

Built for what's next: designing resilience into digital infrastructure

Germany

Country profile

Summary

Germany is Europe's largest data centre market, supported by strong connectivity, a central location and a mature digital infrastructure ecosystem.

Compared with the United Kingdom and France, German stakeholders place greater emphasis on energy resilience and resource efficiency. This reflects concerns around power availability, energy costs and compliance with increasingly stringent sustainability requirements.

Resilience efforts are focused on cyber-security, energy management and governance, supported by a strong regulatory framework and growing investment in renewable energy.

The next phase of resilience maturity will require greater attention to geographic diversification, supply-chain resilience and preparedness for interconnected disruptions that span energy, climate and technology systems.

Key data

Scale

529
data centres¹

Capacity

3,440
MW²

Capacity growth

13%
annual IT-load growth
(estimated 2026–2031)³

Geographic hubs

Despite strong growth in other data centre hubs, including Berlin, the greater Frankfurt metropolitan area remains Germany's largest data centre market by a significant margin. When accounting for facilities already in operation, under construction and planned, the Frankfurt region represents 72% of Germany's total data centre capacity. Constraints on land and power in Frankfurt are also accelerating demand in alternative markets, including Berlin, Munich, Hamburg and Düsseldorf.⁴



About this research

Built for what's next is an Economist Enterprise research programme, sponsored by global property insurer FM. It examines how risks across energy, people and technology often come together to disrupt digital infrastructure, and how organisations can best prepare to meet those shocks.

The research is based on:

- A global survey of 1,800 data centre stakeholders across the digital infrastructure value chain from 21 countries
- Interviews with global industry experts
- An expert panel discussion

Market overview

Growth trends

Germany's data centre market is projected to nearly double in size over the next five years, increasing from an estimated €9bn (US\$10bn) in 2026 to €18bn (US\$20bn) by 2031 (CAGR 14%). Growth remains strong, but Frankfurt faces significant constraints around power, grid connections and suitable development sites. Average hyperscale utilisation exceeds 85%, while grid connections for large projects can face delays of around two years. These constraints are contributing to greater geographic dispersion, with operators increasingly looking to secondary markets, including the Rhineland and Berlin, for new capacity.^{5,6,7}

Investment trends

Investment remains strong, with significant capital flowing into large-scale data centre developments. EdgeConneX plans to invest around €600m (US\$693m) in a green-powered campus in Heusenstamm by 2027, supplied through a new power line from Dietzenbach. FirstColo is also developing a 24 MW facility in Rosbach vor der Höhe, backed by an investment of around €250m (US\$289m) and powered entirely by renewable electricity.^{8,9}



Key regulatory developments

Germany's data centre market is being reshaped by its Energy Efficiency Act (EnEfG), Europe's first dedicated law for the sector. The legislation sets strict energy-efficiency standards, requiring new data centres entering operation from July 2026 to achieve a power usage effectiveness of 1.2 or below. Existing facilities must meet progressively stricter efficiency standards by 2027 and 2030. It also requires operators to source 100% renewable electricity from 2027, implement energy or environmental management systems for larger facilities and recover and reuse waste heat where technically and economically feasible. Local planning and grid constraints are tightening. Frankfurt is restricting new data centre development to designated clusters in peripheral districts, while Berlin replaced its first-come, first-served approach to grid connections with an allocation system in 2024 to manage demand for limited available capacity.^{10,11,12}

Key risks

Economist Enterprise's survey found that data centre stakeholders in Germany perceive the following as the **greatest systemic risks facing the sector**:

**85%****Extreme weather
or climate impact**

Rising temperatures and increasingly compute-intensive AI workloads are putting greater pressure on data centre cooling systems. As power densities increase, German operators are adopting more advanced cooling technologies, including liquid cooling, while the sector faces growing scrutiny over its energy and water requirements.¹³

**83%****Cyber-attacks**

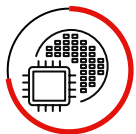
High-profile data breaches and a sophisticated digital threat environment subject data centres to intense cyber risk, making continuous network hardening critical.

**77%****Investment or
insurance withdrawal**

Stringent requirements under Germany's Energy Efficiency Act (EnEfG), alongside constraints on grid capacity and the availability of suitable development sites, are adding complexity and costs to new data centre development.^{14,15}

**76%****Grid capacity
constraints**

Power stands as a binding operational constraint. Grid expansion lags years behind demand, forcing municipalities like Berlin to ration high-voltage connection approvals.

**73%****Limited critical
minerals,
semiconductors
or cloud vendors**

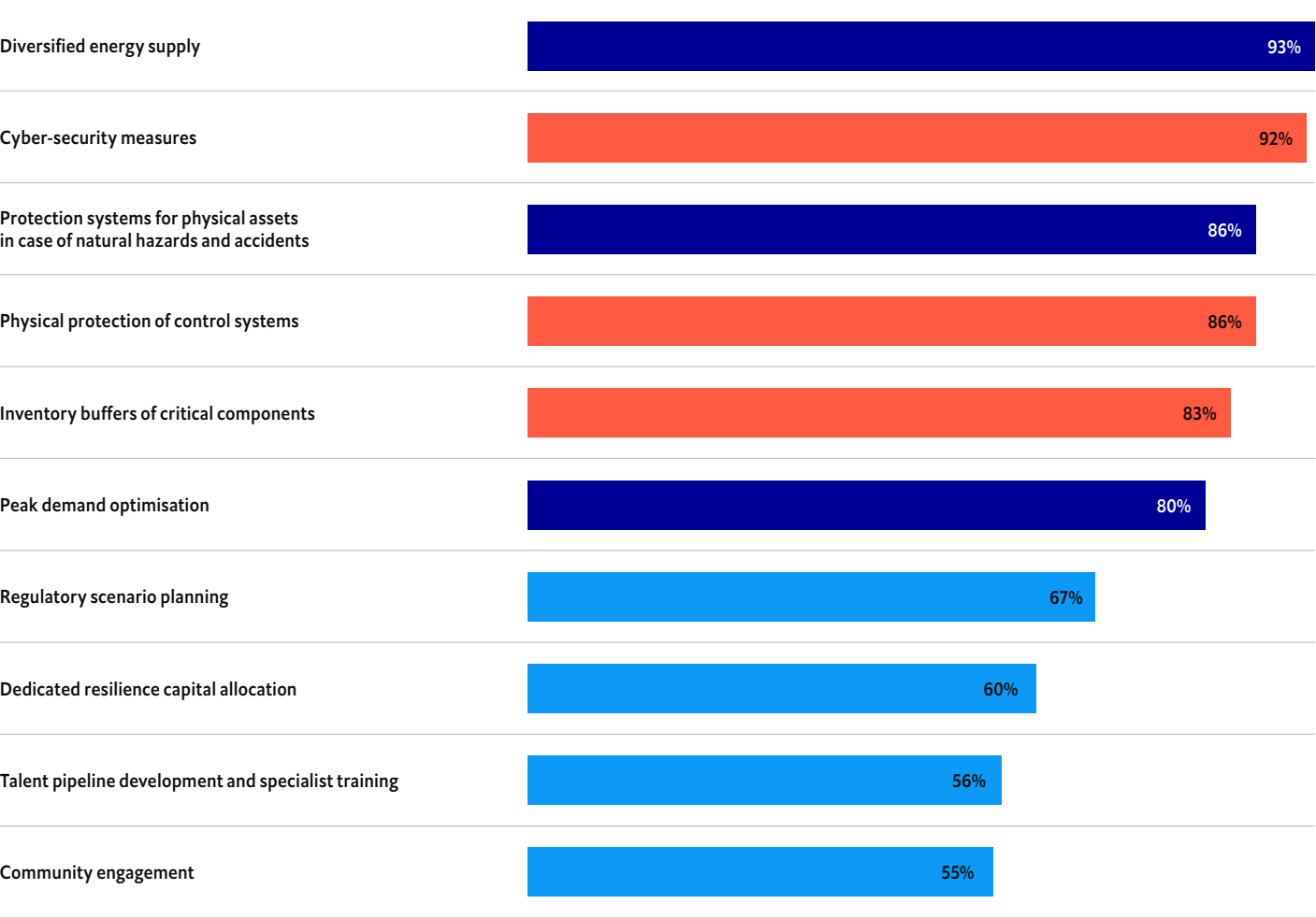
Supply chain bottlenecks and hardware procurement delays create significant friction, slowing down construction schedules and asset deployment.

Source: Economist Enterprise survey, February-April 2026

Resilience measures

Top 10 resilience measures adopted by data centre stakeholders in Germany

■ Energy and environment ■ Governance and human capital ■ Technology and supply-chain digital infrastructure



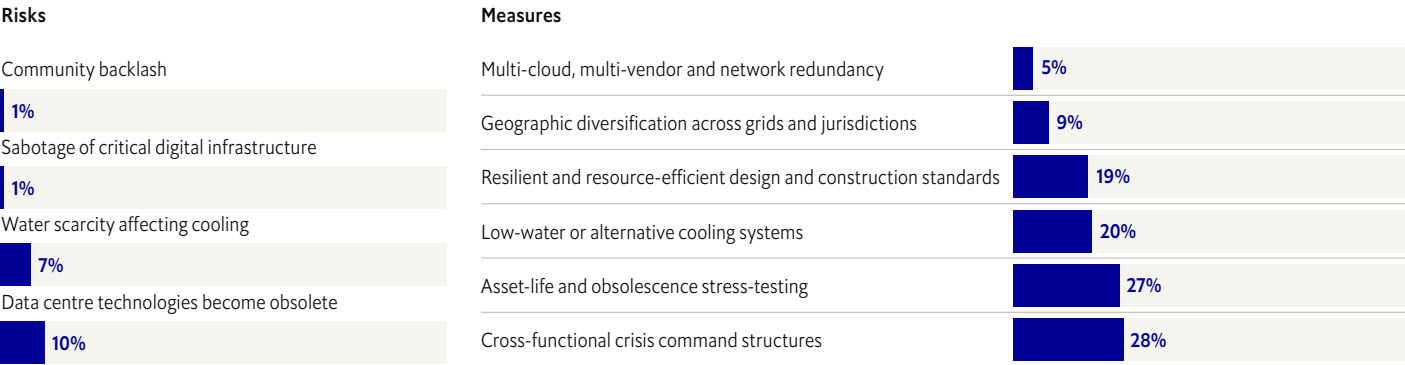
Source: Economist Enterprise survey, February-April 2026

Key takeaway

In Germany, resilience is centred on cyber-security, energy management and regulatory compliance. Strong adoption of governance and environmental measures reflects the country’s focus on energy security and sustainability, while lower uptake of diversification and future-ready infrastructure planning highlights areas for further resilience strengthening.

Priority actions

Least-adopted resilience measures and underestimated risks among data centre stakeholders



Source: Economist Enterprise survey, February-April 2026

Diversify critical infrastructure and service dependencies

Germany's data centre market remains concentrated around Frankfurt even as grid and land constraints push new development towards Berlin, the Rhineland and other secondary markets. Yet only 9% of respondents diversify across grids or jurisdictions. As capacity expands, resilience will depend on ensuring that new sites do not reproduce the same underlying infrastructure dependencies.

Key actions:

- 1
- Compare secondary locations using firm grid availability, connection timelines, climate exposure, fibre connectivity and planning readiness.
- 2
- Map common dependencies across sites, electricity networks, connectivity and critical infrastructure.
- 3
- Ensure redundant power, cooling and communications arrangements do not rely on the same points of failure.
- 4
- Test loss of a major site or grid connection and use findings to strengthen recovery and investment plans.
- 5
- Apply consistent engineering and operating standards across regional facilities.

Build future-ready infrastructure

Technological obsolescence is viewed as a relatively low risk, cited by just 10% of stakeholders. Yet our stress tests suggest that rapid advances in AI, cooling technologies and quantum computing could shorten asset lifecycles and increase stranded-asset risk. Despite this, resilient and resource-efficient design and construction standards (19%) and asset-life and obsolescence stress testing (27%) remains limited.

Key actions:

- 1
- Set shared design assumptions for future rack density, cooling, power, building structure and security needs before capital is committed.
- 2
- Use asset-life stress tests to compare retrofit costs, downtime and residual value under multiple technology and building-design pathways.
- 3
- Align owners, tenants, technology vendors, insurers and investors on upgrade triggers and funding responsibilities.
- 4
- Build modular power, cooling and data-network pathways into new and refurbished facilities.
- 5
- Develop the engineering skills and operating procedures needed to manage increasingly complex power and cooling systems.

Improve preparedness for compound disruptions

Cross-functional crisis command structures are adopted by only 28% of those surveyed. And despite rising cascading threats in Europe, sabotage of critical digital infrastructure is perceived as low risk. Cyber incidents, grid curtailment, climate stress and delayed equipment deliveries can interact across assets, cities and jurisdictions.

Key actions:

1

Map dependencies across power, cooling, cloud, networks, suppliers, insurers and public authorities.

2

Stakeholders including tenants, operators, investors and infrastructure providers should conduct joint exercises that combine cyber incidents with power shortages, heat stress or critical-component delays.

3

Define cross-functional crisis roles and escalation paths for operators, tenants, utilities, infrastructure providers and public agencies.

4

Use exercise findings to update preventive maintenance, equipment-testing schedules, critical spares, recovery assumptions, staff training and capital plans.

Conclusion

Germany's data centre ecosystem has strong energy, cyber and policy foundations. The next stage of resilience maturity will depend on turning efficiency regulation into shared resilience planning, expanding beyond single-hub concentration and rehearsing compound shocks across public and private actors.

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