Reinventing Growth

Germany's unique combination of strengths unlocks five major investment areas

MADE FOR GERMANY

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Foreword

Christian Sewing
CEO, Deutsche Bank

Dr. Roland Busch
President and CEO, Siemens

The debate over Germany's economic future has become too narrowly focused on structural decline. It is true that the country faces a classic innovator's dilemma: The economic model that drove decades of success is under pressure from global fragmentation, fierce technological competition, energy crises, geopolitical tensions, and years of underinvestment in physical and digital infrastructure. To remain competitive, the German government must accelerate reform, and companies must move faster on technological adoption.

But that is only half the story. Today, a singular focus on crisis obscures a remarkable underlying resilience. Germany's long-term growth potential is anchored by an exceptionally robust foundation built over decades. As a leading global economy with strong credit ratings and low corporate debt, the country possesses the financial capacity necessary to invest in its future. This economic resilience is underpinned by world-class institutional stability, a stable legal environment, and a regulatory framework that provides the reliability and predictability long-term investors require.

Germany's deep industrial core combines pioneering research networks, a highly diversified base of market-leading "hidden champions," and a strong pipeline of talent. This established foundation is increasingly energized by an expanding startup ecosystem, proving that domestic risk appetite and entrepreneurial drive are significantly higher than commonly assumed. Combined with seamless access to the vast European single market and top-tier logistics, Germany offers investors a distinctive capacity to develop and scale new technologies industrially—and this is a decisive advantage when it comes to AI. While other regions lead in foundation models, combining AI with German engineering and proprietary industrial data creates a powerful growth and value engine. The substance is already here—the task now is to convert technological potential into productivity and sustainable growth.

Germany's fundamental strengths create substantial long-term opportunities for strategic investment, innovation, and value creation. The country may not offer the same headline growth rates as some other regions, but the depth and resilience of its economy make Germany a compelling destination for long-term global investment.

Over the past few years, structural challenges have held back growth and investment, preventing Germany from realizing its full potential. To remove these barriers, the economic foundation must be renewed through bold structural reforms and growth-focused economic policy. Crucially, transformation momentum is building. The federal government acknowledges the urgent need for reform, and initial steps—reducing regulatory burdens to unlock innovation, accelerating permitting, and deepening capital markets—are encouraging.

Corporate Germany is also taking responsibility. Through the Made for Germany initiative, 147 companies have joined forces, committing over €850 bn in planned investments between 2025 and 2028, developing practical, actionable policy recommendations, and serving as constructive partners of the German government. The message is clear: **We believe in Germany's potential, we are investing in it, and we are ready to work with policymakers to build a stronger economic future.**

In this report, *Reinventing Growth,* we outline exactly where this potential lies and identify a €2.9– 4.1 tn investment opportunity through 2035 across five areas:

1. **Industrial AI acts as a cross-cutting productivity force** based on unprecedented domain expertise and data.
2. **Industrial reinvention drives automation and decarbonization** while scaling next-generation technologies.
3. **The energy transition** enables a clean and reliable future energy system.
4. **Infrastructure modernization** unlocks massive potential across transportation, communication, and healthcare.
5. **Security and defense spending** create growth potential and broader economic innovation.

In our dialogues with global investors, the feedback is consistent: Capital is ready to back a renewed German growth story, provided that reforms are implemented consistently and investment conditions remain attractive. To deploy this capital, however, reliable and stable regulatory frameworks are essential. Growth and competitiveness must become the defining strategic imperatives for Berlin and Brussels. But responsibility does not rest with government alone. Business must do its part—investing, innovating, and bringing new technologies to scale—and society must meet change with greater confidence and openness. Germany continues to offer immense business opportunities. Our immediate priority must be to enact the pro-growth reforms required to unlock them.

Christian Sewing
CEO, Deutsche Bank

Dr. Roland Busch
President and CEO, Siemens

Reinventing growth across five key investment areas

A unique combination of strengths drives innovation and attractive returns

Long-term predictability through political and legal stability

Among the top 8% worldwide in government effectiveness, regulatory quality, and control of corruption

Sustained investments and innovation through financial strength

AAA sovereign credit ratings from all major agencies

Technological leadership through pioneering research

3rd globally in high-quality scientific research output

Industrial performance through strong human capital

Highest STEM graduate share in the OECD (~35% at bachelor level)

High productivity through deep domain expertise

4th globally in manufacturing-sector output

Rapid scaling of business models through European market access

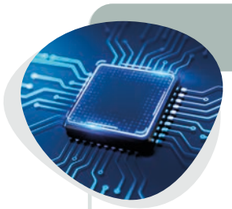
Top export destination for 16 of 26 other EU states and among the top 3 import sources for 24 of them

INVESTMENT OPPORTUNITY

€2.9–4.1 tn

across five key areas

Sources: Bundesnetzagentur, Federal Government, Destatis, Deutsche Bank, Deutsche Finanzagentur, Eurostat, GTAI, McKinsey, Nature Index, OECD, UN Comtrade, Unido, VDMA, World Bank Group



AI as a cross-cutting force

€400–600 bn
investment opportunity

1 in 7
global machines (by value) sourced from Germany

Access to global machinery data fuels industrial AI innovation

Industrial reinvention and next-gen technologies

€500–800 bn
investment opportunity

449
industrial robots per 10,000 manufacturing employees

Germany ranks 1st in Europe and 4th globally in robot density

Resilient energy systems

€800 bn–1 tn
investment opportunity

>20 GW
of onshore wind capacity receiving planning permission in 2025

A large project pipeline is ready to be moved into construction

Core infrastructure

€700 bn–1 tn
investment opportunity

€169 bn
for federal transportation infrastructure through 2029

Germany invests in rail, roads, bridges, and waterways at a record level

Security and defense

€500–700 bn
investment opportunity

~17% p.a.
growth in Germany's defense-equipment budget to 2032

Germany is at the center of Europe's fast-growing defense capital pool

Reinventing Growth

Germany's unique combination of strengths unlocks five major investment areas

This report examines the case for investing in Germany's economic potential. It serves as a guide for investors of all types* seeking to understand the diverse investment opportunities emerging in Germany. The report aims to provide a balanced and realistic perspective on the market, highlighting its opportunities while also reflecting relevant considerations.

Despite the economy's recent travails, its potential is intact: deep industrial know-how and domain know-how accumulated over decades, rock-solid legal institutions, unrivaled financial and political stability, and world-class scientists and researchers. Together, these fundamental strengths offer the prospect of high compounded returns on strategic investment. Germany's investment case may not be one of world-beating growth across the board, but it is one of deep pockets of value.

Germany's economic model clearly needs to be rejuvenated. The structural problems that have constrained growth and investment in recent years are widely understood. Berlin acknowledges both the diagnosis and the urgent need for reforms—and has started to act. Much work remains to fully realize Germany's economic potential; there must be no complacency—but it can be done. As the economy started more strongly in 2026, with 1.2% annualized growth in Q2 2026, growth forecasts for the year have more than doubled to 1.3%, versus the government's spring projection of 0.5%.[1] International investor sentiment is also favorable: 56% of surveyed companies named Germany among their top three European investment destinations, the highest share of any country in Europe.[2]

This report argues that Germany already offers compelling investment opportunities—and that structural reforms can further expand their scale and returns. Five areas stand out:

1. AI as a cross-cutting force
2. Industrial reinvention and next-generation technologies
3. Resilient energy systems
4. Core infrastructure
5. Security and defense

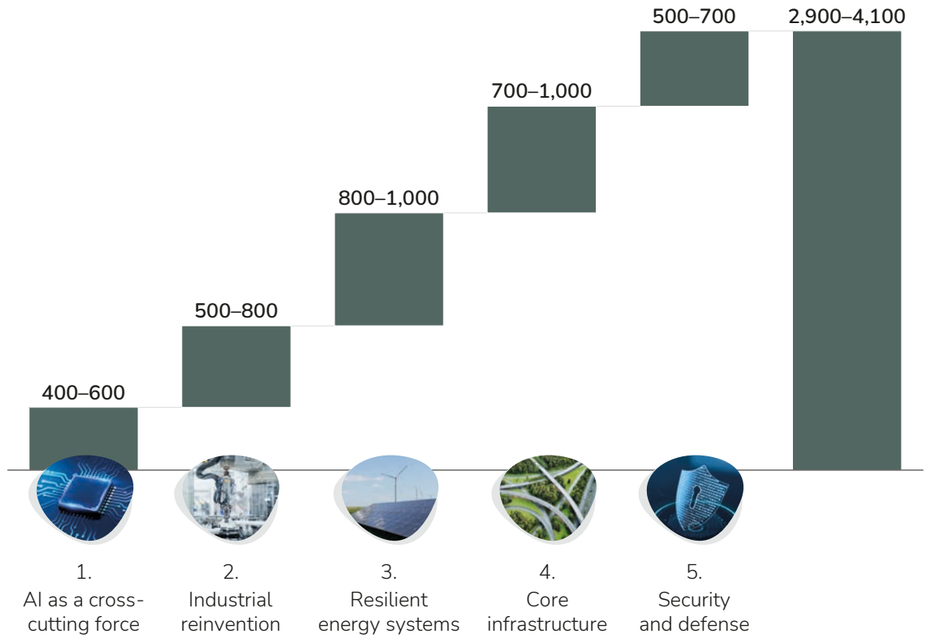
Each area has a compelling growth story, and each is already attracting substantial new capital. Yet more will be required: Germany will need to invest between €2.9 tn and €4.1 tn in these five areas over the next decade, providing significant financing opportunities for institutional and strategic investors (Exhibit 1).

The German government has committed €1 tn in additional public spending on infrastructure and defense over the next decade. Private capital is being mobilized at scale, too—with deep-tech superstar startups such as Agile Robots and Helsing representing only the tip of the iceberg. The 147 German companies behind the Made for Germany initiative have committed to investing over €850 bn in the country in the coming years, while continuing to advocate for the reforms still needed.

Germany also has substantial reserves of private savings it can mobilize. The government and financial industry are working together to strengthen private capital markets alongside the country's strong banking system. Germany can no longer afford to export excess savings for want of attractive domestic investment opportunities. Creating more of those opportunities should help mobilize German capital domestically, yet in Germany's most strategic growth areas, it also requires greater participation from foreign investors to deploy financial capital and commercial expertise. Germany therefore needs to send a clear signal to capital allocators around the world that it is open for business.

Exhibit 1: **Germany's economic and strategic transformation creates a financing opportunity of €2.9–4.1 tn over the next decade**

Germany's capital requirements until 2035, € bn



Source: Deutsche Bank and McKinsey analysis

* Including but not limited to domestic and international investors, greenfield and brownfield investors, risk and growth capital providers, and sovereign funds.

Germany’s economic potential rests on unique and proven strengths

Germany remains in the top five of the world’s largest economies in terms of both GDP and the UN Sustainable Development Index—a combination that reflects not only economic prowess but also outstanding institutional quality, social equity, and ecological sustainability.[3] Built over decades, these strengths provide a stable and valuable foundation for attractive economic growth and investment returns in the decades to come.

Political and legal stability provide predictability for long-term investment

1st

among G20 economies on the World Justice Project Rule of Law Index

Germany pairs high political stability with a strong legal environment, providing certainty on deal structures, intellectual property protection, and dispute resolution. It ranks 13th of 167 countries on the Democracy Index,[4] among the top 8% worldwide for government effectiveness, regulatory quality, and control of corruption,[5] and 1st on the 2025 WJP Rule of Law Index among the G20 economies.[6]

Financial strength preserves capacity to invest and innovate

1 of 2

G20 economies holding AAA sovereign ratings from all 3 major agencies

Germany has underinvested for the past two decades, but it has the financial firepower to invest for the future. Strong public finances sit alongside resilient household and corporate balance sheets. Germany is one of only two G20 economies holding AAA sovereign credit ratings from Fitch, Moody's, and S&P.[7] Household debt stands at 49% of GDP and nonfinancial corporate debt at 46% (Q4 2025), among the lowest levels in the developed world.[8]

Pioneering research enables leadership in next-generation industrial and technological innovation

#3

globally for high-quality scientific research output

Germany combines world-class foundational research with strong industrial R&D, dense innovation clusters, and a pipeline from science to commercial applications. It ranks 3rd globally for high-quality scientific research output,[9] while institutions such as Fraunhofer, Helmholtz, Leibniz, and Max Planck connect fundamental research with industry-ready solutions.[10] R&D spending reached a record €137 bn in 2024 (3.1% of GDP), and Germany ranks 4th globally in triadic patent families, with more than 4,000 filings in 2023.[11] Seven of the world's top 100 innovation clusters are in Germany, more than in any country except China and the US.[12]

Strong human capital underpins industrial performance and scalability

35%

of tertiary university graduates holding STEM degrees, the highest share in the OECD

Germany combines an exceptionally STEM-oriented graduate base with a uniquely practice-oriented vocational training system, providing technical talent at scale for industrial technology, deep tech, and advanced manufacturing. STEM graduates account for around 35% of tertiary graduates at bachelor level or equivalent, the highest share in the OECD.[13] Around 1.2 mn apprentices are enrolled in Germany's dual vocational training system across 327 recognized occupations; 79% of those completing their training successfully in 2024 were retained by their training company.[14] Germany's high quality of life further supports talent attraction and retention: The country ranks 5th globally on the UNDP's 2025 Human Development Index[15] and 8th globally on Numbeo's 2026 Quality of Life Index.[16]

A diversified economy combines high productivity and deep domain expertise

30%

of EU manufacturing value added

Germany combines a diversified economic base with a highly productive manufacturing sector and decades of accumulated process know-how, proprietary data, and customer relationships. Its manufacturing sector ranks 4th globally by output[17] and accounts for around 30% of EU manufacturing value added (2024), with especially strong positions in capital-intensive segments such as machinery, electrical equipment, and transportation equipment.[18] This industrial depth is reinforced by the world's highest concentration of hidden champions, including global niche leaders such as Herrenknecht (#1 in tunnel-boring machines; more than 5,000 employees) and Trumpf (#1 in industrial lasers; more than 16,000 employees).[19]

Access to Europe's markets enables rapid scaling of business models

450 mn

consumers within reach

Germany pairs direct access to the EU single market of around 450 mn consumers with deeply integrated supply and demand networks and world-class logistics.[20] It is the top export destination for 16 of 26 other EU states and among the top three import sources for 24 of them.[21] Top-tier logistics infrastructure supports reliable cross-border operations and capital-intensive business models at scale, with Germany ranking 3rd (tied) on the World Bank's 2023 Logistics Performance Index.[22] This position will be strengthened as the EU advances single-market integration across capital markets, energy, and labor mobility—with a roadmap targeting the end of 2027 (see sidebar).

"The irony is that American and other global capital currently seem more willing to bet on Germany than Germany itself. Both here and across Europe, we have the technology, the talent, and the industrial base. What we lack is the willingness to concentrate capital and demand behind the companies that can become global leaders. Sovereignty is not achieved by protecting yesterday's industries. It is achieved by building tomorrow's."

—Dr. Jeannette zu Fürstenberg, President and Managing Director, General Catalyst

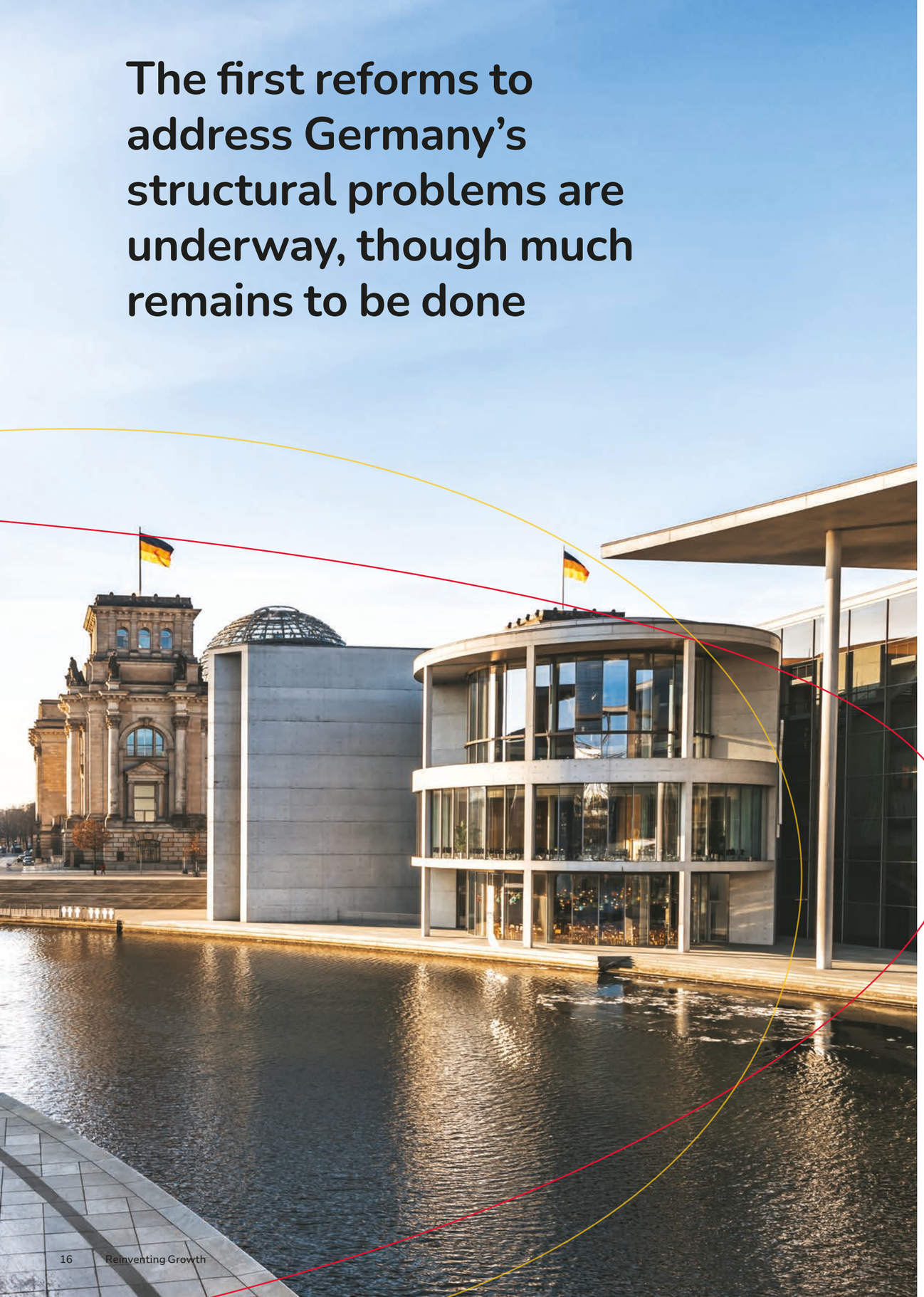
SIDEBAR

One Europe, One Market: Scaling across an integrated Europe

Through the One Europe, One Market roadmap, the EU aims to advance the integration of its single market for goods and services, with the European Parliament, Council, and Commission targeting implementation by the end of 2027.[23] A more integrated single market would give investors increasingly seamless access to 450 mn consumers and $21 tn of GDP, strengthening their ability to build and scale business models across Europe from a single European base.[24] The roadmap focuses on key cross-border enablers, including:

- **Capital markets.** Deeper integration of market infrastructure, expanded securitization, and measures to mobilize long-term savings
- **Energy.** Stronger cross-border grids, eight European "Energy Highways," and more integrated network frameworks
- **Labor mobility.** Easier recognition of qualifications and simpler rules for deploying employees across member states
- **Corporate law and the 28th regime.** Progress toward an EU-wide company form (EU Inc.), designed to simplify digital incorporation and cross-border operations

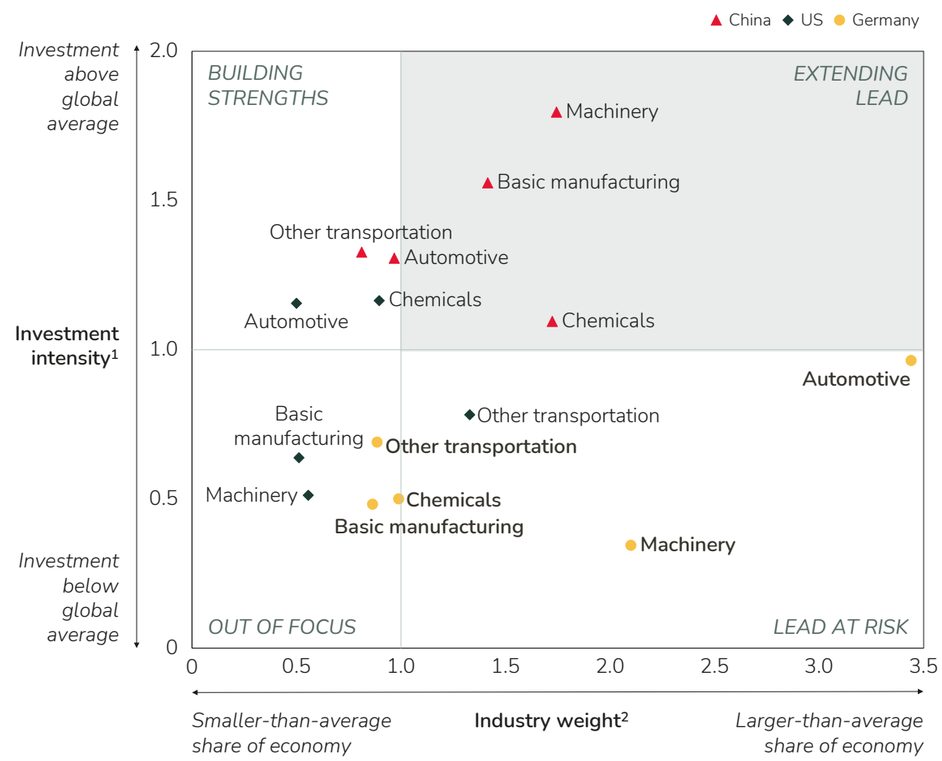
The first reforms to address Germany's structural problems are underway, though much remains to be done



It would be remiss of this report not to address the structural problems that have overshadowed Germany's traditional strengths over the past decade. Business surveys consistently point to a host of competitive headwinds: high energy and labor costs, excessive regulatory burdens and bureaucracy, and high corporate taxes.[25] These problems have not only dampened entrepreneurial spirits in the economy but also resulted in a deep slump in investment across Germany's traditional areas of industrial strength, from machinery and electrical equipment to chemicals (Exhibit 2).[26]

Exhibit 2: Germany has underinvested in its industrial base

Investment intensity and level of specialization by sector, indexed to the global average (1.0)



1. Calculated as a region's share of global gross fixed capital formation in an industry divided by its share of global gross value added in that industry. A value above 1.0 indicates investment above the global average relative to output
2. Importance of industry to the economy, calculated by dividing an industry's gross value added by the gross value added of the country in which that industry is located, compared to the global average

Source: S&P Global Market Intelligence, OECD, Oxford Economics, McKinsey Global Institute analysis

The diagnosis of Germany's structural problems is not new—and the German government has discussed them at length. What *is* new is political momentum to address them. Berlin has committed more than €1 tn in public spending on infrastructure and defense over the next decade, reforming the constitutional debt brake in a strategic bet on future growth. Additionally, it has announced an ambitious reform agenda. Although this agenda could be broader and enacted with greater urgency and confidence, some reforms have already been legislated or await approval by the end of this year.

Because these changes are being introduced gradually rather than through a single “big bang” liberalization, investors might miss incremental but important steps in the right direction: Six reform areas are driving this progress, aimed at lowering the cost of doing business and improving the ability to execute and scale in Germany.

Lowering structural operating costs through …

Competitive, stable industrial power

Where things stand. German industrial electricity prices remain around 60% higher than in France and were more than twice US levels in 2025[27]—weighing especially on energy-intensive industries and emerging demand from data centers and AI. Grid access is an additional bottleneck for data-center investment: New projects in Germany can face connection queues of up to seven years, compared with one to three years in the US overall.[28]

What is moving. Germany is reshaping its energy system to combine expanding renewable energy generation with stronger grids, storage, and hydrogen-ready gas-fired backup capacity, supporting reliable power at stable prices for industry. The government has committed to cutting business electricity prices by €0.05 per kWh through lower electricity taxes and grid charges while investing in storage, grid expansion, and up to 20 GW of hydrogen-ready gas-fired generation capacity.[29] In Northern Germany, abundant wind energy generation can create attractive conditions for renewable power purchase agreements and large power users—an advantage also reflected in Schwarz Group’s planned data-center investment near Rostock.[30] Renewables accounted for 55% of gross electricity consumption in 2025,[31] with a legally binding target of at least 80% by 2030 as part of Germany’s pathway to a climate-neutral power system by 2035 and economy-wide climate neutrality by 2045.[32]

A more flexible labor market at a contained cost

Where things stand. German manufacturing labor costs stand at €49.50 per hour, versus the EU-27 average of €35.00 per hour,[33] while combined employer and employee social-security contribution rates have reached 42.7% of gross wages in 2026.[34]

What is moving. Planned reforms aim to increase labor-market flexibility through tax-free overtime premiums and a shift in the statutory working-time cap from a daily to a weekly maximum.[35] Germany is widening access to skilled international talent for an increasingly digital and technology-intensive economy through dedicated immigration legislation and the Opportunity Card.[36] In parallel, nonwage labor costs—statutory health insurance contribution rates in particular—are being stabilized by legislatively limiting spending increases in the healthcare system,[37] while the government aims to implement the pension reform commission’s recommendations to stabilize the pension system for the next decade.[38]

Improving the investment environment through …

Faster permits and less execution friction

Where things stand. Construction permits take around 200 days to be processed in Germany, compared with 60 days in the US and 40 days in Mainland China,[39] while administrative compliance costs amount to €64 bn a year across the economy.[40]

What is moving. Germany has enacted a sequence of measures to shorten approval timelines for capital-intensive projects. For example, approvals for industrial plants and electrolyzers have been accelerated, with early construction facilitated at existing sites,[41] and planning and approval procedures for energy grids, renewables, and industrial projects have been fast-tracked.[42] Documentation requirements and administrative burden have been further reduced.[43] More is planned, including a general four-month deemed-approval rule for complete applications, under which applications would be treated as approved if authorities do not respond within that period.[44] The new Federal Ministry for Digital and State Modernization is simplifying, digitalizing, and accelerating planning and approval procedures, in part through AI-based solutions.[45]

Incentives and lower taxes for investments

Where things stand. The combined corporate tax burden stands at around 29%, compared with the EU effective average of 19% in 2025.[46]

What is moving. Germany is improving the business case for new investment by reducing upfront costs, widening access to growth and innovation funding, and lowering the long-term tax burden. An accelerated depreciation allowance of up to 30% is improving early-stage cash flows for new investments until the end of 2027.[47] The High-Tech Agenda will provide around €18 bn through 2029 for innovation-intensive investment,[48] while the *Deutschlandfonds* (Germany Fund) is designed to mobilize up to €130 bn in private capital for growth funding.[49] In parallel, the corporate income tax rate will be gradually reduced from 15% to 10% from 2028 to 2032.[50]

Deeper equity and growth capital

Where things stand. Equity-market capitalization stands at around 57% of GDP, versus around 220% in the US, while annual venture capital investment accounts for only 0.05% of GDP, versus 0.62% in the US.[51]

What is moving. Germany is mobilizing more private and institutional capital for high-growth companies while building a broader, long-term domestic equity base. The WIN Initiative mobilized €2.64 bn by the end of 2025, toward a target of €12 bn by 2030,[52] while the *Deutschlandfonds* expands financing for high-growth companies through public–private investment vehicles.[53] Germany is beginning to shift toward greater capital-market openness. Government proposals for tax-advantaged retirement investment accounts and initiatives such as the *Frühstartrente* (early-start pension) are designed to bring more households into capital markets and encourage long-term investing from an early age, thereby laying the foundations for a broader “mindset shift” in society at large.[54]

Research that reaches the market

Where things stand. Germany ranks 5th globally in R&D but only 12th in industry activity;[55] it ranks 4th in public R&D spending and patent applications under the Patent Cooperation Treaty but only 10th in sales of new-to-market and new-to-firm innovations.[56]

What is moving. Germany is strengthening the pathways from research to commercialization through dedicated validation funding and stronger spin-out ecosystems. SPRIND, Germany's federal agency for breakthrough innovation, uses milestone-based funding and multi-stage competitions to advance early-stage technologies toward proven applications,[57] while ten EXIST Startup Factories selected in 2025 connect universities and research institutions with investors and established companies to turn scientific innovation into scalable businesses.[58]

Much of this reform agenda remains a work in progress: Effective implementation is critical, and further measures are needed to sharpen the impact. It would be far too early for Berlin to grow complacent about what has been achieved so far, and government policy alone cannot solve the competitiveness challenges of many of Germany's industrial sectors. Even so, the reforms implemented or announced to date will contribute positively to Germany's economic rejuvenation.

"We must compete at a global scale, especially in future technologies. To do so, we need an economic environment that enables the industrialization of innovation in Germany and Europe—with targeted support rather than broad-based subsidies, plus competitive labor costs, flexible working-time arrangements, and low energy prices."

—Dr. Milan Nedeljković, CEO, BMW

Investment opportunities in five core growth areas: Where Germany's strengths, global capital, and transformation momentum converge

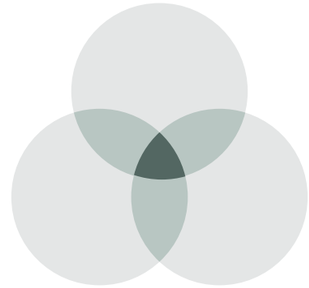
Notwithstanding the German government's reform efforts, it would be premature to predict that Germany will soon return to the growth rates of the "golden decade" of the 2010s, let alone close the growth gap with the US. Even so, Germany's core investment opportunities emerge where three forces meet: a global capital opportunity at scale, a structural competitive position few other markets can replicate, and transformation momentum that creates a compelling investment opportunity to act now.

CAPITAL FLOWS

Attracting capital in global growth areas

TRANSFORMATION MOMENTUM

Building on the dynamics that Germany's government and businesses propel



GERMANY'S RIGHT TO WIN

Turning Germany's strengths into scalable business opportunities

Each investment area offers a ten-year growth runway, backed by constitutional commitments, binding targets, or non-discretionary demand:

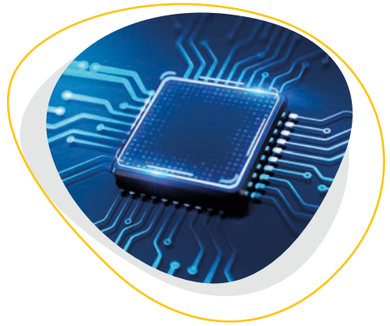
1. AI as a cross-cutting force. AI is reshaping Germany's industrial value chains, from R&D and engineering to production and operations. Expansion of data-center, high-performance computing, and semiconductor capacity provides the infrastructure to scale adoption.

2. Industrial reinvention and next-generation technologies. Germany's industrial and research base offers a platform to reinvent established industries through automation and decarbonization. This base also helps scale high-growth technologies such as biotechnology, autonomous mobility, quantum, and space.

3. Resilient energy systems. Renewable energy generation, grids, storage, backup capacity, and hydrogen infrastructure are expanding to form the reliable, increasingly cost-competitive power base that industrial operations, AI, and next-generation technologies need to scale.

4. Core infrastructure. Upgrades to transportation, digital, and social infrastructure are integrating industrial heartlands, innovation clusters, energy networks, and European markets into a connected growth platform.

5. Security and defense. Rising public commitments are strengthening industrial capabilities and accelerating innovation across defense, cybersecurity, and dual-use technologies, while growing private investment reinforces the sector's momentum.



1. AI as a cross-cutting force

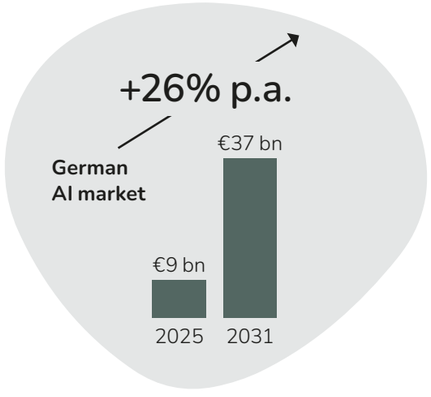
Investment opportunity: Where to invest?

Germany's AI investment opportunity spans two areas. Industrial AI reshapes the industrial value chain: design and engineering (including R&D, simulation, and prototyping), production (including process innovation, planning, and quality control), and operations and maintenance. It is enabled by domain-specific AI models and applications that combine industrial data, software, and physical systems. AI infrastructure poses a second capital opportunity across data centers, high-performance computing, and semiconductor manufacturing. The two reinforce each other: Broader AI deployment increases demand for computing and hardware, while greater infrastructure capacity enables adoption at scale.

CAPITAL FLOWS

How large is the capital opportunity?

- **The global industrial AI market presents a significant opportunity.** It is projected to grow from €39 bn in 2024 to €136 bn by 2030 (a CAGR of around 23%), creating an expanding technology market across industrial design, engineering, production, and operations.[59]
- **Germany's domestic AI market is growing quickly.** It is forecast to exceed €37 bn by 2031, implying growth of more than 26% a year,[60] while German AI startups attracted nearly €3 bn in venture capital in 2025—more than 40% of total German venture capital investment and the strongest AI funding year on record.[61]
- **The infrastructure build-out is accelerating.** Based on investment trends in the first half of 2026, global investment in AI infrastructure and AI model architecture is on pace to increase more than fivefold versus last year.[62] Global data-center capital expenditure rose 57% in 2025 as AI deployment accelerated. In the longer term, revenue from cloud services is projected to reach €1.4–3.0 tn worldwide by 2040.[63] Germany is already seeing substantial capital deployment: More than €3 bn was invested in data-center buildings and technical equipment in 2025, while spending on AI-related hardware such as servers, storage, and networking equipment reached around €12 bn, up roughly 19% year on year.[64] AWS and Microsoft have announced more than €12 bn of infrastructure investment,[65] while Schwarz Digits is investing €11 bn in a new 200 MW data center in Lübbenau and has announced further investment of up to €5.6 bn near Rostock.[66]
- **The global semiconductor market is expanding.** Revenue is projected to reach €1.5–2.1 tn worldwide by 2040, driven by rising demand across AI, the automotive sector, industrial applications, and other digital technologies.[67]



GERMANY'S RIGHT TO WIN

Why Germany?

- **Germany's industrial base sits alongside a dense AI research and startup ecosystem.** Institutions including the German Research Center for Artificial Intelligence (the world's largest independent AI research center), Fraunhofer, Helmholtz, Leibniz, and Max Planck provide foundational and applied research capabilities. Germany hosted 935 dedicated AI startups in 2025 across enterprise functions, technology capabilities, and industries.[68]
- **Germany possesses unmatched proprietary industrial data.** Germany's industrial base, made up of OEMs, equipment and plant builders, and the *Mittelstand* (Germany's core of small and midsize enterprises) supplying them, holds decades of proprietary processes and machine and sensor data from high-complexity production environments—the raw material for domain-specific industrial AI. The federal Manufacturing-X program is making that data usable across companies by building shared industrial data spaces, with ten projects worth around €280 mn.[69]
- **Germany is the EU's largest data-center market.** As of June 2026, Germany hosted 523 data centers; more than 1.3 GW of data-center capacity was operational in 2025, mainly concentrated in Frankfurt—the third-largest national footprint globally.[70] Frankfurt also led Europe's five largest data-center markets in new capacity delivered in 2025, accounting for 135 MW, or around 40% of total additions across these markets.[71]

935
AI startups hosted in Germany in 2025

1/3
of all European chips produced in Germany

- **Germany hosts Europe's leading semiconductor manufacturing cluster.** More than a third of all European chips are produced in Germany.[72] In Dresden alone, GlobalFoundries operates major production facilities, the European Semiconductor Manufacturing Company is investing more than €10 bn in a new semiconductor fab, and Infineon is investing around €3.5 bn in additional production capacity—the latter two supported by €5 bn and €920 mn in German state aid, respectively. This gives Germany a strong position as Europe seeks to expand semiconductor production capacity.[73]

Investment case study: Agile Robots

Agile Robots demonstrates how Germany's research base translates into global industrial AI leadership. Founded as a German Aerospace Centre (DLR) spinoff in 2018, the company scaled to €204 mn in revenue by 2025 by combining AI software with precision robotics. Its Series C financing—led by SoftBank Vision Fund 2, alongside Sequoia and Foxconn—and its 2025 acquisition of BMW's Idealworks unit illustrate both the global capital appetite for German industrial AI and the depth of integration into Germany's existing manufacturing ecosystem.

“Germany brings together the elements the chip industry needs: strong research, highly skilled professionals, experienced production teams, and customers who put chips to immediate use. Here, technology is not merely researched but also translated into industrial value creation. That is a genuine competitive advantage.”

—Jochen Hanebeck, CEO,
Infineon Technologies

CURRENT TRANSFORMATION MOMENTUM

Why now?

- **AI adoption has reached the factory floor.** Some 40% of German industrial companies use AI in production control and planning, and another 38% are planning to.[74] In manufacturing, AI applications increasingly extend into functions such as quality control, production planning, and maintenance, broadening the addressable market for industrial AI solutions.[75]
- **Policy prioritizes AI where Germany has a competitive edge.** Germany’s High-Tech Agenda sharpens the country’s focus on domain-specific AI and industrial deployment rather than general-purpose foundation models. The government aims for 10% of German economic output to be generated on an AI-enabled basis by 2030.[76] As more industry players get involved and more incentives to scale industrial AI adoption are introduced, the impact of the agenda will become greater.
- **Large-scale AI computing capacity has moved into operation.** Public and private projects are expanding access to large-scale computing for research and industrial AI. JUPITER became Europe’s first exascale supercomputer in 2025, ranking among the world’s top five systems, while the associated JUPITER AI Factory is expanding access to AI computing for startups, companies, and research institutions.[77] Deutsche Telekom’s Industrial AI Cloud in Munich has added around 10,000 GPUs for industrial applications[78] and plans to double capacity given high demand.[79]
- **A concrete infrastructure-expansion target is set.** Germany aims to double overall data-center IT connection capacity from 2025 to 2030, and at least quadruple connection capacity for high-performance computing and AI—adding a defined expansion pathway to the private investments already announced by major cloud providers.[80]

Investment case study: Siemens

Siemens shows how Germany’s industrial base can serve as a platform for scaling next-generation manufacturing and industrial AI. The company is investing €500 mn in its Technology Campus in Erlangen, transforming the site into a global development and manufacturing hub for automation, digital twins, AI, and industrial-metaverse applications.[81]

SIDEBAR

Turning industrial know-how into an AI advantage

- **Germany’s industrial base combines deep domain expertise, large pools of real-world operational data, and established global customer relationships.** Across sectors such as machinery, automotive, chemicals, pharmaceuticals, aerospace, and defense, companies have accumulated detailed knowledge of complex production processes and physical systems.
- **This creates a differentiated foundation for industrial AI.** German machinery alone accounts for around one in seven machines used in production worldwide, while one in three is of European origin, giving companies access to data from a broad global installed base.[82] As foundation models become increasingly commoditized, differentiation is likely to shift toward proprietary industrial data and the ability to apply AI reliably in real-world production environments. This provides a strong platform to develop AI solutions in Germany and scale them internationally.

2. Industrial reinvention and next-generation technologies

Investment opportunity: Where to invest?

Germany's industrial base is entering a capital-intensive technology cycle on two fronts: transforming established industries through automation and decarbonization and scaling selected next-generation technologies that build on sophisticated technological capabilities across large segments of the global AI stack. These include autonomous mobility, biotechnology, space, and quantum technology, where global growth opportunities intersect with Germany's industrial, engineering, and research capabilities.[83] The ambition is clear: Use the existing industrial foundation as a platform to develop, industrialize, and scale future technologies with global demand.

CAPITAL FLOWS

How large is the capital opportunity?

Global growth dynamics are opening on both fronts, and Germany is well positioned to capture them—with technologies developed and piloted at home, then scaled to world markets.

Reinventing today's industrial base:

- **Automation and robotics are entering a substantial global growth cycle.** Revenue is projected to reach around €487 bn by 2040—creating opportunities across robotics, sensing, software, systems integration, and production intelligence.[84] Germany's robotics and automation industry generated €15.2 bn in turnover in 2024, supported by Europe's largest operational stock of industrial robots.[85]
- **Industrial decarbonization represents an even larger capital cycle.** Hard-to-abate sectors, including steel, chemicals, cement, and basic manufacturing, will require more than €25 tn in additional capital globally by 2050.[86] In Germany, decarbonizing the steel and chemical industries alone is expected to require around €75 bn of investment by 2050.[87]

€75 bn

required for decarbonizing the German steel and chemical industries

Building positions in tomorrow's growth arenas

- **Autonomous mobility is developing into a major global growth market.** The market for automotive software supporting autonomous driving and advanced driver-assistance systems is projected to grow at around 19% annually through 2035, reaching roughly €43 bn in software revenue alone as increasingly capable systems move into vehicles at scale.[88]
- **Biotechnology and space are developing into large global investment arenas.** Capital deployment in these areas is rising in Germany, too. The global nonmedical biotechnology market is projected to reach €300–796 bn by 2040, while space technologies could reach €880 bn–1.4 tn.[89] Across Germany's broader biotechnology sector, startups attracted €1.8 bn in financing in 2025,[90] while German production of aircraft and spacecraft rose 13% from 2024 to 2025.[91]
- **Quantum technologies are moving from research toward commercial deployment.** The global market across quantum computing, communications, and sensing is projected to reach around €175 bn by 2040, with private quantum-technology startup investment already reaching around €1.8 bn in 2024.[92]

Investment case study: Isar Aerospace

Isar Aerospace shows how Germany's research and engineering base can translate into industrial-scale positions in emerging technologies. The Technical University of Munich spin-off is building production capacity near Munich, targeting up to 40 Spectrum launch vehicles per year. It has raised over €800 mn in backing from German and international investors—including the NATO Innovation Fund, HV Capital, Earlybird, Airbus Ventures, and KfW Capital—demonstrating substantial private-capital backing for capital-intensive new space production in Germany.[93]

GERMANY'S RIGHT TO WIN

Why Germany?

Reinventing today's industrial base

- **Germany is Europe's automation and robotics leader.** It ranks 1st in Europe and 4th globally in robot density, with 449 industrial robots per 10,000 employees, and is Europe's largest robot market—accounting for around 32% of annual installations across the continent.[94] This scale is reinforced by deep capabilities in machinery, sensors, automation engineering, and plant equipment. Decades of accumulated production data across complex manufacturing environments provide a further structural advantage for industrial AI applications that depend on domain-specific process knowledge.[95]
- **Germany pairs heavy industry with the technology to decarbonize it.** The country has a large domestic base of hard-to-abate industries but is also home to many leading manufacturers of the technologies needed to decarbonize these industries. Germany's green tech sector already accounted for €314 bn of national gross value added in 2023, which could exceed €620 bn in 2045 if climate-neutrality and circular-economy targets are met.[96] Germany is also becoming a proving ground for first-of-their-kind industrial decarbonization technologies: ThyssenKrupp Steel is building a hydrogen-capable direct-reduction plant in Duisburg that will save up to 3.5 mn tons of CO_2 a year,[97] while BASF, SABIC, and Linde jointly operate the world's first large-scale demonstration plant for electrically heated steam-cracking furnaces in Ludwigshafen.[98] These projects offer concrete pathways to develop and validate technologies in Germany that can then be deployed in industrial markets worldwide.

Building positions in tomorrow's growth arenas

- **Autonomous mobility builds directly on Germany's engineering and software strengths.** German automotive companies spent around €59.4 bn on R&D in 2024, including more than €31 bn domestically, while manufacturers and suppliers are strongly positioned in highly automated driving, increasingly pooling capabilities in vehicle software and open-source development.[99]
- **Germany boasts Europe's largest base of biotechnology companies and a fast-maturing program pipeline.** The country's 1,020 biotechnology companies totaled €4.6 bn in R&D spending in 2024.[100] Progress and innovation can build on Germany's deep pharmaceutical, chemical, and process-engineering capabilities.

- **Quantum and space build on strengths embedded in Germany's industrial and research base.** The quantum sector draws on precision optics, photonics, lasers, and advanced engineering, and the space sector on aerospace research, precision manufacturing, and engineering. The national 2026 Quantum Computing Competition funds startup- and industry-led development against measurable milestones to support pilot-production infrastructure.[101] Germany's growing "new space" sector is increasingly driven by young companies commercializing new technologies,[102] while applied-research institutions and pilot facilities provide a route from scientific development to industrial production.[103]

Investment case study: ZEISS

ZEISS illustrates how established industrial and research clusters can support substantial high-tech investment. The company is investing more than €300 mn in its high-tech site in Jena, bringing together development, production, and research activities at its historic founding location. The ongoing expansion strengthens Jena's role as a major technology hub and demonstrates how deep regional capabilities in optics, photonics, engineering, and applied research can support advanced manufacturing and long-term industrial growth in Germany.[104]

CURRENT TRANSFORMATION MOMENTUM

Why now?

- **Industrial transformation is moving into large-scale deployment.** Germany is increasingly supporting industrial conversion through broader market mechanisms that reduce investment risk and create demand for low-carbon products. Carbon Contracts for Difference provide up to 15 years of protection against carbon and energy price risks.[105] In parallel, Germany is developing lead markets for low-carbon steel, cement, and chemicals, while the proposed EU Industrial Accelerator Act would introduce low-carbon and "Made in EU" criteria in public procurement and support in selected strategic sectors to create predictable demand.[106] These mechanisms complement direct support for individual conversion projects, including around €1.3 bn in public funding for Salzgitter's €2.7 bn SALCOS transformation and around €2.0 bn for ThyssenKrupp's tkH_2Steel project.[107]
- **Ambitious targets are set for next-generation technologies.** In autonomous mobility, Germany is shifting from pilots toward scaled deployment, with new federal funding supporting the transition into regular public-transportation and freight operations; cities such as Hamburg are preparing autonomous services for scalable operation.[108] Germany's High-Tech Agenda translates technology priorities into measurable implementation milestones. In biotechnology, GO-Bio Next will provide more than €100 mn through 2032 to turn biotechnology research into market-ready companies and support subsequent scaling.[109] The agenda's biotechnology roadmap targets €5 bn in annual private R&D and scaling investment by 2028, alongside a 1:1 minimum ratio of private to public funding in partnerships supported by the Federal Ministry of Research, Technology and Space.[110] The space arena shows strong momentum toward commercialization: Germany committed around €5.4 bn to European Space Agency programs in 2025—becoming its largest contributor—including around €873 mn for climate- and environment-monitoring satellites, more than €300 mn for satellite navigation, and €120 mn for advanced space technologies.[111] In quantum technologies, the government is targeting at least three German pilot lines in the European Lab-to-Fab network by Q4 2026 and at least two error-corrected quantum computers at the top European level by 2030.[112]

"Germany's strength lies in the depth and breadth of its industrial ecosystem, comprising startups, Mittelstand *companies, and large corporations. The chemical industry, in particular, connects raw materials, technologies, and customers across multiple value chains. This creates attractive investment opportunities—for example, in highly specialized catalysts, innovative processes, and high-purity chemicals for the semiconductor industry."*

—Dr. Markus Kamieth, CEO, BASF

SIDEBAR

Mittelstand succession—continuity and growth opportunity

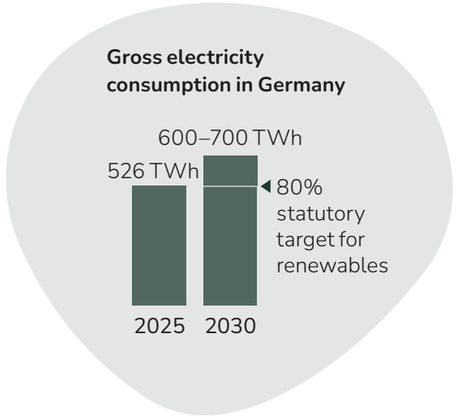
- **The *Mittelstand* opportunity is substantial.** Germany's *Mittelstand* is one of the world's largest pools of privately held industrial companies, and around 550,000 of them face an ownership transition between 2025 and 2029.[113]
- **Succession pressure is both demographic and structural.** The average *Mittelstand* owner is 54, and a shortage of family and external successors is widening the gap between businesses seeking succession and available buyers.[114]
- **Exceptional asset quality underpins the investment opportunity.** Germany is home to about 1,600 hidden champions—roughly 40% of the world's total—whose engineering know-how, customer relationships, and export positions will keep them strategically relevant well beyond the immediate ownership transition.[115]
- **These businesses are highly profitable.** German *Mittelstand* companies posted an average return on sales of 7% in 2024, holding steady over the prior three years.[116]
- **The succession market remains undersupplied.** There are only about four interested buyers for every ten companies seeking a successor. Transactions involving small and midsize enterprises in DACH clear at roughly 4.5–7.0x EBITDA, letting disciplined buyers acquire profitable niche leaders below large-cap valuations.[117]

For long-term strategic investors, family offices, and entrepreneurs pursuing ownership through acquisition, *Mittelstand* succession offers a route to preserving industrial capabilities, supporting automation and digitalization, and opening up growth in globally competitive niches.

3. Resilient energy systems

Investment opportunity: Where to invest?

Germany's energy transition creates a large infrastructure investment cycle across generation, flexibility, networks, and digital system control. Gross electricity demand is expected to rise. Estimates for 2030 range between 600 and 700 TWh, up from around 526 TWh today, while Germany maintains its statutory target for renewables to cover at least 80% of gross electricity consumption by 2030.[118] A key ambition is to synchronize the expansion of generation capacity and grid infrastructure, ensuring that both scale in step with rising electricity demand. As the system becomes more decentralized and electrified, the integration of generation, grids, storage, demand, and digital control will increasingly determine the speed and cost-efficiency of the transition—making investment in grid digitalization, AI-enabled operations, and intelligent system management as important as physical assets. Beyond this cycle, fusion is a longer-horizon option that Germany is funding today, with a declared ambition of hosting the world's first fusion power plant.[119] Reliable energy will be critical to industrial competitiveness as manufacturing, transportation, building, and data infrastructure become more electricity intensive.



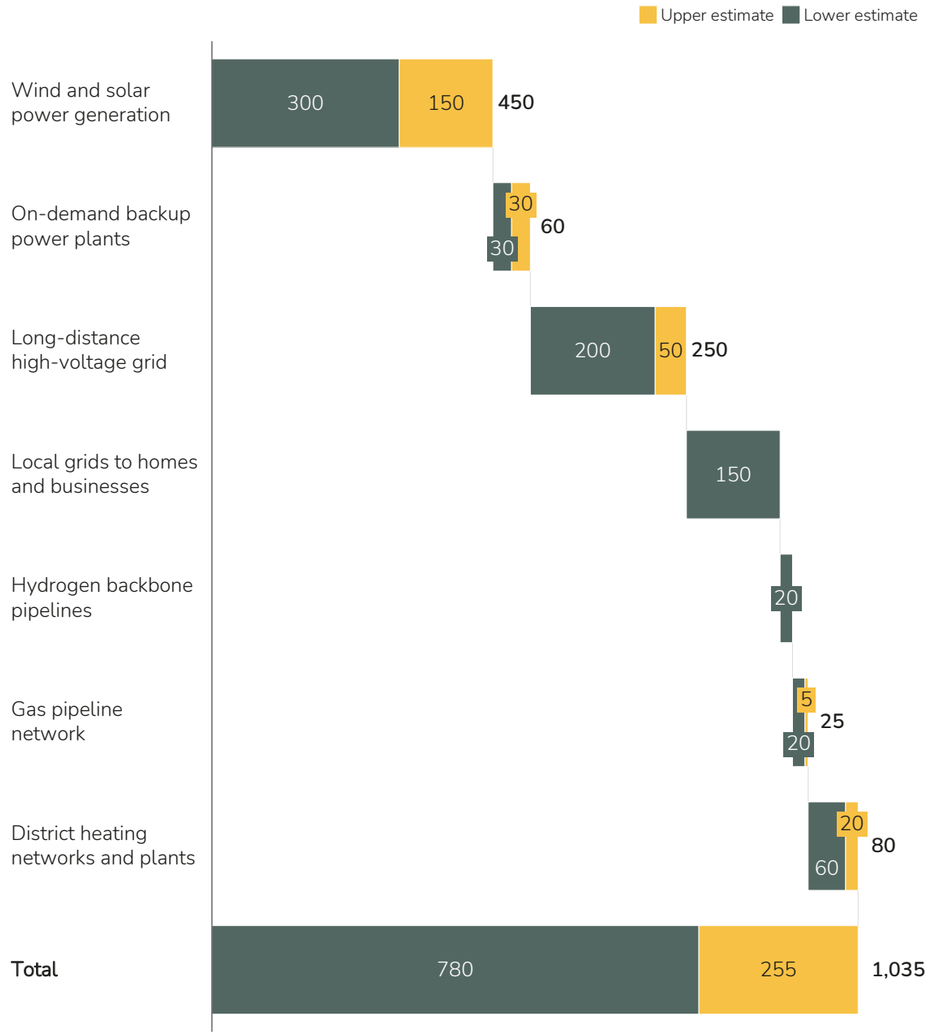
CAPITAL FLOWS

How large is the capital opportunity?

- **The current global investment cycle is immense.** Around €2.9 tn flowed into the global energy system in 2025, and global installed renewable capacity is projected to reach 2.6x its 2022 level by 2030.[120]
- **Fusion is attracting a growing pool of longer-horizon capital.** Fusion companies worldwide raised a record €4 bn in the 12 months to July 2026, up 69% year on year,[121] while Germany has committed more than €2 bn through 2029 to fusion research and infrastructure[122] and established dedicated fusion hubs that bring together research and industry players to build shared capabilities.[123]
- **Germany's investment need is substantial.** To meet its statutory commitments, Germany's energy system requires €780 bn–1.04 tn by 2035, with renewables (€300–450 bn) and grids (€350–400 bn) accounting for around 83% of the estimated total (Exhibit 3).
- **Bottlenecks are creating a fast-growing storage market.** Grid congestion cost around €3.1 bn in 2025, and 3.5% of renewable energy generation had to be curtailed for lack of transportation and storage capacity.[124] The German storage market grew 31% to €15.2 bn in 2025, with large-scale system storage up 72% to €5.5 bn, and is forecast to reach €17.1 bn in 2026.[125]

Exhibit 3: Transforming the German energy system could require almost €1.04 tn

Estimated cumulative investment need, 2025–2035, € bn



Source: Federal Ministry for Economic Affairs and Energy, Federal Network Agency, German Fuel Institute, Prognos, The Energy Efficiency Association for Heating, Cooling and CHP, Association of Local Public Utilities, press releases, McKinsey analysis

Investment case study: TenneT Germany

TenneT Germany shows how regulated electricity grids can mobilize large-scale institutional equity in Germany's energy infrastructure. The separation of the German transmission network from its Dutch parent was structured as a multi-part investor solution: The German government acquired 25.1% via KfW for around €3.3 bn, while APG, Norges Bank Investment Management, and GIC committed a combined €9.5 bn of equity for a joint 46.0% stake, and the Dutch state retained the remaining 28.9% through the original TenneT holding. The transaction shows that transmission networks are among the parts of Germany's energy infrastructure where institutional capital is being mobilized not only through debt instruments but also through direct equity ownership.[126]

GERMANY'S RIGHT TO WIN

Why Germany?

- **Germany operates one of the world's largest renewable energy systems.** It added nearly 21 GW of renewable capacity in 2025, lifting installed capacity by 11% to almost 210 GW—an established base for further investment in generation, flexibility, and network infrastructure.[127]
- **A stable regulatory framework provides long-term visibility.** The Renewable Energy Sources Act has offered a continuous regulatory framework since 2000, supporting Germany's long-term renewable energy expansion and providing visibility for long-term investments.[128]
- **Rising variable generation is driving demand for storage and flexibility.** Around 7.4 GW of large-scale battery storage was installed or under construction in 2025, with capacity expected to reach 41–94 GW by 2037.[129]
- **Germany combines renewable scale with high grid reliability.** Unplanned outages averaged just 11.7 minutes per customer in 2024, keeping the country's grid among the most reliable in Europe.[130] Maintaining that reliability as distributed assets grow will require significant expansion of digital grid-management capabilities.

11%

increase in installed renewable capacity in 2025

Investment case study: RWE

The Gundremmingen battery project shows how Germany is repurposing legacy energy sites into flexible, grid-stabilizing facilities. RWE is investing around €230 mn to build the country's largest battery-storage facility to date (a 400 MW / 700 MWh system) on the site of the decommissioned Gundremmingen nuclear plant in Bavaria, reusing the plant's existing high-voltage grid connection. Some 850,000 lithium-iron-phosphate cells across more than 200 containers, paired with over 100 ultra-fast inverters, will absorb or release power within milliseconds and can discharge at full output for nearly two hours, buffering renewable generation when wind and sunlight fall short. The battery anchors a broader build-out at the site, where RWE is also planning a 55 ha solar park and a gas-fired power station—turning a former nuclear location into an integrated hub for renewables, storage, and backup capacity. Commercial operation of the battery facility is scheduled for 2028.[131]

CURRENT TRANSFORMATION MOMENTUM

Why now?

- **A large, shovel-ready project pipeline is in place.** Nearly 20.8 GW of onshore wind capacity received planning permission in 2025, adding to the pipeline of projects ready for construction, backed by around €15 bn of net investment in solar and €11 bn in wind in 2025.[132]
- **A new market for controllable capacity is being created.** The StromVKG act, adopted in July 2026, establishes the framework for new, controllable capacity. Following the European Commission's state-aid approval, the Federal Network Agency launched the inaugural auction for long-duration capacity on September 8, 2026, which was significantly oversubscribed. A second auction is scheduled for December 2026, bringing the total for both to around 10 GW, with another 2 GW to follow in May 2027. Further technology-open auctions will include storage, flexible demand, and existing assets.[133]
- **Grid build-out is accelerating.** The Federal Network Agency approved around 2,000 km of power lines—45% more than in 2024—and completed planning approval for the major A-Nord, Ultranet, SuedLink, and SuedOstLink north–south corridors.[134]
- **Approval timelines are compressing.** Average permitting duration for onshore wind fell by around a third between 2023 and 2025, to under 17 months,[135] while a full planning stage has been removed for new transmission projects, with federal spatial planning replaced with designated infrastructure areas since December 2025.[136]
- **The hydrogen backbone is financed and underway.** The core hydrogen network approved in 2024 comprises 9,040 km of pipelines. Investment of around €18.9 bn is expected, with around 60% dedicated to converting existing natural-gas infrastructure. A €24 bn KfW credit facility finances the amortization account supporting the build-out, with the first €172 mn payment made in March 2025.[137]

"For RWE, Germany remains an attractive investment location. Political and institutional stability, a reliable legal framework, and a highly skilled workforce provide a good environment for long-term investments as we make them in the energy system."

—Dr. Markus Krebber, CEO, RWE

4. Core infrastructure

Investment opportunity: Where to invest?

Over the next decade, demographics, digitalization, and deferred maintenance are converging into a substantial infrastructure investment need. Germany's infrastructure investment opportunity spans three connected areas: Physical infrastructure requires renewing, expanding, and digitalizing rail, roads, and other transportation networks. Digital infrastructure requires building out fiber networks, mobile networks, and the systems needed to operate them. Social infrastructure requires modernizing hospitals, healthcare delivery, schools, and childcare as demographic change and digitalization reshape demand. The opportunity extends from construction, equipment, and digital systems to network operations, services, and long-duration infrastructure assets, with public funding anchoring a multi-year modernization cycle.

CAPITAL FLOWS

How large is the capital opportunity?

- **Infrastructure has become a core institutional asset class.** Private infrastructure assets under management grew from around €160 bn in 2010 to roughly €1.2 tn by early 2024, with a further €295 bn of committed but undeployed capital seeking assets.[138]
- **Long-term capital is structurally seeking stable, inflation-linked returns.** As pension and insurance systems expand funded, capital-based pillars, they need assets that match long-dated liabilities with predictable cash flows—a profile that infrastructure fits. Leading pension funds already allocate 5–20% to the asset class and are expected to raise allocations further.[139]

€500 bn

Special Fund for Infrastructure and Climate Neutrality

- **Germany's own capital need is substantial, with a broad base.** As shown in Exhibit 4, Germany requires €700 bn–1 tn over the next decade across transportation, digital connectivity, and social infrastructure. The need is reinforced by demographics—the share of people aged 67+ is projected to rise from 20% in 2024 to 25–27% by 2038, lifting healthcare demand (Exhibit 4).[140]

Investment case study: Vantage Towers

Vantage Towers shows how a digital-infrastructure platform anchored in Germany can attract global infrastructure capital at scale. After its 2021 listing, Vodafone established a co-control partnership with Global Infrastructure Partners and KKR that valued Vantage Towers at €16.2 bn in equity. In 2024, Vodafone sold a further 10% stake in the holding company for €1.3 bn, bringing Vodafone and the GIP/KKR-led consortium to a 50:50 ownership structure and taking Vodafone's cumulative net proceeds from the sell-down to €6.6 bn. The partnership is designed to support additional tower deployment, co-location, small cells, and other infrastructure required for 5G expansion—illustrating the ability of a Germany-anchored connectivity platform to attract long-term global infrastructure capital.[141]

GERMANY'S RIGHT TO WIN

Why Germany?

- **Germany offers investors a large installed asset base to modernize and scale.** Europe's largest rail-freight network (roughly 126 bn ton-km in 2024), around 39,900 km of rail, 13,200 km of freeway, mobile broadband coverage above 98%, and 37 university hospitals provide a broad base for brownfield investment in modernization, digitalization, and capacity expansion.[142]
- **High utilization underwrites demand-backed returns.** Germany's networks are used intensively: Rail traffic has risen more than 40% since 2005, and the country's railway infrastructure management organization, DB InfraGO, has formally declared major nodes (Hamburg, Rhine/Ruhr, Rhine/Main, and Berlin) as overloaded. *Autobahnen* make up under 6% of the long-distance road network but carry a disproportionate share of roughly one-third of all road vehicle mileage. For investors, high utilization means modernized assets or critical extensions are productive from day one and returns are backed by proven demand rather than speculative capacity.[143]
- **Outpatient care offers consolidation opportunities.** The healthcare market is fragmented due to physician retirement and rural coverage gaps, leaving it ripe for consolidation. There is also growing scope for technology-enabled care models.

CURRENT TRANSFORMATION MOMENTUM

Why now?

- **A €500 bn special fund has moved from commitment to deployment.** Germany's Special Fund for Infrastructure and Climate Neutrality provides a constitutionally anchored 12-year framework (2025–2036): €300 bn for federal investments, €100 bn for states and municipalities, and €100 bn for the Climate and Transformation Fund. The framework was created in March 2025, implementing legislation entered into force in October 2025, and €24 bn was disbursed in that year. For 2026, the federal government plans around €58 bn in spending from the fund, providing substantially greater visibility for multi-year infrastructure programs.[144]
- **Funding is translating into specific project pipelines.** Around €169 bn of federal investment is planned through 2029 (rail, roads, bridges, waterways). The 2026

economic plan has already allocated around €16.30 bn to federal rail maintenance, €2.45 bn to implementation of the European Rail Traffic Management System, €3.50 bn to the Hospital Transformation Fund, €2.26 bn to broadband expansion, and €940 mn to childcare infrastructure. This converts the broad funding envelope into visible pipelines across physical, digital, and social infrastructure.[145]

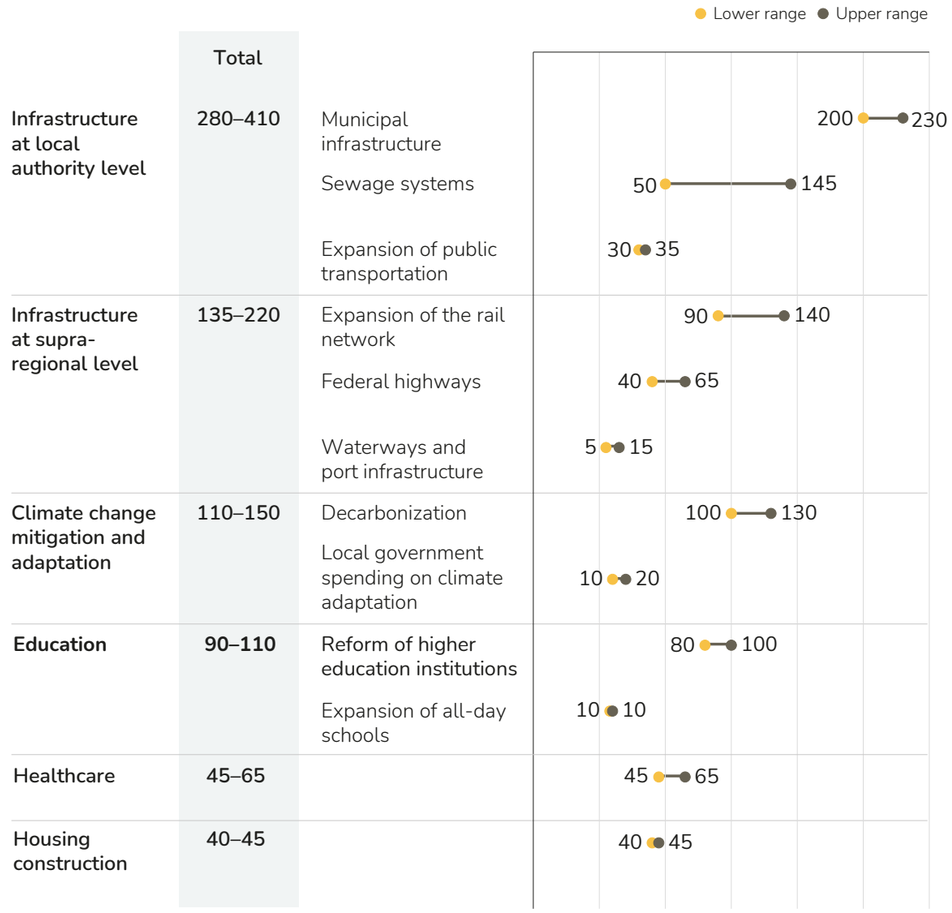
- **Germany's *Autobahnen* will become investable.** The German government is working on opening up its federal highway operator, Autobahn GmbH, to private capital by providing it with its own resources (toll payments) alongside federal funding and establishing the legal basis for it to incur debt or take on loans.
- **Private digital infrastructure capital is flowing at scale.** In 2025, telecommunications companies invested around €15.3 bn in fixed assets in Germany, and Deutsche Telekom—the largest single investor among German operators—invested €5.9 bn in its German networks. By mid-2025, fiber-to-the-building/home reached 52.8% of homes passed, with 27.3% connected—leaving further investment potential in network expansion, densification, and customer activation.[146]
- **Healthcare modernization has moved into implementation.** The €50 bn Hospital Transformation Fund (2026–2035) became operational in 2026, with 254 funding applications in the first round and initial approvals issued in April 2026—creating a concrete pipeline for restructuring and modernizing hospital infrastructure.[147]

"We see significant potential to deliver infrastructure projects faster and at scale by bundling similar projects in and across municipalities and using repeatable construction methods. For recurring building types such as schools, this approach can reduce costs and construction time while maintaining consistent quality and increasing attractiveness for investors."

—Jan-Hendrik Goldbeck, Co-CEO, Goldbeck

Exhibit 4: **Germany's total infrastructure investment need ranges from €700 bn–1 tn**

Investment need, € bn



	Total		Lower range	Upper range
Infrastructure at local authority level	**280–410**	Municipal infrastructure	200	230
		Sewage systems	50	145
		Expansion of public transportation	30	35
Infrastructure at supra-regional level	**135–220**	Expansion of the rail network	90	140
		Federal highways	40	65
		Waterways and port infrastructure	5	15
Climate change mitigation and adaptation	**110–150**	Decarbonization	100	130
		Local government spending on climate adaptation	10	20
Education	**90–110**	Reform of higher education institutions	80	100
		Expansion of all-day schools	10	10
Healthcare	**45–65**		45	65
Housing construction	**40–45**		40	45

Source: IW/IMK, KfW Kommunalpanel, German Institute for Economic Research, Dezernat Zukunft, Federation of German Industries, McKinsey analysis

Investment case study: A3 highway

The widening of a 76 km stretch of Germany's A3 highway to six lanes between the Biebelried and Fürth/Erlangen interchanges is the country's largest public–private partnership infrastructure project to date: a €2.8 bn contract running to 2050. Construction was completed in mid-2026 after just over six years, and the project company, A3 Nordbayern, is now in charge of operation and maintenance of the stretch, being paid according to road availability and quality—with around €1.2 bn of debt provided by many institutional financiers, including the European Investment Bank and KfW. This project shows how the availability-payment model scales German transportation infrastructure and draws in institutional lenders, providing the predictable, long-dated cash flows that infrastructure investors seek.[148]

5. Security and defense

Investment opportunity: Where to invest?

Germany is pursuing one of Europe's most fiscally ambitious security strategies. The government aims to raise core defense spending to 3.5% of GDP by the end of the decade. This entails a steep ramp-up in defense procurement, designed to strategically expand the existing defense manufacturing sector along the full value chain alongside increased additional security-related spending. The build-up creates investment opportunities across three areas: production and industrial capacity (equipment and ammunition, the supply chains and critical materials that feed them, as well as the supporting infrastructure), next-generation defense and dual-use technologies (AI, autonomy, sensors, secure communications, space, and cyber, serving both security and civilian applications), and security and resilience infrastructure (critical-infrastructure protection, civil preparedness, and cybersecurity). The investment opportunity spans technology development, industrial scale-up, production capacity, and long-term operations, as Germany seeks to expand strategically relevant capabilities at home and across Europe while remaining integrated in European and allied supply chains.[149]

CAPITAL FLOWS

How large is the capital opportunity?

- **NATO's spending commitment has reset the baseline.** Allies have committed to investing 5.0% of their GDP annually by 2035—at least 3.5% for core defense and up to 1.5% for security-related spending, including critical infrastructure, resilience, and the defense industrial base.[150]
- **The industry is already converting demand into record revenues and order backlogs.** Global arms sales of the SIPRI Top 100 reached a record €600 bn in 2024, up 5.9% year on year. Europe's primes are filling their books faster than they can produce: Saab closed 2025 with a record €24.7 bn backlog (up 47% year on year), Thales with a record order book above €53.0 bn, and Leonardo at €46.6 bn.[151]

€184 bn

public defense budget by 2030

- **Private capital is following fast.** European defense, security, and resilience startups raised a record €7.70 bn in 2025, up 55% year on year, with Germany attracting nearly a quarter of the total at around €1.86 bn.[152]
- **Germany is playing an integral part in Europe's defense build-up.** Equipment budgets across European NATO nations are set to roughly double, from €160 bn in 2025 to €350 bn by 2032 in an ambitious acceleration scenario. Germany accounts for around €50 bn of that growth, expanding its equipment budget at around 17% per year, versus an average of 11% by other European NATO nations. For investors, this places Germany at the center of Europe's fast-growing defense capital pool, with anchor demand scaling faster than the regional average.[153]

GERMANY'S RIGHT TO WIN

Why Germany?

- **Europe's largest domestic market.** Germany's defense budget is set to expand further to €183.7 bn by 2030, consolidating the continent's biggest single demand pool where suppliers can scale production (Exhibit 5).
- **Full-spectrum system houses and a dense *Mittelstand* provide established anchor programs and a wide field of scalable specialists.** Germany spans nearly all major defense domains: land systems (e.g., KNDS Deutschland, Rheinmetall), naval platforms (e.g., TKMS, NVL), military aerospace (e.g., Airbus Defence and Space, MTU Aero Engines), and air defense and guided weapons (e.g., Diehl Defence, MBDA Deutschland), supported by a broad base of specialized small and midsize suppliers (e.g., RENK, Junghans Microtec). The main exception is combat air, developed in multinational consortia rather than by a single national prime. The sector generates roughly €47 bn in direct annual revenue and employs around 387,000 people, with the *Mittelstand* accounting for 39% of the sector's value added.[154]
- **The defense-tech and dual-use ecosystem is growing quickly.** Munich is Europe's leading defense, security, and resilience startup hub, and AI—the largest technology segment—attracted 44% of all European venture funding in this arena in 2025. Germany is also strengthening civilian–defense technology links in areas such as AI, drones, robotics, space, and satellite communications, broadening the potential application base for new technologies.[155]
- **A broader manufacturing base offers ready capacity.** KNDS has converted the former Alstom plant in Görlitz to produce Leopard 2, Boxer, and Puma vehicles, investing around €100 mn and growing the site from roughly 300 employees to more than 400. It has also partnered with automotive supplier Dräxlmaier to build Boxer mission modules. This shows how existing plants, engineering capabilities, and skilled labor can support the expansion of defense production.[156]
- **Export channels extend the market beyond domestic demand.** Germany ranks 5th worldwide in major-arms exports, with government-confirmed approvals reaching €12.8 bn in 2024—a figure set by a historically restrictive licensing regime that signals headroom should export policy loosen.[157]

Investment case study: Helsing

Helsing shows how German defense technology can attract international growth capital at scale. Founded in Munich in 2021, the defense AI company raised €1.6 bn in a Series E funding round in July 2026, valuing it at €16 bn. The round included Dragoneer, Lightspeed, Iconiq, Goldman Sachs Alternatives, JPMorganChase, CPP Investments, and General Catalyst, alongside existing investors such as Prima Materia, Accel, and Greenoaks. The financing reflects the scale of international growth capital now backing next-generation defense technology developed in Germany as European and allied demand expands.[158]

CURRENT TRANSFORMATION MOMENTUM

Why now?

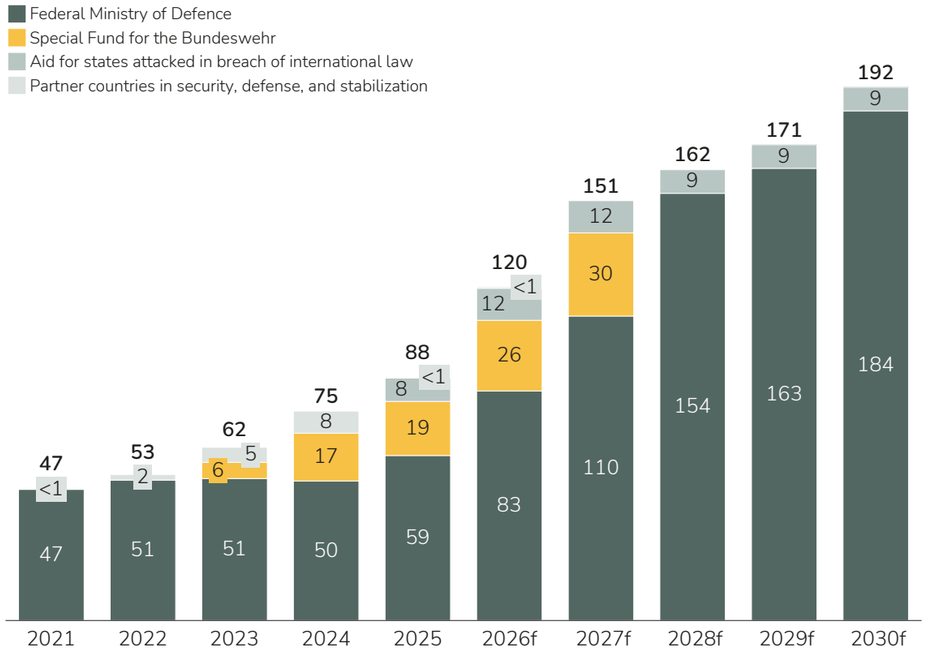
- **Structural financing reform is translating into a sharp, sustained budget ramp-up.** Following the 2025 constitutional reform, qualifying defense and security expenditure above 1% of GDP is exempt from the regular debt-brake borrowing limit, aiming to reach 3.5% of GDP for defense by the end of the decade. This has put the Federal Ministry of Defense budget on a steep trajectory—from €83 bn in 2026 to €110 bn in 2027 and €184 bn by 2030, with the Special Fund for the Bundeswehr adding a further €26 bn in 2026 and €30 bn in 2027 (Exhibit 5).[159]
- **Multi-year procurement is turning budgets into demand visibility.** Larger, longer-term procurement programs across air defense, land systems, naval platforms, and combat aircraft give suppliers the certainty to invest in production capacity, equipment, and supply chains.[160]
- **Space is emerging as a major demand pool.** Germany plans to invest around €35 bn in space projects and a space security architecture through 2030, including reconnaissance and secure communications. Demand is already translating into contracts: Rheinmetall ICEYE Space Solutions received a Bundeswehr contract worth around €1.7 bn for access to a SAR satellite reconnaissance constellation from the end of 2025 through 2030.[161]
- **Cybersecurity is shifting from discretionary to structural spending.** Germany's 2025 NIS2 implementation extended cybersecurity and reporting obligations to a broader group of companies and sectors, turning security investment from an optional cost into a baseline regulatory requirement.[162]

"German security technology enjoys a high level of trust among decision-makers globally. This gives Germany an advantage when entering new markets and developing innovations. By directing a greater share of security and defense spending toward innovation and technology, Germany can strengthen the sector's growth and export potential. Giesecke+Devrient is already contributing by developing security technologies that protect critical infrastructure worldwide."

—Dr. Ralf Wintergerst, CEO, Giesecke+Devrient

Exhibit 5: **Germany's defense budget is planned to increase significantly within a decade**

Germany's defense budget, € bn



Source: Federal Ministry of Finance, German Federal Budget, McKinsey analysis

Investment case study: Rheinmetall

Rheinmetall's Unterlüß plant exemplifies how defense demand can be swiftly converted into physical capacity. The arms manufacturer invested nearly €500 mn in the new ammunition plant and built it in about 15 months. The plant's output is expected to ramp up to 350,000 rounds per year at full capacity in 2027. This example demonstrates Germany's ability to translate multi-year order flow directly into large-scale industrial investment.[163]

Turning opportunity into investment: Entry points for capital across Germany's growth areas

The five growth areas outlined in the previous chapter translate into concrete investment entry points—from foreign direct investment through greenfield and brownfield projects to investments in companies, infrastructure assets, and structured investment vehicles. Different types of capital can be deployed across these areas today, while evolving market structures are creating additional routes for investment.

"Germany has a once-in-a-century opportunity to combine its engineering strength with digital innovation and once again set the global standard. Microsoft is investing more than ever to provide the capacity Germany needs, as a long-term commitment to our partners, customers, and the country."

—Agnes Heftberger, Corporate Vice President and CEO, Microsoft Germany and Austria

AI as a cross-cutting force

Germany's industrial AI ecosystem offers direct entry points for investors. Industrial companies can establish R&D and innovation centers in Germany's manufacturing hubs, while venture and growth investors can back robotics, AI-software, and industrial-tech companies linked to leading technical universities and research institutes. Industrial data and AI platforms offer a further route to participate in the scaling of real-world AI applications.[164]

Data centers offer one of the most direct entry points into Germany's AI build-out. For institutional investors, the appeal lies in large project sizes, long-duration usage or lease contracts, and demand anchored in the broader digitalization of the economy. Compared with software or early-stage AI applications, data centers offer asset-backed exposure and clear routes to debt, equity, and platform-level investment. For international investors in particular, Germany offers the opportunity to deploy capital at scale in an established yet still expanding market at the heart of Europe's AI infrastructure build-out. The main constraint—power grid access—is set to ease over the coming years.[165]

The German market already shows how this model can work. Digital Realty, a real estate investment trust, has built a strong position in the Frankfurt area, while NTT Global Data Centers continues to expand German data-center capacity.[166] Platforms such as Vantage Data Centers, Data4, and nLighten are backed by infrastructure funds or institutional investors. Their presence demonstrates both the scalability of the German market and its ability to absorb the large ticket sizes that global institutional investors seek.

Other types of digital infrastructure such as fiber-optic or mobile networks, offer lucrative opportunities for institutional investors. Practice shows that they can participate in the expansion through equity investments, infrastructure platforms, bonds, or debt capital. A distinct advantage is the political openness toward the involvement of private companies, which have dominated the infrastructure sector in Germany for years.[167]

"As AI makes technology easier to build, Germany's industrial depth becomes more valuable, not less. The combination of engineering talent, proprietary data, and sophisticated customers can be a real competitive advantage—if we give founders the capital, speed, and market access to scale globally."

—Dominik Stein, Senior Partner, Scaleup Europe Fund and Head of EQT Growth, EQT

Industrial reinvention and next-generation technologies

Industrial transformation offers asset-backed entry points across established companies and production sites. Investors can finance automation equipment, robotics, energy-efficient machinery, electrified processes, and low-carbon production lines through corporate debt, leasing, project financing, or direct equity. Large conversion programs in steel, chemicals, and other hard-to-abate industries can support long-duration capital structures, particularly where public guarantees, Carbon Contracts for Difference, or lead-market mechanisms reduce risks related to technology scale-up and performance, energy prices, and demand.[168]

Next-generation technologies create a second set of entry points across the innovation funding cycle. Venture and growth investors can provide equity to robotics, quantum, biotechnology, and space companies as they move from research and demonstration into pilot production and commercial scale. Strategic investors can complement capital with industrial validation, manufacturing capacity, and customer access, while later-stage investors can finance dedicated facilities, equipment, and contract-backed expansion once technologies reach deployment.

***Mittelstand* succession offers a complementary route into proven industrial assets.** Private-equity firms, family offices, strategic buyers, and entrepreneurs can acquire profitable niche leaders facing ownership transitions, then deploy follow-on capital for automation, digitalization, decarbonization, and international expansion. For investors able to combine patient capital with operational expertise, this provides exposure to established cash flows and proprietary know-how, alongside the opportunity to build scaled industrial platforms through consolidation.

Resilient energy systems

Germany's energy sector is a natural entry point for institutional and strategic investors. Its infrastructure offers established routes for private capital and operators, backed by mature market structures and political support for private investment. The sector is sufficiently regulated for cash flows to be stable and predictable, and risk-adjusted returns on Germany's energy transformation tend to be high, with strong diversification opportunities.

Renewable generation offers scale and long-term contracted cash flows. For large investors, offshore wind is particularly attractive, given its high capital requirements and contracted, long-duration revenues, including projects with ticket sizes exceeding €1 bn in single cases.[169] Revenue models are also diversifying, which matters for investors: Direct marketing and power purchase agreements are gaining traction, and new plants no longer earn remuneration for power fed in during negative-price hours. This shifts co-located battery storage from an add-on to a standard feature of new projects, opening up integrated generation-plus-storage business models.

Electricity networks offer an even larger capital-deployment opportunity. Transmission grids can absorb debt and equity at scale, as the recent TenneT transaction illustrates. Distribution grids are more fragmented, but consolidation could create opportunities to aggregate investment.

Dispatchable generation is becoming investable as policy defines a new market. Following Germany's early 2026 agreement with the European Commission, the first tranche of controllable, hydrogen-ready capacity—12 GW—is scheduled for tender in 2026. This creates immediate opportunities across both technology and capital provision.[170]

Core infrastructure

Fiber networks are a scalable entry point into digital infrastructure. Germany's rollout remains largely privately financed and continues to grow. Capital spending on fixed telecom assets almost doubled between 2015 and 2025, while active fiber connections rose from fewer than 1.0 mn in 2017 to 6.4 mn in 2025.[171] Despite this progress, significant runway remains for network expansion, densification, and customer take-up.

Scaled platforms offer the strongest opportunities for institutional capital. These are more attractive than individual municipal projects, because they combine capital with operating expertise and consolidation capabilities to build businesses with more resilient economics. This is demonstrated by players such as Deutsche Glasfaser, Unsere Grüne Glasfaser, and GlasfaserPlus.

Security and defense

Military infrastructure could become a complementary, public-sector-backed entry point. Beyond direct investment in defense companies, Germany faces substantial modernization needs across logistics facilities, functional buildings, and barracks and other accommodation, while the federal government is under pressure to upgrade defense infrastructure faster than traditional public procurement processes allow. This creates the potential for public–private models in which private investors finance, develop, or own assets used by the Bundeswehr under long-term public-sector contracts.

Large capital needs, standardizable building types, and a highly creditworthy public tenant make the segment attractive. Structures could resemble availability-based or long-term lease models, with investors financing accommodation blocks, training facilities, or related infrastructure while the Bundeswehr or Federal Real Estate Agency provide contracted demand. Early market signals, including exploratory discussions with institutional investors, suggest that military real estate and support infrastructure—for which the Federal Ministry of Defense has identified an investment requirement of over €67 bn into the 2040s[173]—could become an investable segment of Germany's broader defense build-up.

***

Germany's €2.9–4.1 tn investment opportunity is here—and the moment to capture it is now. We, the Made for Germany initiative, stand ready to drive Germany's economic renewal, building on a unique foundation of industrial strength and innovation prowess. While deeper structural reforms are needed, coupled with faster implementation, the action that Berlin is already taking provides an important impetus. For domestic and international investors alike, Germany offers a clear, concrete, and highly attractive pathway to participate in its future.

SIDEBAR

A faster route to investment-ready sites

Germany Trade & Invest (GTAI), together with the business promotion agencies of the federal states, has developed a nationwide digital "site showcase," providing international investors with a single entry point to move efficiently from investment thesis to site selection and deployment. The platform features a curated selection of greenfield and brownfield opportunities across all German federal states, with additional sites available upon request. Further locations are being added on an ongoing basis.

To ensure a strong focus on investment-ready opportunities, the sites included must be at least partially developed and suitable for construction within the near future. This allows investors to concentrate on locations with a realistic and timely path to deployment, rather than sifting through a multitude of undeveloped plots.

For further information, detailed site assessments, and support throughout the investment process, investors can engage directly with GTAI, which serves as a central point of contact and facilitates access to relevant regional and local stakeholders.[172]

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For any questions regarding the report, please contact: **M4G@fgsglobal.com**

McKinsey & Company supports the initiators and participating companies of the Made for Germany alliance as a knowledge partner, providing its expertise and objective analysis to aid decision-making. The conclusions and recommendations are solely attributable to Made for Germany.

About Made for Germany

Made for Germany is a cross-industry initiative, in which 147 leading companies and investors join forces for a strong, successful, and future-proof German economy. The initiative aims to foster constructive dialogue between business, the government, and society to boost confidence in Germany as an economic hub, attract targeted investment, and stimulate domestic demand. Ultimately, this will create lasting opportunities for future generations. Further information can be found at **www.madeforgermany.net.**

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