GTAI GERMANY TRADE & INVEST

MARKETS

GERMANY

Insights into Europe's Biggest Economy 2 / 25

CLOUD KINGS IN WHITE SPACES

Cloud computing is the new standard, and data sovereignty offers the next level of security. → *Page 4*

BIOTECH BREAKTHROUGHS

Investment in German biotech is surging, with the focus now on finding cures for cancer.

Page 10

SPACE RACE

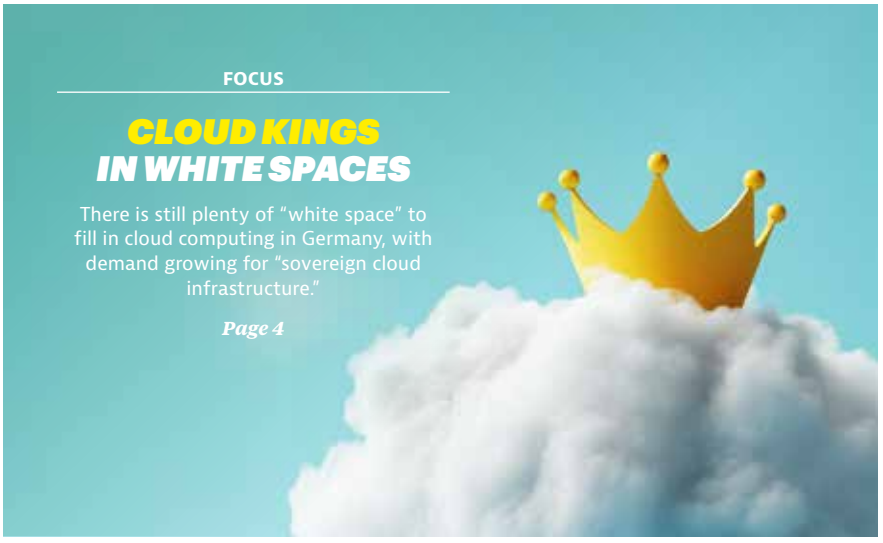
The space industry is evolving rapidly in Europe — and Germany is at the forefront of innovation.

Page 12

AI-assisted healthcare

Germany's electronic patient records system is a huge step forward.

Page 8



FOCUS

CLOUD KINGS IN WHITE SPACES

There is still plenty of "white space" to fill in cloud computing in Germany, with demand growing for "sovereign cloud infrastructure."

Page 4

SPACE INDUSTRY

Race to Space

Germany is at the heart of Europe's rapidly evolving space industry, particularly commercial satellite solutions.

Page 12

MANUFACTURING

Getting to Zero

The EU's Net-Zero Industry Act has stimulated growth in green technologies across Europe, especially in its biggest market: Germany.

Page 18

YOUR PARTNER IN GERMANY

Expanding in and to Germany with GTAI

Germany Trade & Invest's Managing Director Achim Hartig throws a spotlight on the many ways GTAI supports international businesses in gaining a foothold in Europe's biggest market.

Page 24

MORE ARTICLES IN THIS ISSUE:

Publisher: Germany Trade & Invest Gesellschaft für Außenwirtschaft und Standortmarketing mbH, Friedrichstraße 60, 10117 Berlin, T. +49 30 200 099-0, office@gtai.de, www.gtai.com

Excecutive Board: Julia Braune, Chairwoman/CEO, Dr. Robert Hermann, COO

Director Corporate Communications: Andreas Bilfinger

Managing and Content Editor: Eva Forinyak

Editor: Jefferson Chase

Editorial Team Kammann Rossi/wortwert: Imogen O'Rorke, Christoph Hus, Jürgen Jehle

Design and Layout: Arne Büdts, Verena Matl

Print: Kern GmbH, 66450 Bexbach, www.kerndruck.de

Circulation: 2,600

Distribution: *Markets Germany* is distributed solely by the publisher all over the world.

Notes: © Germany Trade & Invest, June 2025

All information provided by Germany Trade & Invest has been gathered with the utmost care. We assume no liability, however, for the accuracy of the information provided. Articles published under specific names do not necessarily reflect the opinion of the publisher. No reprints may be made without the prior consent of the publisher. Unless specified otherwise, the copyright for pictures is held by Germany Trade & Invest.

Order number: 21452

Cover: Photo: Kammann Rossi/ Verena Matl/generated with AI

Federal Ministry for Economic Affairs and Energy

on the basis of a decision by the German Bundestag

Photo: Illing & Vossbeck Fotografie

"One of the principal challenges facing Germany and Europe is how to achieve greater autonomy."

Dear Reader,

Whatever you may think about 2025 so far, it certainly hasn't been boring. The United States has a new government, and so does Germany. The conservatives under Chancellor Friedrich Merz now lead Europe's largest economy in coalition with the Social Democrats. And that has brought a different set of priorities to government (even if some might sound familiar).

As Merz made clear when announcing the coalition agreement, one of the principal challenges facing Europe and Germany in 2025 is how to achieve greater autonomy — in a variety of areas from the economy to global relations to defense.

Ahead of the change of guard, Germany's parliament enacted constitutional changes to free up a half-trillion euros in credit for infrastructure, economic stimulus and climate protection. Defense spending has been exempted from state debt limits, and regional and local governments in Germany have greater leeway.

It is fitting then that our top story concerns European sovereignty — in the domain of cloud computing. Calls for a cloud infrastructure independent of the US and China have been around for some time — and some progress has been made, although there is much more action to come.

Ironically, developing European autonomy is an international effort, and many companies outside Germany are already benefiting. The shift in German and EU policy remains global and international, not inward looking. In this spirit, I invite you to delve into the latest issue of *Markets Germany*.

Julia Braune, *Chairwoman & CEO*
Email: invest@gtai.de

ONE TO WATCH

Photo: Meshcapade

Naureen Mahmood's start-up features a solution that creates realistic human avatars from various data sources like images and videos.

NAUREEN MAHMOOD: *COFOUNDER AND CEO MESHCAPADE*

Naureen Mahmood has lived in the southwest German city of Tübingen for many years, but she still sounds excited by it: "It's amazing how much great technology is coming out of this small city," she says. Mahmood is CEO of the start-up Meshcapade, which creates realistic human avatars from various data sources like images and videos. "From a simple picture you can create a 3D version of yourself in motion," she explains. Today, seven of the ten largest NASDAQ companies, including Microsoft and Meta, use Meshcapade technology. The apparel giant Zalando, for example, uses it to show customers how clothing will look on different body types and how it changes shape when people move.

Mahmood grew up in a small town in Pakistan. "Back then, my only contact with machines and robots was in science fiction films and series. I was driven by this idea of people interacting with robots and machines that can understand human motion and behavior." As an adult, she moved to Germany to work as a research engineer at the Max Planck Institute. Mahmood and two research colleagues, Talha Zaman and Michael Black, developed the Meshcapade technology, then went on to found their business in Tübingen, southwest Germany, in 2018. The region is Europe's largest and foremost center of excellence in AI and modern robotics. "Germany has done a fantastic job at attracting the world's best to come and do research here," she says. "The freedom that researchers enjoy in Germany and the kind of support they receive are, to be honest, unprecedented."

Quick facts

NAME	Naureen Mahmood
JOB TITLE	Cofounder & CEO
BORN AND RAISED IN	Pakistan
QUALIFICATION	B. Sc. hons., Computer Science, Lahore University of Management Sciences; M. S., Visualization Sciences, Texas A&M University
PRIOR EXPERIENCE	Research and development
COMPANY NAME	Meshcapade
LINK	meshcapade.com
MAIN LOCATIONS	Tübingen (Germany)
INDUSTRY	Technology
STAFF	26
CLIENT BASE	Entertainment/gaming, competitive sports, fashion, medicine/health care

CLOUD KINGS IN WHITE SPACES

The market for "sovereign cloud infrastructure" is growing dynamically in Germany and the rest of Europe, offering customers trust and assurance in addition to compliance with EU regulation. There is still plenty of opportunity for international businesses to fill the gaps.

81%

Share of companies in Germany that used cloud computing in 2024

Source: Bitkom

26%

Share of companies in Germany that used a "sovereign cloud" in 2024

Source: Bitkom

SOVEREIGN CLOUD INFRASTRUCTURE offers data assurance and trust, ensures compliance (for example with EU regulation) and provides greater autonomy from the U.S. and China.

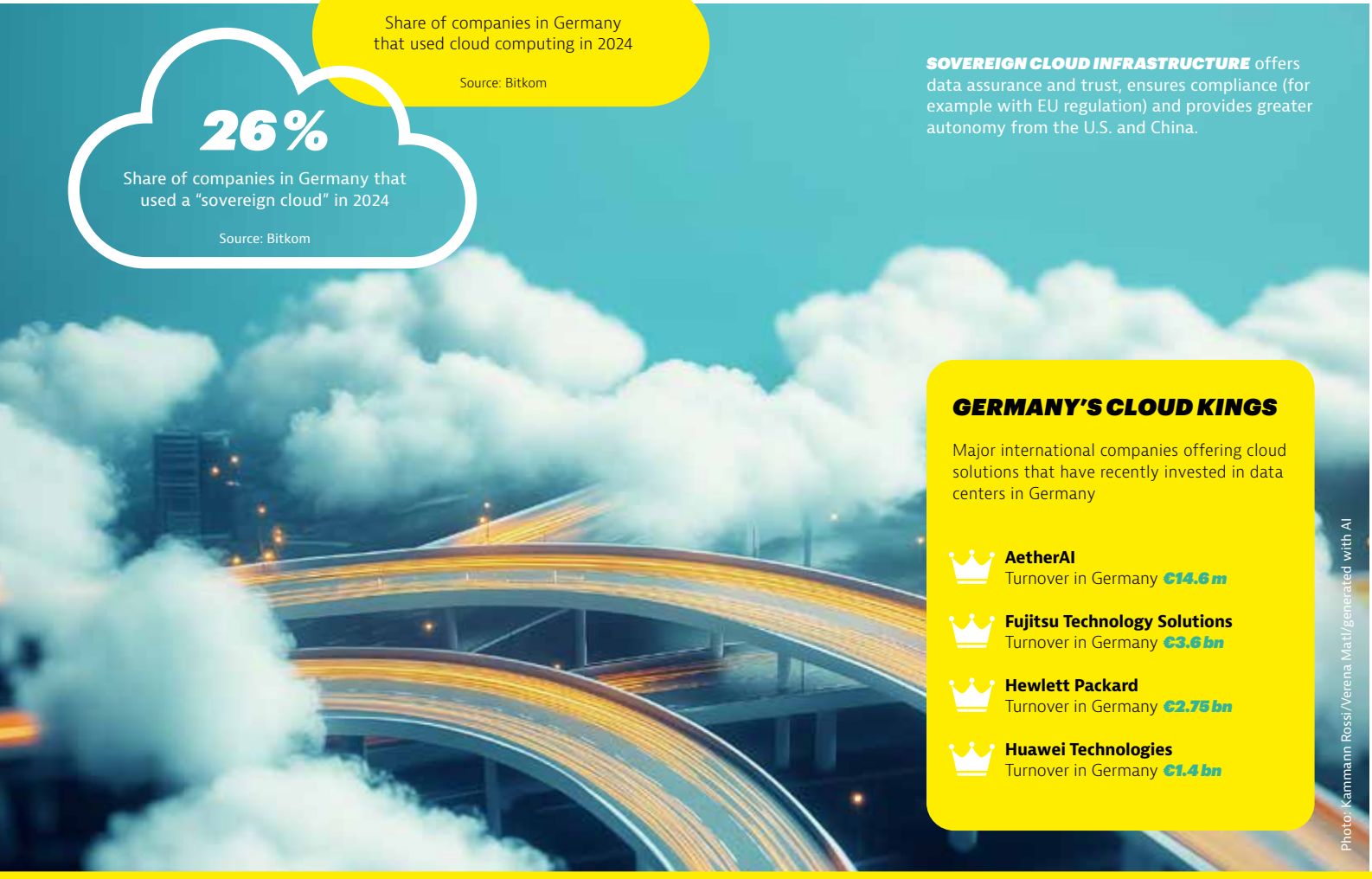


Photo: Kammann Rossi/Verena Matl/generated with AI

GERMANY'S CLOUD KINGS

Major international companies offering cloud solutions that have recently invested in data centers in Germany

- **AetherAI**
  Turnover in Germany *€14.6 m*
- **Fujitsu Technology Solutions**
  Turnover in Germany *€3.6 bn*
- **Hewlett Packard**
  Turnover in Germany *€2.75 bn*
- **Huawei Technologies**
  Turnover in Germany *€1.4 bn*

The European Union's strict data protection rules have made "sovereignty" an imperative in cloud computing services. But far from stunting innovation, these rules have created promising market opportunities for international companies at the core of the European computing market.

The dizzying pace of digitalization has created a multifaceted puzzle for businesses faced with questions on all sides: How to make that vital leap into cloud computing while ensuring that their customers can trust them with their data. At the same time, how to remain compliant with EU regulation (to ensure customers maintain control over that data) while remaining internationally competitive?

"Sovereign" cloud infrastructure offers solutions to these complex problems. Sovereign entities are isolated cloud systems that offer the full range of state-of-the-art security features — encryption, key control and monitoring — while complying with the local laws where the cloud operates. Crucially, sovereign clouds also make sure the data physically stays within defined borders, ensuring that foreign governments or other actors cannot gain access to it.

Germany's business community is only just beginning to embrace these kinds of solutions — but with an enhanced sense of urgency. Despite a slow start, today cloud computing in Europe's largest economy is as indispensable to business operations as it is everywhere else. According to a 2024 study by A1 Digital, some 84 percent of German companies use the cloud, while 70 percent say that exposure to foreign laws is a key concern with their current cloud systems. Yet only 26 percent of those companies use a "sovereign cloud." That's a lot of growth potential.

"Culture is in a constant state of flux," says Isabel da Silva Matos, GTAI specialist for smart technology and IT solutions. "Germany still has some catching up to do when it comes to digitalization, but that is precisely what offers huge opportunities for many international IT companies in the German market."

Filling the cyber gaps

Many companies are already exploring those opportunities. Exoscale is one of them: the Swiss company builds infrastructure to help European companies develop what it calls "cloud native" applications — apps and services that function on remote cloud servers. The company has been expanding steadily since its launch in 2011 and now offers products in Austria, Bulgaria and (for the last seven years) Germany — all thanks to its two major "cloud zones" in Frankfurt and Munich, which guarantee it does not move data and services out of the country.

According to Exoscale CEO Mathias Nöbauer, there were two obvious reasons why Germany was the right place to grow from. "Number 1: Germany is a big market, and since we already operate in Austria and Switzerland, it's a no-brainer for us to expand our activities to Germany," he says. "Number 2: There is a lot of white space."

"White space" is tech-speak for what used to be known as a good old gap in the market. Cautious by nature, German companies are only now beginning to adopt full cloud solutions as a basis for their operations. And while there is still some hesitancy about the idea, as Nöbauer puts it, "it's picking up steadily with the advent of European cloud service providers."

"Cloud adoption is slow in the entire German-speaking market, but where there is more white space, there are more opportunities, especially for foreign companies," he points out. "As long as you can deliver quality and a high level of service, you are in a very good position in this market."

THE BOTTOM LINE

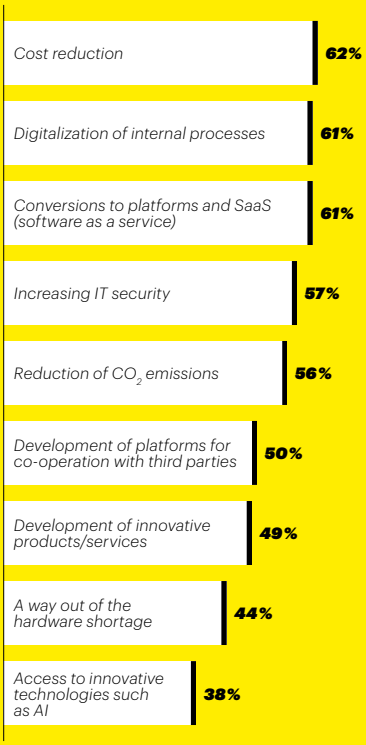
German companies are becoming more and more dependent on cloud computing solutions, and "sovereign cloud infrastructure" is an area that Germany excels in. There is still abundant "white space" for international players.

"As long as you can deliver quality and a high level of service, you are in a very good position in this market."

MATHIAS NÖBAUER,
CEO of Exoscale

MAIN DRIVERS OF THE CLOUD

Reasons why companies in Germany use cloud services (2024, multiple answers possible)



Source: Bitkom

Photo: NTT Data

OLIVER KÖTH, CTO of the Japanese cloud king NTT DATA, believes independent infrastructure has gone from being "a theoretical benefit" to "a tangible one" in the current climate of geopolitical uncertainty and fragmentation.

FDI PERSPECTIVE: NTT DATA IN DACH

Japanese company NTT DATA has been providing IT solutions in Germany since 2012 and offers businesses in the whole DACH region a unique range of sovereign services, from data centers to AI models.

But only recently has the company's focus on offering independent infrastructure turned a theoretical benefit into a tangible one. "Current geopolitical developments show that this has now developed into a practical advantage," says NTT DATA CTO Oliver Köth. "It is also clear that many major investment projects in the near future will have a distinctly regional, i.e. European, character."

Indeed, in the area of industrial data exchange, there is a particular need to create European data spaces that comply with EU regulation and privacy requirements as well as allowing independence from US providers. "Germany is one of the leading economies worldwide and it is foreseeable that major investments are planned," says Köth. "For these investments to reach their full potential, they need a solid IT infrastructure. NTT DATA is the ideal partner for this."

50+
countries of operation

15,000+
employees worldwide

€1.61 bn
turnover in 2023/2024

Nice or need to have?

To provide a "high level of service" in Germany these days means not only data privacy and compliance with European legislation but also independence from US and Chinese clouds.

In years gone by, a sovereign cloud resource might have been filed under "nice to have" rather than "need to have." It was not absolutely necessary for maintaining a competitive edge. After all, in a globalized world of free trade, countries are potential partners rather than competitors — so does it really matter where your cloud is? Now, with the geopolitical situation rapidly shifting toward protectionism, sovereign clouds are becoming more important than ever.

When Exoscale was starting out, recalls Nöbauer, Europe simply didn't have enough cloud providers. "At the time, about ten years ago, there were basically only US cloud providers, like Amazon and Microsoft, and maybe one or two Chinese competitors." Since then, the market has become much more diverse, and European contenders can now compete with their rivals in both price and performance. "The huge difference is that as a European company we can fully comply with European legislation and regulations," said Nöbauer. "This has become an even more decisive factor for our customers." Exoscale is not covered by the US CLOUD Act, and while it caters to companies of all sizes, it has found that its product is particularly appealing to public sector industries like healthcare. Nöbauer has registered an increasing interest by the German government in sovereign clouds because it is so important that data stays inside the country. "I would say the number and size of those opportunities are increasing," he says.

European values around the world

Europe has established its own sovereign cloud infrastructure through initiatives like Gaia-X, a federated system linking cloud service providers and users that's designed to drive the burgeoning European data economy. But it is not aimed at European companies alone. Gaia-X was founded in Brussels in 2021 — in

part thanks to an initiative of the German Ministry for Economic Affairs and Climate Action — and while its original members were 22 French and German organizations, including multinationals like Siemens and BMW, the network now has more than 250 members from all over the world.

"Gaia-X provides spaces to define rules and manage data based on European values, rather than another company's rules," says Gaia-X CEO Ulrich Ahle. "The cloud services market is dominated by non-European companies, the so-called hyper-scalers, which have their own rules. We are becoming more and more aware that our businesses, as well as our private lives, will gravitate more and more around data," Ahle adds. "Data is becoming more and more valuable, and we provide an instrument not only to share data, but also for creators to benefit from its value."

Successive German governments have shown a commitment to investing in the creation of free and safe "data spaces" like those Gaia-X provides. These spaces allow companies to share data with their suppliers around the world, making data management much more efficient. Gaia-X is useful both for companies with domestic user bases — like public sector companies that need to ringfence data — as well as multinationals that serve global markets. "For them it is of the utmost importance that the data is available on the global scale," says CEO Ulrich Ahle. To address demand, Gaia-X has now begun creating data hubs outside Europe, for example in South Korea. "It is important that we win organizations outside Europe to support the creation of data spaces based on a federated cloud infrastructure," Ahle explains. "We are also able to implement rules based on non-European legislation."

For businesses everywhere, the benefits of cloud computing are clear. It offers agility, cost savings and future proofing. But in a rapidly changing world, only sovereign clouds offer total assurance.

Want to find out more about investing in sovereign clouds?

ONLINE
www.gtai.com/digital-economy

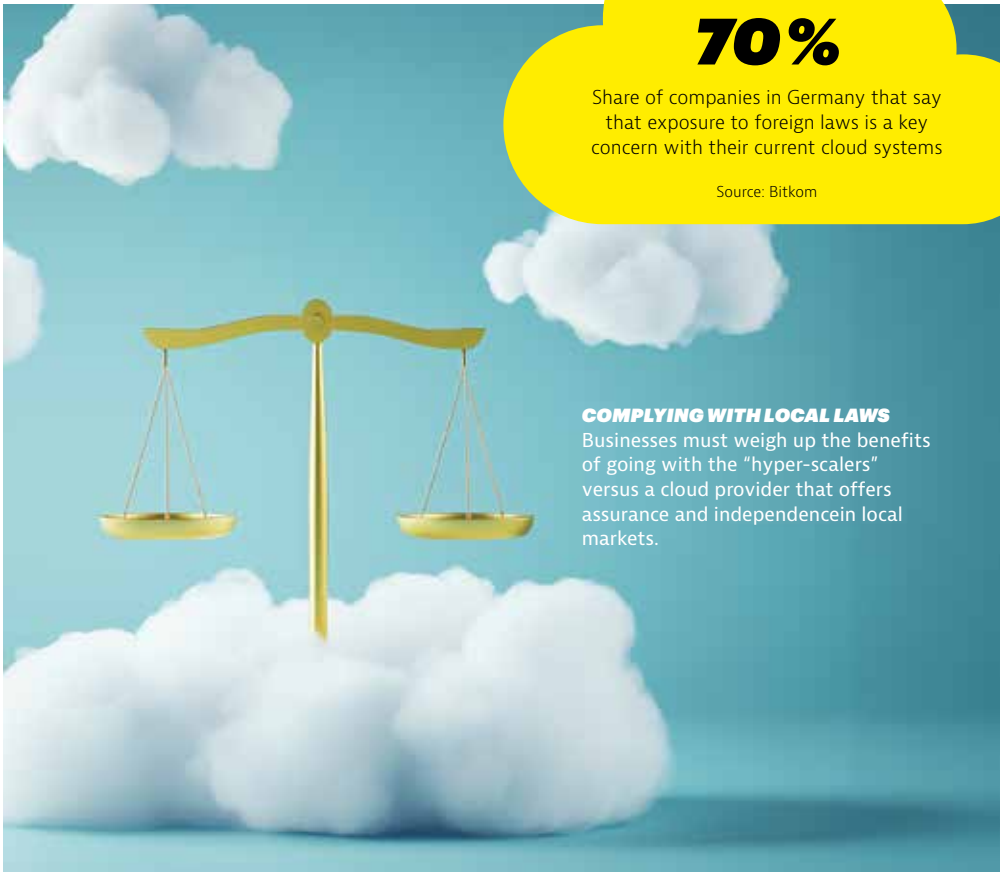
CONTACT
isabel.matos@gtai.de
GTAI expert for data center

FINDING A COMPETITIVE EDGE IN THE CLOUD

Criteria for selecting a cloud provider (2024, companies in Germany)

- Trust in IT security, data protection and compliance
- Performance and stability
- Option for data encryption
- Sustainability, for example, climate neutrality
- Interoperability
- Data centers in Germany or the EU
- Trusted country of origin of the cloud provider
- Innovative strength, such as access to the latest solutions
- Openness, for example through open source
- Low costs
- Conformity with Gaia-X
- Worldwide availability

Source: Bitkom



70%

Share of companies in Germany that say that exposure to foreign laws is a key concern with their current cloud systems

Source: Bitkom

COMPLYING WITH LOCAL LAWS
Businesses must weigh up the benefits of going with the "hyper-scalers" versus a cloud provider that offers assurance and independencein local markets.

Photo: Kammann Rossi/Verena Matl/generated with AI

SAVING LIVES **WITH DATA**

Germany is granting researchers access to health data from up to 75 million patients. It's a vast repository of potentially vital information for healthcare companies developing new forms of prevention, diagnosis and treatment.

Germany's electronic patient record (ePA) will be made available for medical research in anonymized form — an invaluable resource for healthcare companies leveraging AI.

Photo: Adobe Stock/Curioso.Photography

71%

of Germans want to use electronic patient records

Source: Bitkom e.V.

When a patient is diagnosed with lung cancer, their treatment options are limited: chemotherapy, radiation or surgery. But thanks to technological advancements in healthcare, an alternative approach could soon be available: a simple injection designed to help the body fight cancer.

Researchers at NEC Laboratories Europe in Heidelberg in Southwest Germany are working hard to make that scenario a reality by leveraging artificial intelligence (AI) to pioneer therapeutic cancer vaccines. Their AI-powered model is expanding on research into the immune system's ability to detect and combat tumor cells. To ensure the model makes accurate predictions, however, vast amounts of data are needed. "Patient data is the foundation of our research," explains Dr. Saverio Niccolini, General Manager and Research Director for Data Science and System Platforms at NEC Laboratories Europe. Volume is critical: "The more data we have, the more precise the AI becomes. This reduces errors and ensures reliable predictions across different patient groups."

In other words, data can save lives. To support such innovations, the German government ratified two new measures to support the creation of a comprehensive health data pool. "The new regulations make Germany an even more attractive hub for health research and

THE BOTTOM LINE

Germany reached a watershed in digital healthcare in early 2025 with the introduction of the electronic patient record for approximately 75 million people. This comprehensive medical dataset will advance research and innovation for years to come.

open up significant business opportunities, particularly in AI-driven applications," says Julia Pietsch, Senior Manager for Chemicals & Healthcare at Germany Trade & Invest (GTAI). She anticipates a wellspring of interest from international companies looking to capitalize on these developments.

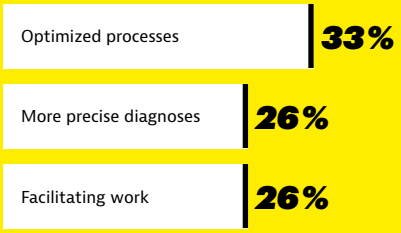
A vast resource

The most significant development was the introduction of the electronic patient record (ePA) in early 2025. This electronic patient record will be automatically assigned to everyone insured through Germany's statutory health insurance system — approximately 75 million people — unless they opt out. The ePA will store health data, including diagnoses, treatments, and prescriptions, which will be made available for medical research in anonymized form.

This vast corpus of digital health records will be an invaluable resource for medical companies leveraging AI. Dr. Johannes Winter, managing director of the CAIMed research center, says, "I'm not aware of any other systematically recorded and cleaned health dataset of this scale that can be used for AI-based research in a legally compliant and ethically sound manner." AI is playing an increasingly central role in accelerating drug and therapy development, assisting doctors in diagnostics and surgery, and enhancing patient care through intelligent wearables. But the models must be trained on extensive datasets to function reliably.

MULTIPLE USES OF AI IN MEDICINE

What doctors in Germany expect from the use of AI in medicine (year 2024)



Source: Interrogare, 2024

Streamlined access

Beginning in mid-2025, authorized entities will be able to access ePA data through a dedicated research data center. "Until now, access was mostly limited to health insurers and public research institutions. Now, industry players will also be able to apply," explains Natalie Gladkov from the German medical technology industry association BVMed. Once an application is approved, researchers will gain access to a virtual analysis platform containing data tailored to their specific research needs.

And Gladkov sees room for improvement in this process: "Digital workflows need to be further optimized to better support researchers, particularly in product development," she says. Once up and running, this data infrastructure will unlock a wealth of opportunities for companies developing innovative diagnostics, therapies and medications.

Expanding AI's capabilities in medicine

AI-powered systems are already transforming other areas of medicine such as radiology and dermatology in Germany by helping analyze medical images with remarkable accuracy. "Modern AI applications can detect anomalies in X-rays, MRI scans, and even photographs of skin lesions, aiding doctors in making early diagnoses," says Winter. Enhanced access to patient data pools will streamline the complex AI training process, further improving these systems' performance.

Looking ahead, research institutions and healthcare companies across the board stand to benefit from Germany's comprehensive health data resources. The technology is central for not only developers of AI-driven apps, diagnostic tools and telemedicine platforms, but also manufacturers of smart medical devices, wearables and health-monitoring sensors. This includes companies working in the growing area of personalized medicine. "Germany's health data ecosystem opens up long-term possibilities for us to further refine our AI models, making treatments more personalized, precise, and effective," says Niccolini.

4

REASONS WHY GERMANY IS A TOP DESTINATION FOR HEALTH DATA INNOVATION

1

Extensive data resources
As the most populous country in the EU, with approximately 75 million individuals in the public insurance system, Germany offers a potentially superlative dataset for medical research.

2

Robust data protection standards
Companies can trust that the data provided meets the world's highest data protection regulations, fostering confidence among business partners and offering a competitive edge internationally.

3

Traditional medical expertise
Germany's well-established academic and industrial healthcare ecosystem encourages collaboration between research institutions, universities and businesses.

4

Support for digital health innovation
Companies driving digital health advancements can benefit from funding programs and tax incentives, easing market entry and fostering growth.

Find out more about advancing innovation in German healthcare

ONLINE
www.gtai.com/digital-health

CONTACT
julia.pietsch@gtai.de
GTAI expert for e-health

THE NEXT BIOTECH BREAKTHROUGH?

Investment in biotechnology is surging globally and Germany — the fourth largest pharma market in the world — excels in the field. Every year it attracts more international investors and companies to fund the development of new medicines and vaccines.

The Covid-19 pandemic was a historic moment for German biotech. In 2020 a small team of researchers from Mainz, led by a immunologists Uğur Şahin and Özlem Türeci, gained international fame in 2020 when they developed the first mRNA vaccine for coronavirus and partnered with the US pharma giant Pfizer to bring it to market.

For decades, the medical research establishment overlooked therapies based on messenger RNA because it was considered "too unstable". BioNTech changed all that. Today it is a multinational company worth billions and continues to advance mRNA technology, focusing on developing new vaccines and its core business: cancer therapies. Currently, ten cancer immunotherapies are in various stages of clinical trials, with one expected to receive market approval as early as 2026.

Medical breakthroughs like these are fueled by a steadily growing stream of investment. Last year, biotech investment in Germany reached an all-time high (excluding the pandemic-related surge): Approximately EUR 2 billion in fresh capital flowed into the industry — a 70 percent annual increase. "Biotechnology is a key industry for Germany and plays a significant role in value creation across multiple sectors, particularly in industrial healthcare and the bioeconomy," says Viola Bronsema, MD of BIO Deutschland. The industry's momentum is also reflected in the market: Since 2022, pharma sales in Germany have been rising steadily, increasing by almost 8 percent from 2023 to 2024 to reach more than EUR 55 billion.

Aside from a huge market, Germany offers strategic advantages. "The ecosystem, ranging from academia, research institutes and highly qualified scientists to equipment suppliers and industrial partners is extraordinarily strong," explains Marcus Schmidt, Director Chemicals & Healthcare at Germany Trade & Invest. "A key advantage for pharmaceutical companies is also the very short time from regulatory approval in the EU to availability on the German market. Other countries take ten times as long."

THE BOTTOM LINE

The Covid-19 pandemic threw a spotlight on German biotech, a sector that has been attracting international investment steadily ever since. Today the cutting edge of research and development is in finding cures for cancer.

Dynamic biotech clusters

With robust legal frameworks such as patent protection, Germany provides foreign investors and companies an exceptional business environment for launch and scaling. The country is also home to several high-performing biotech clusters, where research institutions, companies and investors collaborate on developing the next big medical breakthroughs. One of the most prominent hubs, BioRN, is located in the Rhine-Neckar region in southwest Germany. Its mission is to attract international investment and top-tier talent. More than 140 SMEs, research institutions and ten global pharmaceutical companies are members of BioRN.

One of them is US biotech giant AbbVie, which has its German headquarters in Wiesbaden. Since 2020, AbbVie has invested over EUR 400 million in expanding its second-largest research and development site worldwide, located in Ludwigshafen. Last year, EUR 150 million were allocated for the construction of a new research facility. "With this investment, we are reinforcing the strategic importance of our Rhineland-Palatinate site within AbbVie's global network," says Thomas Merdan, General Manager Research and Development at AbbVie Germany. Around a third of the site's a thousand or so researchers will work in a cutting-edge six-story research and laboratory facility. "We firmly believe that Germany —

and specifically the regional state of Rhineland-Pfalz — offers outstanding conditions for the pharmaceutical and biotech sectors. It is crucial that policymakers and industry leaders continue to foster this development." The region also attracted US-pharmaceutical company Eli Lilly, which broke ground for a EUR 2.3 billion production facility in 2024.
→ *see Markets Germany magazine 02/24*

Record-breaking investments

The Munich metropolitan area is also among Europe's leading biotech hubs. More than 450 life sciences companies, universities and renowned research institutes, including three Max Planck Institutes, are based in the region. Last year, three Munich-based biotech companies secured record-breaking funding from international investors. Tubulis raised EUR 128 million to develop targeted chemotherapies that act solely on cancer cells. Catalym secured EUR 137 million for its novel compound that prevents cancer cells from developing resistance to anti-cancer drugs. ITM, a radiopharmaceutical specialist, received EUR 188 million to further its research into targeted cancer therapies using radioactive isotopes. A year earlier, ITM had set an industry record with EUR 255 million in venture capital financing.

International corporations are also making significant investments in the greater Munich area. Japanese pharmaceutical company Daiichi Sankyo, for instance, has committed around EUR one billion for the expansion of development and production capacities by 2030. "With this investment, we aim to further develop our facility in Pfaffenhofen into a pioneering center for drug development and production," says Nora Urbanetz, Head of Daiichi Sankyo's Europe Technology Unit.

The surge in investments in bleeding-edge cancer therapies reflects the fact that biotech is ones of Germany's most rewarding economic sectors right now.

Want to know more about biotech in Germany?

ONLINE
www.gtai.com/biotech

CONTACT
marcus.schmidt@gtai.de
GTAI Director Chemicals & Healthcare

5
LARGE PHARMACEUTICAL FDI PROJECTS

ROCHE
€600m
investment
PURPOSE
State-of-the-art diagnostics production center in Penzberg, Bavaria

ABBVIE
€150m
investment
PURPOSE Central research and development building in Ludwigshafen, Rhineland-Pfalz

TAKEDA
€300m
investment
PURPOSE
Vaccine production in Singen, Baden-Württemberg

SANOFI
€1.3bn
investment
PURPOSE
State-of-the-art insulin production facility in Frankfurt, Hesse

ELI LILLY
€2.3bn
investment
PURPOSE
New high-tech production center in Alzey, Rhineland-Pfalz

10

REASONS TO INVEST

Marcus Schmidt, Director Chemicals & Healthcare at GTAI, spells out the top ten advantages of Germany as a biotechnology location:

1 Germany is excellent in basic research with a number of world-renowned research institutions such as the German Cancer Research Center in Heidelberg and the Max Delbrück Center for Molecular Medicine in Berlin.

2 More than 30 university hospitals, including the Charité, the largest in Europe, are actively involved in research and development, making Germany a world leader in clinical studies.

3 Germany attracts lots of students, and well-educated scientists come from all over the world to study and work. This promotes the exchange of knowledge and cooperation on a global level.

4 More than 30 technology clusters provide strong ecosystems for biotechnology companies, including start-ups.

5 Germany is home to more than 800 dedicated biotechnology companies. While only few such as BioNTech are known to the general public, many German biotechs work very successfully with international partners.

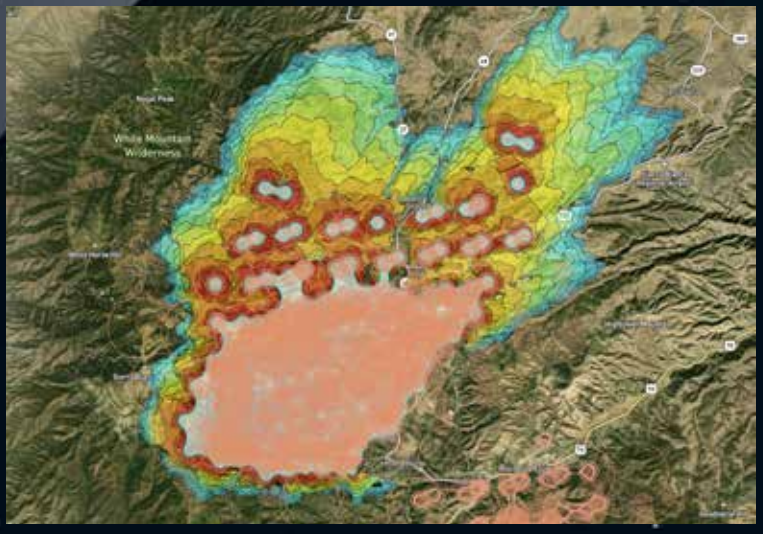
6 With more than 700 companies, Germany has the largest pharmaceutical industry within Europe. Many international companies have set up local operations for research, product development and production as well.

7 Germany is also the largest market for pharmaceuticals in Europe with more medicines being reimbursed than in any other EU country, and the shortest time between approval and market availability for patients.

8 Germany has an extensive network of suppliers and service providers for biotechnology and pharmaceutical companies, ranging from machinery and equipment to laboratory supplies and materials.

9 Germany has a dedicated regulatory body for biopharmaceuticals and vaccines that is respected worldwide for its expertise. The Paul Ehrlich Institute (PEI) is also the leading institution for cell and gene therapy in Europe.

10 The German federal government strongly supports the industry by creating reliable conditions, making more data available for research and improving efficiencies for clinical studies, as stipulated in the national pharmaceutical strategy 2023.



A FOREST-2 THERMAL SENSOR IMAGE OF NEW MEXICO
Firefighters, foresters and utility companies are provided with real-time fire detection capability, continuous situational awareness and predictive insights to maintain control of wildfires.

Photos: Orora Technologies

RACE TO SPACE

Germany is at the fore of Europe's rapidly expanding new space sector. The progressive commercialization of space travel is fostering a dynamic environment for international companies, driving pioneering technologies and creating lucrative business opportunities.

At present, there are more than 10,000 satellites orbiting the Earth, providing data for weather forecasting, navigation and numerous other services. In early 2025, two small German satellites developed by start-ups OroraTech and Constellr joined their ranks. The shoebox-sized objects collect thermal data to detect wildfires at an early stage, support sustainable urban planning and help agriculture adapt to climate change.

OroraTech and Constellr are spin-offs of renowned German research institutions. They typify the close cooperation between research and industry in Germany. The Fraunhofer Aviation & Space Network is another stellar example: It brings together 30 Fraunhofer institutes at the Fraunhofer ISC in Würzburg, southern Germany, to streamline synergies and create an ecosystem for the serial production of small satellites for commercial space applications.

The global space industry is evolving at an unprecedented rate, with more and more commercial players now launching their own missions. This dynamic market offers exciting opportunities for both established developers and start-ups, specializing in everything from small satellite manufacturing to advanced carrier systems and beyond. High-tech ecosystems are emerging in many different parts of Germany, and the country is becoming an increasingly integral part of the global space economy.

Germany has a number of competitive advantages: world-class research networks, a highly skilled workforce, a strong supplier industry and a high degree of vertical integration. Spillover effects from industries such as automotive manufacturing further enhance its capabilities. Established space companies provide a broad foundation of experience and resources, while agile start-ups push the boundaries of what's possible. This vibrant

THE BOTTOM LINE

Germany is really lifting off in the global space economy. International businesses can gain a strategic advantage by expanding to this dynamic market.

environment has led to a surge in patent applications, with Germany ranking third globally — behind only the United States and France — in space-related patent activity.

Germany is also a major contributor to the European Space Agency (ESA) and hosts several of its key sites, including the European Space Operations Centre in Darmstadt and the European Astronaut Centre (EAC) in Cologne. "Germany is building on its long-standing space heritage and is ideally positioned to be an international leader in the new space sector," says Rainer Müller, aerospace expert at Germany Trade & Invest (GTAI). That's down in no small measure to the many centers of expertise spread all over the country.

Bavarian rocket revolution

Munich is one of Germany's space hubs, thanks among other things to substantial investments by the Bavarian regional state government. Among the standout ventures is The Exploration Company (TEC), a German-French start-up developing reusable space capsules as a cost-effective and sustainable alternative to existing technology such as SpaceX's Dragon. TEC's Nyx capsule is designed for multiple missions, with a capacity to return up to 3,000 kilograms of cargo to Earth. TEC was the first European company to sign a Space Act Agreement with NASA and is targeting an unmanned mission to the International Space Station (ISS) in 2028.

Bavarian start-ups Isar Aerospace and Rocket Factory Augsburg (RFA) are involved in developing microlaunchers — smaller, more cost-effective rockets designed to deploy satellites efficiently. RFA recently became the first European company to secure a launch license for a privately developed rocket, with a maiden launch already scheduled. "We are strengthening Europe's position in the global space market through cost-efficient and flexible launch options," explains RFA co-founder Jörn Spurmann.

These start-ups benefit from a rich ecosystem featuring research institutions such as the German Aerospace Center (DLR), various institutes of the Max Planck Society, and multiple Fraunhofer institutes. A flagship project of ESA and the DLR is the new Moon Mission control center. Slated to become operational in 2027, it's Europe's answer to NASA's Houston headquarters. Meanwhile, industry giants like Airbus and ArianeGroup also maintain strong presences in the Munich metropolitan area.

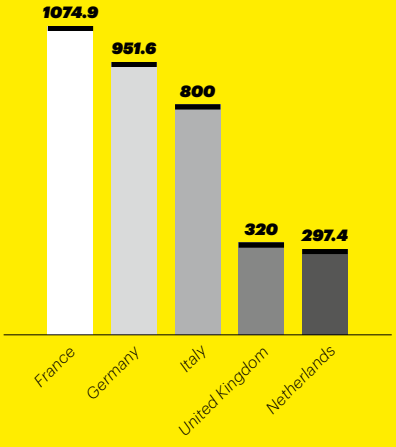
Bremen data and lasers

Bremen has the highest proportion of aerospace experts in the total population of all of Germany, and its concentrated expertise offers ideal conditions for new space businesses. One company to profit from the ecosystem and particularly from close relations is OHB. The company traces its roots back to 1958 and remains family owned. Nonetheless it broke the one-billion-euro mark in turnover in 2023. In October 2024, the firm received a EUR 280 million contract to develop two new Earth Explorer Satellites for ESA's Harmony mission.

"We're very happy and proud to develop this important and complex earth-observation mission as the main contractor," said OHB board member Rüdiger Schönfeld in a statement. "Harmony will provide valuable data to better understand our planetary systems and climate change." In February 2025, OHB also signed a contract with ESA for the next phase of the OpSTAR project, which aims to exploit laser data transfer technology for satellite navigation.

RUNNERS AND RIDERS IN EUROPE'S SPACE RACE

European Space Agency budget by member country contributions (in million euro, year for 2025)



Source: European Space Agency (ESA)

€46 bn

Total revenue generated by the German aerospace industry in 2023. This is an increase of 18% compared to the previous year.

Source: German Aerospace Industries Association

Cologne lunar training

Western Germany plays a vital role in international space activities. The region is home to the DLR and the European Astronaut Centre, and recently the EU Commission selected the regional state of North Rhine-Westphalia as the site for a GOVSATCOM hub. This facility will provide secure, interference-resistant satellite communications for government agencies, emergency response teams and public institutions.

Another hub for space technology is Cologne, where the DLR and ESA have begun work on the lunar training and research facility LUNA. Spanning 700 square meters, this high-tech environment will replicate lunar conditions, complete with simulated craters, moon dust, reduced gravity and artificial sunlight. Designed for use by space agencies, universities, research institutes, and start-ups, it aims to provide a cutting-edge platform for experiments and technology development.

Dresden satellite propulsion

The Dresden region in eastern Germany is making notable contributions to new space technologies: Morpheus Space, a spin-off of the Technical University of Dresden (TUD), is pioneering electric-ion-propulsion systems based on Field Emission Electric Propulsion (FEEP) technology. These novel thrusters enable precise satellite maneuvering and collision avoidance while leveraging artificial intelligence for flight coordination.

Dresden's aerospace ecosystem benefits from a strong research landscape and specialized suppliers, making it a leading hub for advanced space technologies. Collaborations between universities and the Fraunhofer Society institutions have created one of Europe's strongest lightweight construction clusters. "Thanks to these specialized capabilities, we can develop highly complex components

COLD WINTER MORNING IN OTTAWA ...
A high resolution satellite image of the parliament buildings in Ottawa, Canada. Planet's satellites capture global events in near real-time to support a range of sectors including agriculture and urban planning.

Photo: Planet Labs PBC

450
satellites built by Planet to date

350 million
square kilometers of imagery captured daily by Planet's satellites

180
employees working at Planet's Berlin headquarters

FDI PERSPECTIVE: SATELLITE CONTROL FROM BERLIN

The US company Planet has had its European headquarters in Berlin since 2015, managing a fleet of approximately 200 satellites from the German capital.

Founded in 2010 by three NASA scientists, Planet established its European technology center in Berlin in 2015. There, space engineers, software developers and researchers oversee one of the world's largest satellite fleets dedicated to Earth observation. The high-resolution imagery generated by these satellites supports a wide range of applications, including environmental monitoring, agriculture and urban planning. "Europe has positioned itself as a leader in Earth observation innovation, and we welcome the region's continued investment in commercial space enterprises," says Planet Senior Vice President Massimiliano Vitale.
Planet is a key partner for research in Europe, working closely with the European Space Agency and the Copernicus Earth observation program. The company aims to enhance existing capabilities by providing high-resolution satellite images. Planet's small, cost-effective satellites can capture images of specific locations on Earth daily — or even hourly.

Beyond scientific research, Planet's satellite data serves a diverse range of stakeholders, including corporations, governments, and NGOs. The technology plays a vital role in initiatives such as tracking illegal deforestation in the Amazon rainforest.

Looking ahead, Planet has ambitious goals. The company aspires to become the "Google of space." In the future, its data could go beyond identifying environmental changes and be used in everyday applications such as providing real-time updates on available parking spaces in shopping centers.

quickly and efficiently," says Morpheus Space co-founder Daniel Bock.

To meet rising demand, Morpheus Space recently opened a new production facility in Dresden, reinforcing its position as a global leader in electric satellite propulsion. "Our goal is to expand our leadership in this field even further," Bock adds. GTAI actively supports international businesses setting up shop in Germany by identifying optimal locations for production and R&D activities. "We help companies navigate Germany's thriving new space ecosystem, ensuring they secure the best possible location for their investment," explains Rainer Müller. Companies who manage to establish operations in Germany can exploit the expertise available the country's many space clusters.

Want more information about German space technology?

ONLINE
www.gtai.com/aerospace

CONTACT
rainer.mueller@gtai.de
GTAI aerospace expert

SPRIND in Numbers

SPRIN–D

2019
year the German Federal Agency for Disruptive Innovation was founded

2,111
innovation projects submitted since SPRIND's inception

163
projects funded by SPRIND to date


1


2

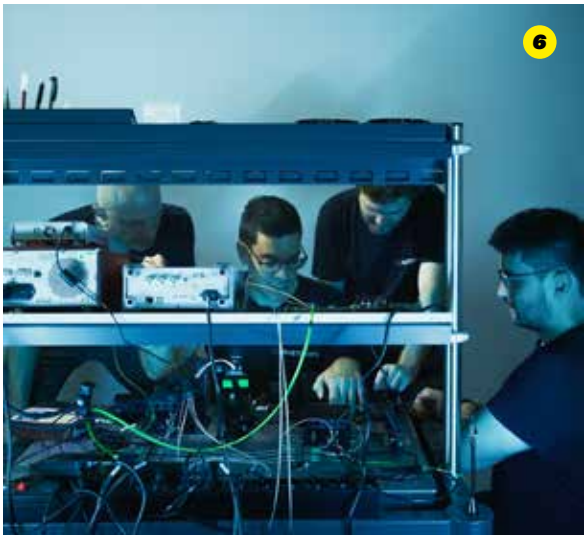

3


4


7

Photos: SPRIND GmbH, picture alliance / ZB/euroluftbild.de | Max Gaertner


5


6

1 SPRIND Innovation Manager Olav Carlsen — a very busy man. 2 Oliment's cement alternative uses the mineral olivine (which absorbs CO_2) instead of limestone. 3 Oliment GmbH partners with necona, a Leipzig-based research company that's a 100% subsidiary of SPRIND. 4 The tallest wind turbine in the world under construction in Schipkau energy park, Lusatia. It will stand at 363 meters. 5 Horst Bendix, the 92-year-old engineer who invented the wind turbine, capable of generating three times more power than conventional models. 6 Optical processors made by Akhetonics (a SPRIND-funded project) can make computing more sustainable. 7 Modern Camera Designs want to bring high-volume production of small imaging optics back to Europe with support from SPRIND's flexible funding and incubation model.

HARNESSING THE POWER OF ***DISRUPTION***

Germany's Federal Agency for Disruptive Innovation (SPRIND) is driving the development of groundbreaking technologies through flexible financing, expert advice and a supportive ecosystem. It offers innovators a unique opportunity to bring disruptive ideas to the German market.

With a projected height of 300 meters, the tallest wind turbine in the world is currently under construction in the eastern German region of Lusatia. When finished, it will be the second tallest structure in Germany. This massive turbine is poised to set new standards for efficiency in sustainable energy production. Wind speeds at that height are greater and more consistent, enabling large amounts of energy to be produced more reliably with the same footprint on the land. Supersized turbines can also be integrated into existing wind farms.

This project is just one of many supported by the German Federal Agency for Disruptive Innovation (SPRIND), headquartered in Leipzig, also in eastern Germany. Its mission is to promote products, business models and technologies with the potential to become breakthrough innovations and bring about transformative social or economic advancements. "We create spaces where innovators can take risks and think radically differently," says SPRIND Innovation Manager Olav Carlsen.

From laser-driven nuclear fusion and nanorobots for cancer therapy to the development of holodecks, SPRIND supports a wide range of projects. In so doing, it provides internationally active companies, research institutions and start-ups with unique opportunities to establish groundbreaking innovations in the German market.

The selection process

Any organization, whether start-up, established company, university, or research center (or even an individual with a disruptive idea and the ambition to develop it in Germany or the EFTA states of Iceland, Liechtenstein, Norway and Switzerland) can apply for support. The key criteria: The idea must have breakthrough potential, must align with European and humanistic values of freedom, self-determination and democracy, and must not serve military purposes.

One successful applicant is the German start-up Oliment, which is developing a sustainable alternative to cement. Cement production is a major contributor to climate change, accounting for around eight percent of global CO_2 emissions. "Our goal is to establish a CO_2-neutral binding agent for concrete applications in construction," explains Frank Bellmann, founder of Oliment. Instead of limestone, the company uses the greenish mineral olivine, which absorbs rather than releasing carbon dioxide. That eliminates the need for an energy-intensive firing process. SPRIND is supporting Oliment at a critical stage, funding a pilot plant to scale the process from the laboratory to industrial production and advance regulatory approval.

THE BOTTOM LINE

For anyone looking to pursue positive disruptive business models, the Federal Agency for Disruptive Innovation (SPRIND) is the ideal partner.

Flexible funding options

SPRIND operates differently from traditional funding institutions. It focuses on projects where high development risks make private investment difficult. "We aim to bridge the gap between world-class research and market viability to bring promising ideas to market," says Carlsen. SPRIND's funding model is flexible and streamlined — an advantage over conventional government structures. With an annual budget of up to EUR 250 million, the agency provides financial support through grants, the creation of SPRIND subsidiaries and equity investments. The ultimate goal is to transition funded projects into private-sector financing once they reach market readiness.

Beyond funding, innovators benefit from SPRIND's extensive network of experts, partners and private investors. The agency also organizes various innovation competitions, including the SPRIND Challenge, which invites companies from across Europe, in collaboration with international partners, to develop solutions to pressing challenges such as deepfake detection or autonomous flight. Applications can be submitted at any time via the form on SPRIND's website (sprind.org). A panel of experts evaluates each submission through a multi-stage process, with final funding decisions made within approximately twelve weeks.

Find out more about SPRIND's disruptive innovations

ONLINE
www.sprind.org

www.tinyurl.com/disruptive-interview

www.tinyurl.com/disruptive-podcast

€600 bn

annual worldwide turnover with net-zero technologies by 2030

Source: European Commission

20.4%

required annual decarbonization to limit global warming to the 1.5°C target

Source: Net Zero Economy Index 2024 by pwc

GETTING DOWN TO ZERO

Europe's economy is on a pathway to greater sustainability and independence. The European Union's Net-Zero Industry Act has established a robust framework for investments in green transition technologies, offering multiple advantages for businesses operating in Germany.

The European Union (EU) has set the ambitious goal of becoming climate neutral by 2050, with Germany positioning itself to achieve this target five years earlier than that. Reaching these critical milestones requires significant investment in net-zero technologies.

That's the background of the Net-Zero Industry Act (NZIA), which came into force in 2024. The new legislation is designed to boost the production of climate-friendly technologies within Europe, reducing reliance on imports, particularly from China and other single suppliers. Key elements include electric batteries, solar panels, wind power, heat pumps and hydrogen solutions. The ultimate goal is to enhance Europe's industrial competitiveness, self-sufficiency and sustainability.

THE BOTTOM LINE

The Net Zero Industry Act is designed to secure the future of European industry by increasing investment in innovation, reducing reliance on imports and streamlining approval processes.

The NZIA offers several advantages for companies operating in Europe, including Germany. It streamlines approval processes for climate-friendly technologies, fosters investment and strengthens domestic production. It also opens up opportunities for businesses investing in innovative sustainable solutions.

"This is particularly true for Germany, with its strong industrial base, outstanding research landscape and targeted funding programs," explains Christina Schön, Senior Manager of Investor Support Services at Germany Trade & Invest (GTAI).

A new age of opportunity for Europe

The NZIA identifies 19 key net-zero technologies, ranging from photovoltaics and wind power to batteries, energy storage, heat pumps, geothermal energy, electrolyzers and hydrogen solutions as well as CO_2 capture and storage. The EU legislation actively promotes and prioritizes these technologies while allowing member states the leeway to choose between different energy sources and determine the general structure of their energy supply.

By 2030, the EU wants to cover at least 40 percent of its annual demand for these technologies domestically. By 2040, at least 15 percent of global net-zero technology production is predicted to come from the EU. "With the NZIA, industrial policy is finally taking a more proactive stance," says Anna Leipprand from the Transformative Industrial Policy research division at the Wuppertal Institute. "This is a crucial step in the right direction."

The act includes practical measures to save companies time and money. It establishes single points of contact to coordinate efforts, improve information flow between businesses and authorities, and reduce redundancy in approval processes. While the NZIA itself does not create new public funding programs, it consolidates and simplifies existing national and EU-wide initiatives.

Additionally, the act includes provisions regarding public procurement. For instance, public authorities must meet certain sustainability and resilience criteria. The legislation also facilitates the testing of new technologies in real-world conditions, with a particular focus on granting access to start-ups and small-to-medium enterprises (SMEs). Moreover, the NZIA encourages the creation of European academies, initially funded by the EU Commission, for training and education in key technological fields.

Germany leading the way

As a strong advocate of EU climate goals, Germany plays a leading role in the expansion of renewable energy. Recent data from the European Commission underscores this. Germany's

BASF is driving research into high-performance battery materials that will advance electromobility: innovative cathode materials for lithium-ion and solid-state batteries.

Photo: BASF SE

annual electrolyzer production capacity, for example, comes in at 3.3 to 3.5 GW — or 59 percent to 63 percent of total EU capacity.

Germany's strength in clean technologies presents a compelling incentive for foreign companies looking to invest in the sector and benefit from NZIA initiatives. Thomas Grigoleit, Director for Energy, Building & Environmental Technologies at GTAI, emphasizes: "Germany's numerous industrial and technology clusters provide ideal conditions for the development and implementation of the net-zero technologies outlined in the NZIA."

The demand for net-zero technologies within Germany is already high, "and will continue to grow in the future," says Grigoleit. Germany's photovoltaic capacity is set to increase from approximately 100 GW in 2024 to around 215 GW by 2030, and 400 GW peak by 2040. Industries such as hydrogen, grid technologies, and battery production are also expected to expand rapidly. Combined with the NZIA measures, this offers decisive advantage to companies operating in Germany.

Acceleration valleys

Under the NZIA, EU member states can designate specific regions as net-zero "acceleration valleys" — strategic areas designed to fast-track the development of climate-friendly industries. "The advantages of the NZIA apply throughout Germany," explains Jasmin Krafft, Manager of Investor Support Services at GTAI. "But there are added benefits when setting up in an acceleration valley or a region offering financial incentives." GTAI takes a project-based approach to helping international companies identify optimal locations for their expansion.

Currently, two acceleration valleys for the production of net-zero technologies are emerging: one on Germany's northwest coast and another in the eastern region of Lusatia. Both areas are undergoing structural transformation. Lower Saxony is a pioneer in the expansion of renewable energies, using its strong potentials for the production of wind energy and hydrogen along the North Sea coast, while Lusatia is transitioning from traditional coal mining to clean technologies. These regions boast ample land, existing infrastructure, a skilled workforce and strong political support — ideal conditions for sustainable economic redevelopment. That means major opportunities for international companies.

Find out more about Germany's journey to net zero

CONTACT
christina.schoen@gtai.de
GTAI expert for NZIA

LUSATIA: A NET ZERO ACCELERATION VALLEY

From the shore of a large lake in the eastern region of Lusatia, day trippers can relax by the water, a power station looms in the distance and an amusement park offers a clear view of an industrial facility. A typical scene for this very special part of Germany. An open-minded attitude has contributed to bringing representatives of the regional cities and municipalities, industry, research institutions, and political life in Lusatia together to form a "Net Zero Valley." Net Zero Valleys are areas where acceleration and simplification are promoted in the rapid establishment of net-zero technologies.

Companies based there have benefited — among other things — from simplified approval procedures, targeted funding and strong partnerships. As Dr. Markus Niggemann, Head of the Net Zero Valley Lausitz Task Force emphasizes: "Net Zero Valley Lausitz offers us the opportunity to market and make our region even more attractive in Europe and beyond. Many business representatives are already looking to Lusatia and hoping for an efficient and profitable development of the valley."

Lusatia submitted its official application in March 2025 as the first valley in the whole of Europe and aims to become a pioneer in Europe and beyond. Building on this momentum, Lusatia is targeting business in the batteries, energy storage, energy efficiency and hydrogen solutions sectors.

ONLINE

GTAI offers detailed information about NZIA in Germany:

www.gtai.com/netzero

BUILDING MATERIAL RESILIENCE

Defunct computer chip boards: a pile of old waste or a motherlode? The EU's Critical Raw Materials Act supports recycling, extraction and reuse technologies that will lead greater materials autonomy.

Photos: REWIMET e.V., AdobeStock/gopixa

THE INTERVIEWEE

Dirk Schöps is Cluster Manager of the German recycling network REWIMET at the Institute of Mineral and Waste Processing, Recycling and Circular Economy in Clausthal.

The European Union's Critical Raw Materials Act aims to secure the supply of strategically important raw materials and reduce dependence on third countries. Dirk Schöps from the German recycling network REWIMET discusses the opportunities this creates for companies in the EU, particularly in Germany.

Mr. Schöps, how does the recently enacted Critical Raw Materials Act (CRMA) help secure Europe's supply of essential raw materials?

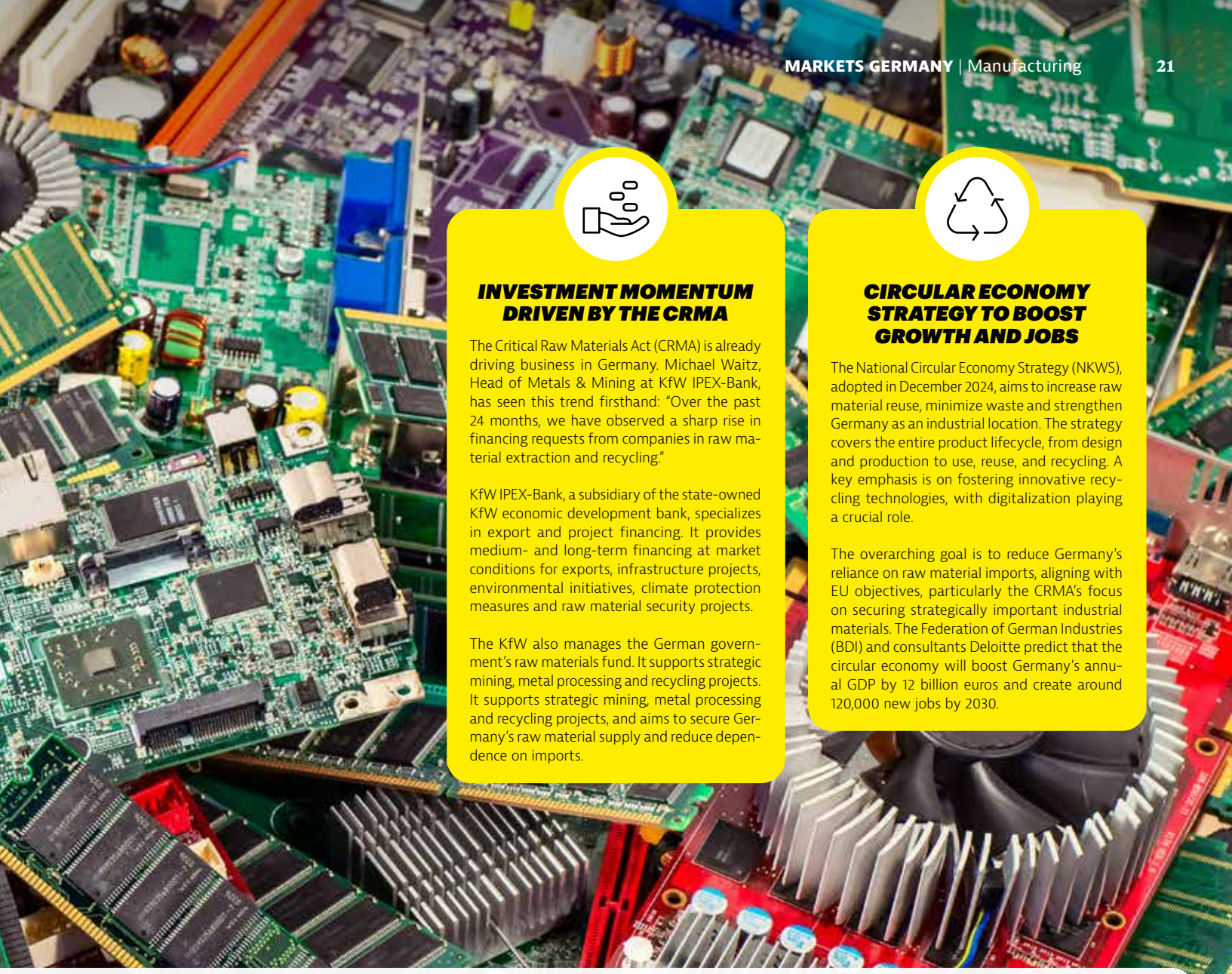
DIRK SCHÖPS: The CRMA establishes a common framework across the European Union (EU) to ensure a stable supply of strategically important raw materials. Different stakeholders play distinct roles: The EU sets the objectives, while member states implement them at the national level by adapting legislation and introducing financial incentives. These measures will influence corporate decision-making in the coming years as businesses adjust to the new regulatory landscape and capitalize on emerging opportunities. The three key areas of focus are domestic extraction of primary raw materials, refining and processing, and recycling of critical raw materials. The EU's overarching goal is to reduce reliance on outside countries and establish a resilient raw material supply chain within the bloc.

What opportunities are there for companies to do business?

DS: First, the CRMA provides clear strategic direction for EU member states, allowing businesses to align their operations with these objectives. This creates new business opportunities, particularly in recycling, sustainable extraction methods and innovative material processing. Second, the CRMA facilitates financial support for sustainable technologies through EU and national funding programs. Third, streamlined approval processes improve the regulatory environment for companies. Early adopters of these developments can position themselves as technology leaders and gain a competitive edge in growing markets.

Which industries stand to benefit most from the CRMA?

DS: The CRMA presents significant opportunities for companies involved in raw material extraction, processing and refining within the



INVESTMENT MOMENTUM DRIVEN BY THE CRMA

The Critical Raw Materials Act (CRMA) is already driving business in Germany. Michael Waitz, Head of Metals & Mining at KfW IPEX-Bank, has seen this trend firsthand: "Over the past 24 months, we have observed a sharp rise in financing requests from companies in raw material extraction and recycling."

KfW IPEX-Bank, a subsidiary of the state-owned KfW economic development bank, specializes in export and project financing. It provides medium- and long-term financing at market conditions for exports, infrastructure projects, environmental initiatives, climate protection measures and raw material security projects.

The KfW also manages the German government's raw materials fund. It supports strategic mining, metal processing and recycling projects. It supports strategic mining, metal processing and recycling projects, and aims to secure Germany's raw material supply and reduce dependence on imports.

CIRCULAR ECONOMY STRATEGY TO BOOST GROWTH AND JOBS

The National Circular Economy Strategy (NKWS), adopted in December 2024, aims to increase raw material reuse, minimize waste and strengthen Germany as an industrial location. The strategy covers the entire product lifecycle, from design and production to use, reuse, and recycling. A key emphasis is on fostering innovative recycling technologies, with digitalization playing a crucial role.

The overarching goal is to reduce Germany's reliance on raw material imports, aligning with EU objectives, particularly the CRMA's focus on securing strategically important industrial materials. The Federation of German Industries (BDI) and consultants Deloitte predict that the circular economy will boost Germany's annual GDP by 12 billion euros and create around 120,000 new jobs by 2030.

EU. Industries that rely heavily on critical raw materials — such as the automotive, battery and electronic sectors — will also benefit. These industries need materials like lithium, cobalt, nickel and rare earth elements. By stabilizing supply chains within the EU, the CRMA aims to reduce price volatility and enhance the global competitiveness of European businesses.

What CRMA targets are particularly relevant for companies engaged in raw material extraction and recycling?

DS: One key CRMA objective is to achieve a minimum recycling rate of 25 percent for strategic raw materials. Additionally, approval processes for projects will be significantly expedited: Mining projects must receive approval within 27 months, while recycling and processing projects will have a maximum approval period of 15 months. This acceleration enhances planning certainty for businesses and facilitates the efficient development of sustainable raw material cycles. The CRMA therefore provides strong incentives for investment in modern recycling technologies, contributing to the establishment of a circular economy in Europe.

What role does REWIMET play in advancing the CRMA's objectives?

DS: REWIMET is a network of companies, research institutions and municipal stakeholders from various regions across Germany — all dedicated to developing innovative recycling technologies and integrating them into industrial applications. We support the entire innovation pipeline, from basic research to practical implementation, helping companies establish sustainable and efficient material cycles. Additionally, we connect businesses with useful research partners to drive technological advancements and unlock new market opportunities.

Why does the CRMA make Germany an attractive location for international companies?

DS: Germany is a leader in raw material processing, with a highly efficient steel and metal industry. It also boasts a strong research ecosystem that fosters innovation in raw material supply solutions. This combination of industrial infrastructure, technological expertise and government support makes Germany one of the most attractive destinations for investments in raw material security and sustainable materials management. International companies find excellent opportunities for collaboration and strategic partnerships here.

Find out more about Germany's recycling sector

CONTACT
flerida.regueira@gtai.de
GTAI recycling expert

SMART MEASUREMENTS FOR SMART GRIDS

Germany is rapidly expanding its smart-grid infrastructure to support the transition to clean energy. This shift presents lucrative opportunities not only for manufacturers of smart-home technology and smart meters but also for energy service providers offering flexible rates.

3.4 m

Number of photovoltaic systems installed on rooves in Germany in 2024

Source: Federal Statistical Office of Germany

41

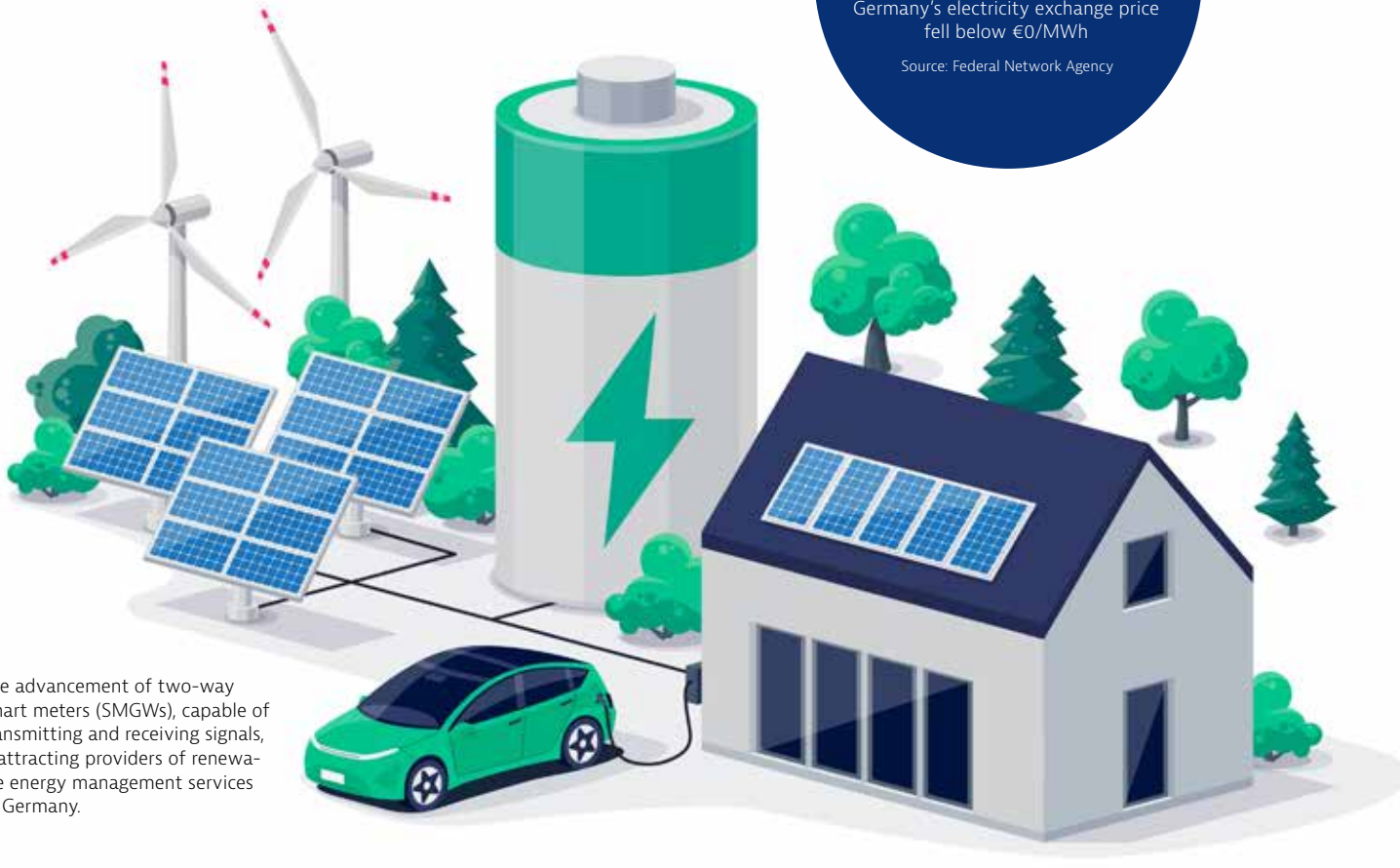
Number of hours in 2024 when Germany's electricity exchange price exceeded €300/MWh

Source: Federal Network Agency

457

Number of hours in 2024 when Germany's electricity exchange price fell below €0/MWh

Source: Federal Network Agency



The advancement of two-way smart meters (SMGWs), capable of transmitting and receiving signals, is attracting providers of renewable energy management services to Germany.

Photo: AdobeStock/petovarga

Imagine having to pay to get rid of a product. Germany's commitment to renewable energy is reshaping its electricity market, but if supply exceeds demand, power producers receive no revenue for their electricity. In fact, they're charged to feed it into the grid. In 2024, electricity prices on the German energy exchange turned negative for a record-breaking 457 hours.

The underlying reason is that wind and solar power — upon which Germany is increasingly reliant — depend on the weather. Thus, unlike gas- and coal-fired power, they cannot be rigidly planned. As a result, there are times when renewable energy generation exceeds demand, and with limited storage capacity, the surplus cannot easily be absorbed.

THE BOTTOM LINE

Germany's smart meter rollout is creating business opportunities not only for hardware manufacturers but also for innovative energy management service providers.

With load fluctuation set to rise with increasing use of renewables, Germany needs a smarter power grid, and fast. Rather than controlling electricity generation, the future grid will manage absorption capacity through battery storage, as well as consumption.

Meters make the difference

At the heart of this transformation are intelligent measurement and hardware. "They're the key to the smart grid," says Heiko Staubitz, energy market expert at Germany Trade & Invest (GTAI). Smart meters (SMGWs) equipped with communication units — known as gateways — can transmit and receive signals, enabling remote-control functions.

Recognizing their crucial role, Germany is expediting the rollout of SMGWs. Beginning in 2025, installation will become mandatory for three key groups: consumers using 6000 kilowatt-hours (kWh) or more annually, operators of energy generation systems with a capacity of at least 7 kW, and users of large, controllable electrical devices such as heat pumps and electric vehicle (EV) charging stations.

This expansion makes Germany an increasingly attractive location not just to smart meter manufacturers and installers, but to renewable energy management service providers as well. "Compared to other European countries, Germany has a higher share of privately owned photovoltaic systems, and many EV owners charge their vehicles at home rather than in public charging stations," notes Patrick Vollmuth, head of digital innovation and flexibility integration at the Munich Research Center for Energy Economics.

Innovative companies offering solutions to efficiently manage energy consumption across these devices — including heat pumps, solar panels, and EV chargers — will find a receptive market in Germany.

Leveraging volatility

The market is further bolstered by German households' and small businesses' interest in leveraging electricity price fluctuations. More and more consumers, even those using less than 6000 kWh annually, are opting to install smart meters to take advantage of dynamic electricity rates and reduce costs. "Dynamic rates are becoming increasingly popular, and smart meters are necessary to get them," Vollmuth explains.

Pioneers such as UK-based Octopus Energy recognize the potential of this trend in Germany. Since entering the German market in 2020, the British company has offered rates that track short-term electricity price fluctuations on the exchange. The business model relies on a proprietary cloud-based technology platform.

Major international players, such as French technology giant Schneider Electric, are also seizing opportunities in the market. In late 2024, Schneider announced a 10-million-euro expansion of its German facility in the western German town of Wiehl, near Cologne, focusing on smart home device production.

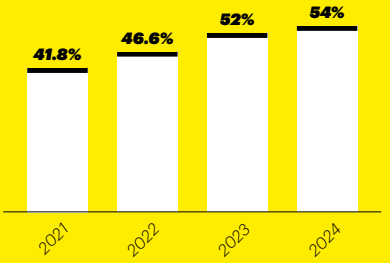
Schneider Electric's venture capital arm, SE Ventures, also invested in Berlin-based start-up Ostrom. Founded in 2021, Ostrom is working to decentralize and increase the flexibility of electricity generation in Germany, while offering dynamic rates and EV charging solutions.

These developments underscore the momentum of Germany's smart meter rollout. "It's not just about device manufacturers. Creative, data-driven and AI-powered business models now have a real opportunity to shape this young and rapidly growing market," says Heiko Staubitz.

The rising number of heat pumps, EV chargers, solar panels and battery storage systems in German households will further drive demand for smart energy management services. Beyond smart meters, one crucial element will be software that can efficiently and reliably coordinate variables across a decentralized, intelligent power grid in an industrialized nation of over 80 million people.

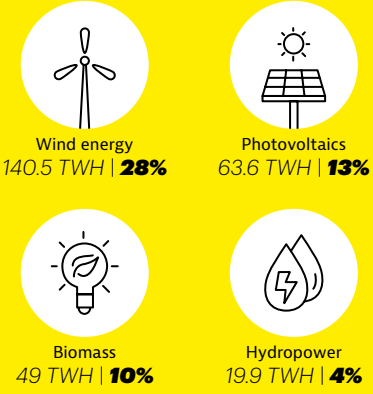
RENEWABLES ON THE RISE IN GERMANY

Share of renewables in the electricity mix in Germany (gross electricity consumption)



RENEWABLE ELECTRICITY SHARE BY SOURCE

Electricity supply from renewable sources in Germany in terawatt hours and percentage share in 2023



Source: AGEE-Stat 2025, German Environment Agency (UBA) 2024

Want to find out more about Germany's clean energy transition?

ONLINE
www.gtai.de/energy

CONTACT
heiko.staubitz@gtai.de
GTAI expert for smart meters

EXPANDING INTO GERMANY ***WITH GTAI***

Germany Trade & Invest (GTAI) is the German government's international business promotion agency and helps companies from abroad expand to and in Germany. Managing Director Achim Hartig gives some examples of how GTAI supports international businesses in finding a home in the German market.

EXPERT INSIGHTS

GTAI provides companies with comprehensive market intelligence across various industries. Whether businesses need insights into customer demographics, market size, trends or forecasts for specific sectors, GTAI delivers tailored analyses — up to and including customized market entry strategies.

PUBLIC FINANCING OPPORTUNITIES

GTAI's financial experts help foreign companies secure low-interest financing from public banks. They connect investors with key financing partners, including the state-owned KfW banking group and regional development banks across Germany. Additionally, they facilitate discussions with private financial institutions, ensuring businesses explore all available funding options.

»We connect companies with the ecosystems in Germany so that they find their partners, suppliers and buyers to become successful.«

OTHER STATE FUNDING

GTAI guides companies through Germany's diverse landscape of government funding programs. In addition to national support, Germany's regional governments and the European Union also offer a range of incentives. Whether it's research grants, regional investment programs, or environmental and climate-related subsidies GTAI's experts identify suitable funding opportunities and help companies through the application process.

Photo: Kammann Rossi/Manuel Köpp

SITE SELECTION

GTAI works closely with companies to define project-specific location requirements and cost structures. Working in close collaboration with regional economic promotion agencies, GTAI identifies optimal locations that meet businesses' needs and organizes on-site visits with local authorities, project developers and service providers.

LEGAL AND REGULATORY PROCESSES

Entering a new market often involves complex legal issues. GTAI provides expert guidance on entry requirements, employee residency and work permits, German labor and tax law, customs regulations and industry-specific legal provisions. When needed, GTAI also connects businesses with lawyers and notaries to ensure compliance.

»When it comes to policies and regulations, we provide both information and advice.«

»Germany is known for both tradition and innovation, and this unique combination of process excellence and future technologies makes Germany an ideal location for setting up new businesses.«

ADMINISTRATIVE PROCEDURES

International companies partnering with GTAI can interact with German authorities with confidence. GTAI arranges meetings with local administrative offices, prepares required documents and accompanies company representatives to official appointments — ensuring a smooth and efficient expansion process.

Achim Hartig is Germany Trade & Invest Managing Director Investor Consulting and Chair of the OECD IPA Network in Germany.

ONLINE

Achim Hartig explains how to expand in and to Germany with GTAI:

www.tinyurl.com/expand-to-germany

Curious about expanding your business to Germany?

CONTACT
Achim Hartig, invest@gtai.de
GTAI Managing Director, Investor Consulting

Photo: AHK Griechenland

Economist Ilja Nothnagel is Managing Director of International Economic Policy at the German Chamber of Commerce in Greece (DIHK).

GERMANY AND GREECE HAVE GREAT SYNERGY

The Greek economy has made a remarkable recovery since its crisis 15 years ago. Ilja Nothnagel, Managing Director of the German Chamber of Commerce in Greece, tells *Markets Germany* how Greek companies are once again looking to their longstanding trading partner in Europe for business opportunities.

Greece's national debt crisis in 2009 led to a general economic crisis. How has the Greek economy recovered since then?

ILJA NOTHNAGEL: The national debt crisis was a major blow for Greece, for companies as well as employees. Nevertheless, the country seized the opportunity to reposition itself, and a large number of reforms were carried out. Today, the success of these steps is clearly visible: Unemployment has fallen from its peak of almost 30 percent to just over nine percent, and the country is in the top group for growth in Europe. One of the latest steps: Over 2,000 administrative services can be handled digitally for companies and citizens and the land registers have been digitized. So, great progress has been made.

Greece and Germany are both members of the EU and therefore the common market. In which sectors is cooperation between companies from the two nations particularly lively?

IN: Some sectors of the Greek economy have traditionally had close relations with Germany — the food industry, tourism and logistics. And there are other areas that may not be the focus of attention but are very successful nonetheless: Take the vibrant IT scene in the north of the country and the cooperation in the pharmaceutical industry, which is exemplary.

How do Greek companies rate Germany as a location? What makes it attractive for them?

IN: At the moment, people are looking to Germany with interest but also question marks. The sluggish economic development in Germany in recent times has been a concern for many decision-makers in Greece, but Germany remains an important market and a close partner, and there are still new opportunities to be found. The market is large, and partnerships are for the long term. We see a great demand for trade fair visits to Germany from Greek companies.

From the perspective of company managers, what locational advantages does Germany have compared to other large economies in Europe?

IN: Many managers here in Greece have personal or family ties to Germany. There are already connections, so to speak, that can be built on, making it easier to assess the market and its characteristics. Furthermore, Germany's central position in Europe is an ideal starting point for serving other large markets too. Any company that proves successful in Germany can score points first here in Greece, then when expanding into other markets.

Want to connect with the German AHK in Greece?

CONTACT

i.nothnagel@ahk.com.gr

joachim.weber@gtai.de

GTAI director Executive Unit Strategic Partnerships and liaison to the German Chambers of Commerce Abroad

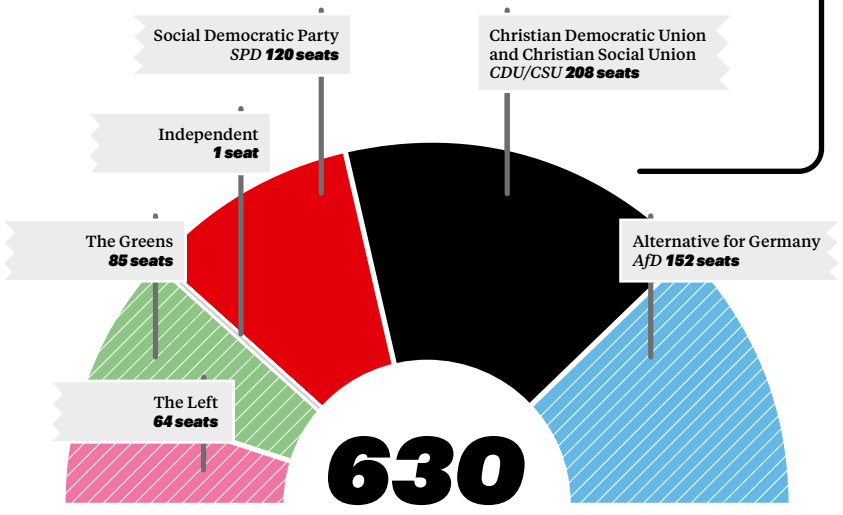
How Germany Works
THE ELECTION OF THE GERMAN CHANCELLOR

The leader of the German government is called the chancellor (formally, the Federal Chancellor of Germany). Germany is a parliamentary democracy, meaning voters do not elect their chancellor directly. Instead, they elect members of different parties to the German parliament, the *Bundestag*. The members of the *Bundestag* then elect the chancellor by secret ballot, usually requiring an absolute majority. Since single parties rarely achieve this, coalition negotiations are normally needed before a chancellor is elected.

Once a majority has been formed, the German President, a largely ceremonial figure, nominates a candidate, typically the largest parliamentary group's leader. The majority then elects the new chancellor. The previous chancellor's term ends immediately. The term of a chancellorship is usually four years, with unlimited re-election possible.

SEAT DISTRIBUTION IN THE BUNDESTAG

The February 2025 elections recalibrated the relations of power in the Bundestag.



HOW CONSERVATIVE LEADER FRIEDRICH MERZ BECAME GERMAN CHANCELLOR

The conservative CDU/CSU and the SPD possess a majority in the Bundestag. On May 6, 2025, the two parties elected Friedrich Merz Germany's new chancellor.

THE MOST IMPORTANT STEPS IN THE ELECTION OF A GERMAN CHANCELLOR

1. The members of the *Bundestag* (German parliament) are elected in a general election.
2. Parties negotiate to reach a coalition agreement and form a majority bloc.
3. The German president proposes a candidate for election as chancellor (typically the largest parliamentary group's leader).
4. The majority of members of the *Bundestag* vote in the chancellor.

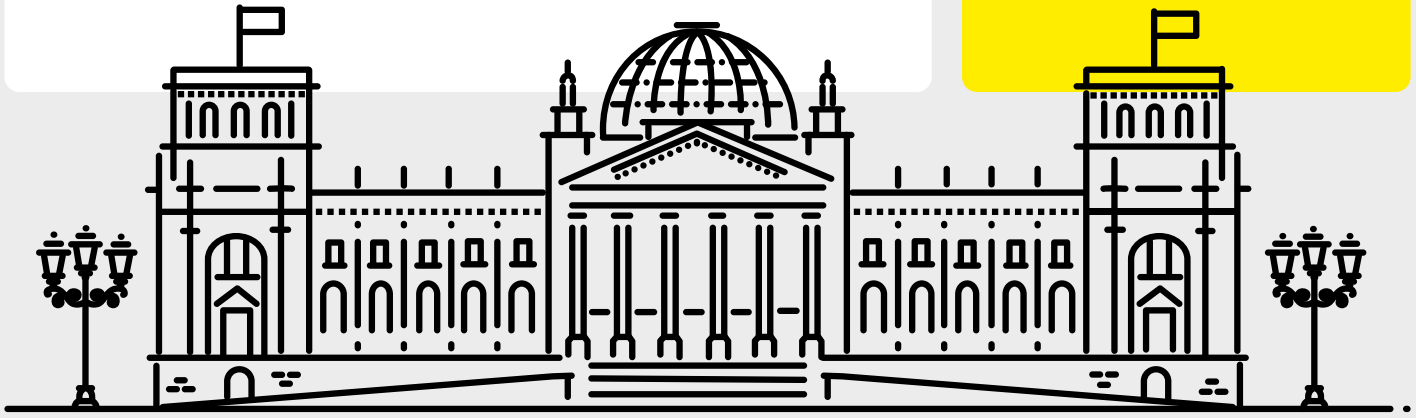


Photo: picture alliance/dpa | Michael Kappeler

GTAI GERMANY TRADE & INVEST

At your service!

SET UP BUSINESS IN GERMANY

Want to be part of Europe's largest market? We're your first point of contact. **Germany Trade & Invest** (GTAI) provides international companies looking to expand with free, reliable information on the latest opportunities in the German market.

GETTING STARTED IN GERMANY

Our experts are there to help you in all phases of establishing a business in Germany.

www.gtai.de/gtai-en/invest

Germany Trade & Invest (GTAI) is the foreign trade and inward investment agency of the Federal Republic of Germany. We advise and support international companies planning to expand into the German market and assist German companies seeking to enter global markets.

Our consulting services for international companies looking to expand and seeking to establish an own subsidiary or branch office in Germany include:

- Assistance with finding the right site location for their business
- Information on financing and incentives for businesses
- Tax and legal information on setting up a company
- Information, data and statistics about key industries in Germany

All investment-related services and inquiries are treated with the utmost confidentiality and are provided free of charge.

Get in touch with our Investor Support Service

Benita Morgan
benita.morgan@gtai.de

Alexander Walter
alexander.walter@gtai.de

Germany Trade & Invest
Friedrichstraße 60, 10117 Berlin
T. +49 30 200 099-0
invest@gtai.de