AI Needs More Computing Power: An Opportunity to Rethink Infrastructure

AI workloads are driving up the electricity and cooling demands of German data centers. At the same time, companies must comply with increasingly stringent sustainability targets. A real challenge. Colocation providers offer high-performance computing power, relying on renewable energies and modern cooling concepts—a contribution to ESG goals and an answer to the question of how increased computing power can be reconciled with sustainability.

The use of artificial intelligence has a crucial side effect: it requires more computing power, electricity and cooling to an extent that poses a challenge for companies. While discussions in the C-suite often revolve around use cases, language models and automation, the success of digitalization is increasingly being decided in a different area: the data center.

A Market on the Rise

The numbers speak for themselves. According to the current Bitkom study "Data Centers in Germany: Update 2025," conducted by the Borderstep Institute, installed data center capacity in Germany grew by 9 percent to 2,980 megawatts in 2025. The 5,000 megawatt mark is projected to be reached by 2030, almost doubling the figure from 2024. Artificial intelligence is clearly the driving force: Currently, around 15 percent of installed capacity is allocated to AI data centers and this figure is expected to quadruple by 2030, according to the "National Data Center Strategy."

The direction is right, but there is an urgent need to catch up. A look abroad illustrates the scale of the problem: While IT connection capacity in China reached 38 gigawatts in 2024, data centers in the USA already reached 48 gigawatts last yearwhich is many times the German connection capacity last year. But this also presents an opportunity for the local location.

AI Is Changing Infrastructure Requirements

GPU-driven AI workloads, model training, language models and e-government applications place significantly higher demands on power density than traditional enterprise IT. Modern, AI-ready data centers achieve completely different rack densities than classic server rooms. This has a direct impact on cooling, power supply and network design.

At the same time, AI contributes to more efficient operations: Automated cooling controls and predictive maintenance reduce energy consumption and minimize downtime. Modern data centers can now achieve PUE (Power Usage Effectiveness) values of less than 1.3.

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Where Demand and Efficiency Arise

Approximately two-thirds of a data center's power demand is attributable to the IT infrastructure itself (servers, storage, network technology), while the remaining third is for building infrastructure such as cooling and uninterruptible power supplies.

With increasing AI computing power, power, cooling, and infrastructure are coming into focus. Especially in such environments, every loss counts as inefficient power supply drives up cooling requirements and energy costs. Intelligent energy use and recovery thus become an economic factor and a contribution to greater sustainability.

Modern cooling concepts in data centers noticeably reduce the energy consumption per computing operation. This not only saves money but is also greener. Where air cooling was once standard, liquid cooling, direct liquid cooling, and, in some cases, immersion cooling is now increasingly used. Modern data centers are designed to meet the needs of AI workloads.

The Balancing Act: More Performance, More Sustainability

AI itself is forcing companies to think and act on sustainability.

Another Bitkom survey shows how closely the two are linked: 84 percent of companies see AI as an opportunity for greater sustainability and climate protection, even though high electricity consumption is considered a challenge. Two-thirds even expect AI to contribute to the reduction of CO2 emissions, and more than half anticipate new, climate-friendly business models.

Legislators provide the framework. The Energy Efficiency Act (EnEfG) obligates operators to meet specific limits for energy consumption effectiveness (PUE): Data centers that commenced operations before July 1, 2026 must achieve a PUE of no more than 1.5 from July 2027 and no more than 1.3 from July 2030. Data centers starting operations now must maintain a PUE of no more than 1.2 from the outset and utilize at least 10 percent reused energy, increasing to 20 percent by 2028. Regarding the electricity mix, operators must cover at least 50 percent of their electricity consumption with renewable energy sources. This is complemented by a requirement for an energy or environmental management system: Data center operators must implement such a system, and validation or certification is mandatory for non-redundant connected loads of 1 megawatt or more.

Colocation: The Answer to a Complex Problem

Operating your own data center is a complex undertaking: operational reliability, certifications, power supply and skilled personnel. Colocation solves this problem. Companies operate their own hardware in a professionally managed data center without having to maintain the infrastructure themselves.

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Key Advantages

Scalability: IT growth can be implemented quickly and remains predictable.

Connectivity: Multiple carrier connections and direct access to Internet Exchange Points ensure low latency and high bandwidth.

Security: ISO 27001-certified operation, physical access control, redundant power supplies and continuous monitoring: standards that an in-house server room rarely achieves.

Digital sovereignty and data ownership: Own hardware, full control over data and access rights. Providers with German legal headquarters and a European ownership structure are subject to German law; no access by third countries.

Regional proximity: Local operators are familiar with the regulations, network infrastructure and market environment of their location. Short distances and dedicated contacts.

Sustainability: Colocation data centers run on renewable energy and utilize state-of-the-art cooling concepts.

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The Portus Data Centers Group is an example of a modern colocation provider. Since 2020, the company has offered carrier-neutral edge and colocation services in Germany and neighboring regions. With three strategically chosen locations in Hamburg, Munich and Luxembourg it creates the foundation for flexible and high-performance IT infrastructures with low latency precisely where companies need their data.

All locations are carrier-neutral and feature cutting-edge security concepts, including access control, video surveillance and 24/7 monitoring. In addition, they offer a highly available, redundant power supply and efficient cooling systems. Portus Data Centers operates its facilities using 100% renewable energy, utilizes waste heat for district heating networks and employs innovative cooling concepts – a measurable contribution to ESG goals.

Not a Nice-to-have, But a Foundation

Richard Pimper, COO and CTO at Portus Data Centers, knows how the AI boom is driving up the demand for computing power and how this affects infrastructure planning and capacity requirements: *"AI clearly has an impact, because it is fundamentally changing what our customers need from us. In discussions with companies from a wide variety of industries, we are finding that they are increasingly demanding AI-enabled infrastructure: higher power densities, specific cooling concepts and lower latency to backbone networks. This is naturally incorporated into our planning."*

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Those who invest in efficient, AI-compliant and scalable infrastructure today are securing their competitiveness and future viability.

Sources

https://www.bitkom.org/Presse/Presseinformation/Rechenzentren-Deutschland-KI-treibt-Wachstum

https://www.bitkom.org/Presse/Presseinformation/Klimafaktor-Unternehmen-erwarten-CO2-Einsparungen

Energieeffizienzgesetz (EnEfG), § 12 „Energie- und Umweltmanagementsysteme in Rechenzentren" https://www.gesetze-im-internet.de/enefg/__12.html

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