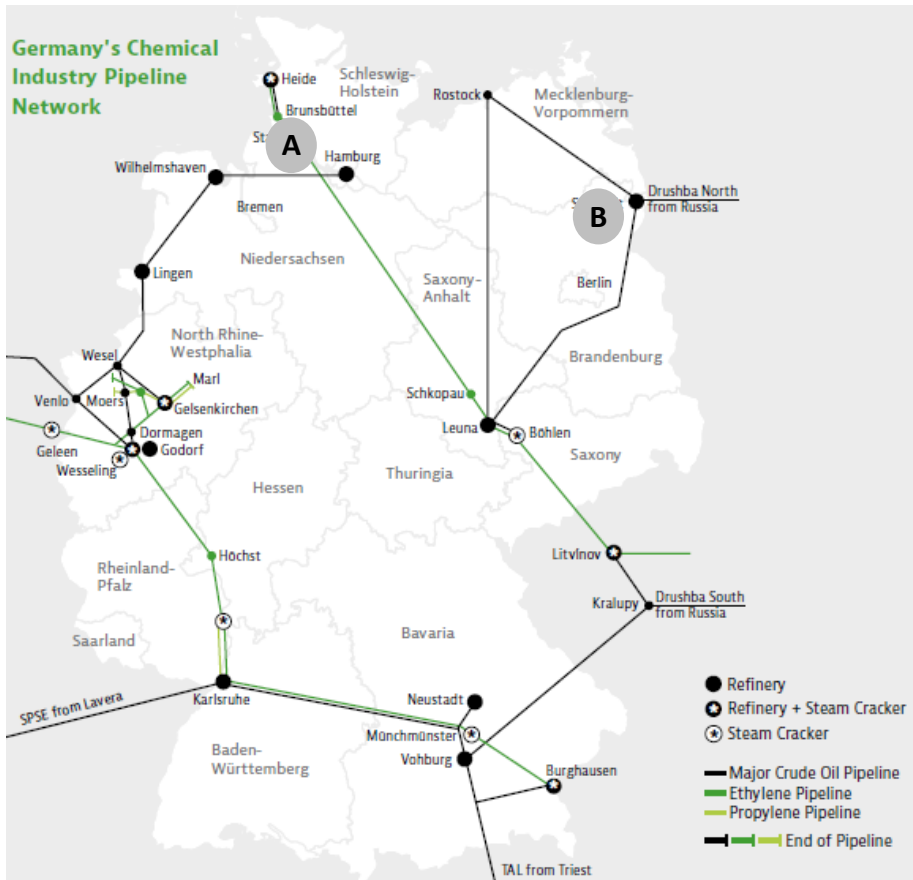


Chemical Parks – Advantages:

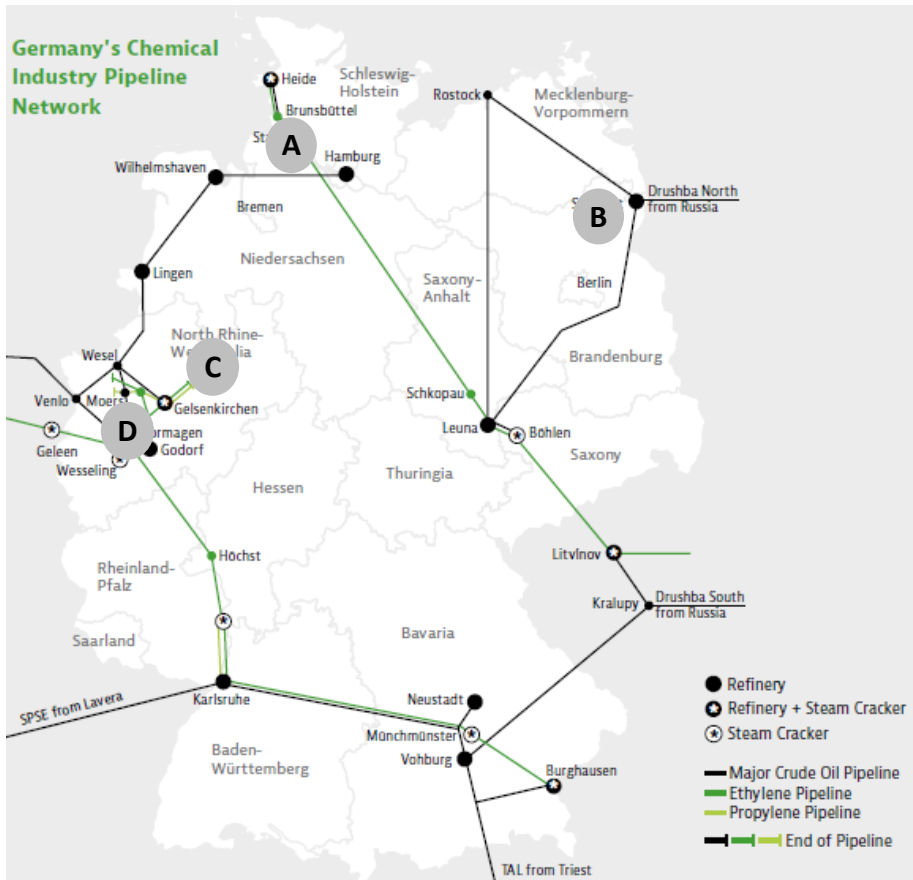
- About 30 chemical parks offer cost-efficient and unique benefits through:
 - excellent infrastructure
 - chemical raw materials via pipelines
 - gases and steam via pipelines
 - secure energy supply
- Site operators offer expertise and services from one source
- Investors choose the services from site operator that suits their business model best

Source: Factsheet „Chemical Parks in Germany“, Germany Trade & Invest, February 2017

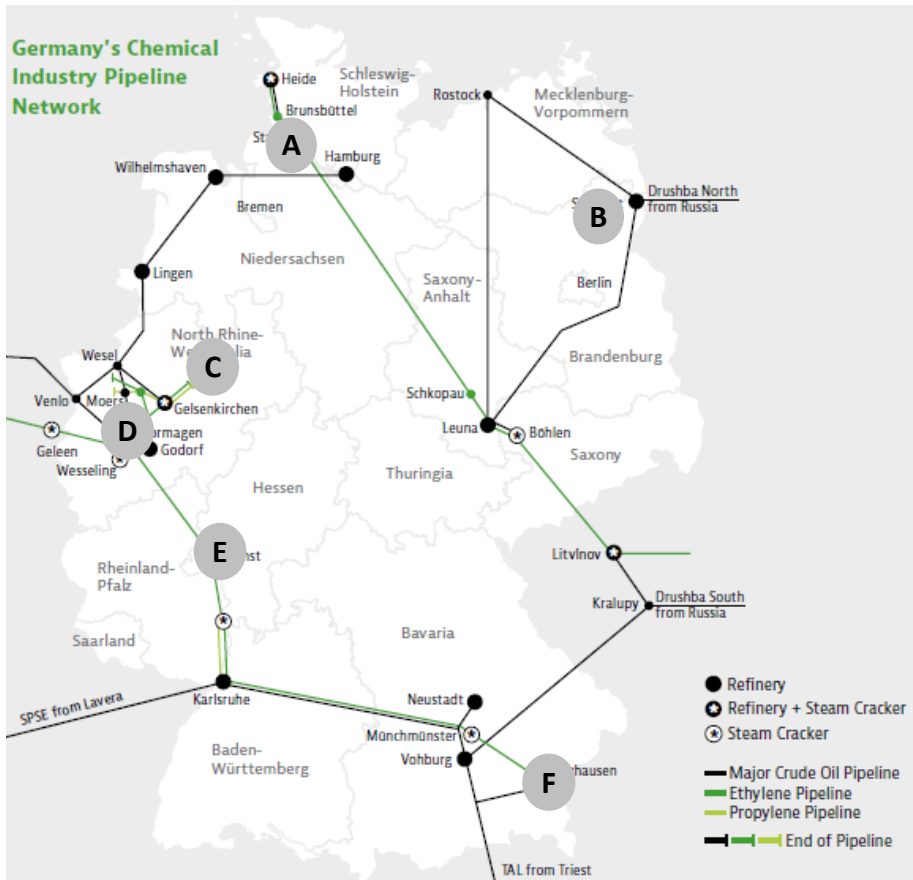
Chemical Parks – Selected Locations



Chemical Parks – Selected Locations



Chemical Parks – Selected Locations



Germany Trade & Invest

Contact

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Foreign Trade and Inward Investment Promotion Agency

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