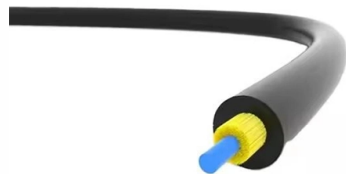


How is energy consumed in data centers



Article Overview

Data centers are major electricity consumers, using roughly 176 TWh annually in the U.S. alone, with global consumption projected to nearly double by 2030 due to AI and digital service growth.

Current Energy Consumption

Data centers are physical facilities housing servers, storage, and networking equipment that support digital services. In 2023, U.S. data centers consumed approximately 176 terawatt-hours (TWh), about 4.4% of national electricity use . Globally, data centers used around 415 TWh in 2024, representing roughly 1.5% of world electricity demand . Energy consumption is driven primarily by IT equipment operation, which accounts for roughly half of total power demand, with the remainder largely used for cooling systems .

Cooling and Water Use

The heat generated by servers necessitates extensive cooling. Centralized cooling strategies include chilled air through ductwork or chilled water loops, while smaller facilities often use computer room air conditioners (CRACs) . Cooling can also involve significant water use; for example, a 100-megawatt U.S. data center may consume as much water as 2,600 households, depending on the cooling method .

Impact of AI and Digital Growth



Article Content

Data Center Energy Consumption: How Much Energy

To put things in perspective, data centers already represent about 1 out of every 20 kilowatt

AI: Five charts that put data-centre energy use – and

One major critique concerns the environmental impact of AI, particularly the intensive

Data Centers and Their Energy Consumption: Frequently Asked

Ling Zhu Analyst in Telecommunications Policy Data Centers and Their Energy Consumption: Frequently Asked

Data Center Energy Consumption Statistics | 2026 Edition

Our in-depth market data report on data center energy consumption. Explore verified statistics and the latest research.

How Much Energy Do Data Centers Really Use?

Since this blog was published, Energy Innovation has completed new research showing how rising energy demand

Data Center Power Consumption Statistics | 2026 Edition

The average data center still wastes nearly a third of its power on cooling and infrastructure. This analysis details the

Data center sustainability | Deloitte insights

AI-driven data center power consumption will continue to surge, but data centers are not—in fact—that big

IEA: Data center energy consumption set to double by

Global electricity consumption from data centers is projected to more than double, according

How Much Electricity Does a Data Center Use? Complete 2025 Analysis

This comprehensive guide explores exactly how much electricity data centers use, what drives their enormous energy

How Much Electricity Does A Data Center Use? 2025 Guide

In 2023, U.S. data centers alone consumed 176 terawatt-hours (TWh) of electricity—equivalent to powering 16 million

How Data Centers Redefined Energy and Power in 2025

Data centers stand out as major energy consumers, with demand rising rapidly in the US and in China. Interest in

Data center energy consumption: tracking global power demand,

Global data centers consumed an estimated 460 TWh of electricity in 2025, roughly 1.8% of total worldwide electricity

How much energy do data centers consume?

How much energy do data centers consume? High energy consumption continues to be an issue for data centers

Data centre electricity use surged in 2025, even with tightening ...

Electricity demand from data centres soared by 17% in 2025, and that of AI-focused data centres climbed even faster

Global data center electricity use to double by 2026

Data center electricity usage is set to double by 2026 according to a new report, which blames the rise of power

Data center power consumption

Data center power consumption - statistics & facts Global electricity consumption from data centers has already started to account

Data centres will use twice as much energy by 2030 — driven by AI

Even with these uncertainties, “we should be mindful about how much energy is ultimately being consumed by all

Gartner Says Electricity Demand for Data Centers to Grow 16% in

Electricity demand for data centers worldwide is projected to grow 16% in 2025 and to double by 2030, according to

Data Center Energy Consumption & Efficiency | Huawei Digital Power

This article analyzes data center & AI data center energy use, explores power and cooling optimization, and shares insights to boost

Recalibrating global data center energy-use estimates

Here, we integrate new data from different sources that have emerged recently and suggest more modest growth in

Data Centers and Their Energy Consumption: Frequently Asked

Another nonbinding program, Energy Star, certifies data centers with a focus on the building and infrastructure. Since

Data Centers and Their Energy Consumption: Frequently Asked

Roughly one-half or greater of the electric power demand of data centers stems directly from the operation of

In focus: Data centres – an energy-hungry challenge

How much energy do data centres consume? According to the International Energy Agency (IEA), data centres are

Data centre electricity use surged in 2025, even with tightening ...

Data centre electricity use surged in 2025, even with tightening bottlenecks driving a scramble for solutions - News

How Data Centers Redefined Energy and Power in 2025

In 2025, AI demand drove data centers toward on-site power, BESS, and nuclear options, while grid delays

United States Data Center Energy Usage Report: 2025 Update

United States Data Center Energy Usage Report: 2025 Update | LBL ETA Publications
United States Data Center Energy Usage

Data Center Energy Consumption Statistics & Data (2026)

Explore data center energy consumption statistics and key trends. Learn efficiency benchmarks and insights shaping

How much energy do data centers use?

Data centers are responsible for between 1-1.5% of global electricity usage today but some scenarios project that will

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