

Data Center Energy 2022



AI Overview

Global data centers consumed approximately 470 terawatt-hours (TWh) of electricity in 2022, making them one of the largest electricity consumers worldwide. Global Energy Consumption In 2022, data centers worldwide used around 470 TWh of electricity, representing about 1.5% of global electricity consumption. This level of consumption positioned data centers ahead of most countries in terms of electricity use, ranking just behind the top nine national consumers. The energy demand is driven by the growth of cloud services, AI computing, streaming, and other digital services. Projections indicate that this consumption could double by 2026, potentially reaching 1,000 TWh. Regional and Sectoral Insights Data center energy demand varies by region and type. In Europe, the EU is actively monitoring energy performance and sustainability, with reporting obligations under the Energy Efficiency Directive and a European database tracking energy and water usage. In Ireland, for example, data centers consumed 41% of the country's carbon-free electricity in 2022, highlighting the strain on local grids. Key Developments and News in 2022 Several major trends and events shaped data center energy news in 2022:

- Sustainability Initiatives:** Tech giants like Amazon, Microsoft, Google, and Meta advanced renewable energy projects. Amazon secured a 450 MW solar power deal in California, including 225 MW of energy storage, aiming to power global operations with renewable energy by 2025.
- European Energy Crisis:** The war in Ukraine and resulting energy shortages affected data center operations, delaying projects and impacting power availability. Some data centers in Finland, for instance, experienced power cuts due to sanctions on Russia.
- Regulatory Actions:** Irish regulators halted new data center construction without dedicated power stations to prevent overloading the electricity grid. Despite this, many data centers were using only a fraction of their reserved grid capacity.
- Bitcoin Mining and Energy Use:** Cryptocurrency mining conti...

Article Content

How AI Is Transforming Data Centers and Ramping Up

Global power demand from data centers is forecast by Goldman Sachs Research to rise 165% by 2030, compared with 2023 levels.

US manufacturing reshoring boom: What the data says

Data center growth is increasingly running into a constraint: the grid. The construction data shows power infrastructure spending was largely flat from

Semiconductor solutions to drive data centre

Data centres already heavily impact the world's carbon footprint, accounting for 1-1.5% of global electricity consumption in 2022. In the future,

Data Center Infrastructure Management (DCIM) Tools

Data center infrastructure management (DCIM) tools monitor, measure, manage and/or control data center resources and energy consumption of both IT-related equipment (such as servers, storage

Data Centers and Water Consumption | Article | EESI

Data center developers are increasingly tapping into freshwater resources to quench the thirst of data centers, which is putting nearby

Global data centre energy demand by data centre type, 2010-2022

Global data centre energy demand by data centre type, 2010-2022 - Chart and data by the International Energy Agency.

AI is poised to drive 160% increase in data center power

For years, data centers displayed a remarkably stable appetite for power, even as their workloads mounted. Now, as the pace of efficiency gains in

Data Centers Burned More Power in 2022 Than 185 of

According to 2024 data from the International Energy Agency (IEA), data centers consumed 470 terawatt hours (TWh) in 2022. And this is set to

Data Center Energy Consumption: How Much Energy Did/Do/Will

Data centers today consume a significant and growing share of electricity. Globally, data centers (excluding cryptocurrency mining) used an estimated 240-340 terawatt-hours (TWh) in 2022,

Energy performance of data centres

A European database, prepared by the Commission, collects and publishes data, which is relevant for the energy performance and water footprint of data centres

The Week in Charts | McKinsey & Company

The AI advantage in B2B pricing Data and analytics have long been crucial to B2B pricing, but new advances in AI are poised to reshape pricing

Dominion: Virginia's Data Center Cluster Could Double

Dominion Energy says it has received customer orders that could double the amount of data center capacity in Virginia by 2028, with a projected market size of 10

How AI Demand Is Draining Local Water Supplies

A Bloomberg News analysis finds that roughly two thirds of new data centers built or in development in the US since 2022 are in places with high

Why Bitcoin Miners Are Winning The AI Data Center

Building Tier III data centers—the kind powerful enough to support AI—can take years. This is precisely where Bitcoin miners enter the picture.

Data Centres, Artificial Intelligence and Cryptocurrencies Eye

Data centres (which house the servers and computing equipment needed to store digital information), AI and cryptocurrencies are driving an increase in electricity demand in several regions. Together, they

What We Think | Business & Technology Insights

Accenture thought leadership offers business and technology insights on key market forces & technologies to set your company on the path to value.

Top 10 Data Center Energy Stories of 2022

Sustainability efforts, renewable energy, the European energy crisis, and power grids dominated data center energy news in 2022. We analyzed Data Center Knowledge's 10 most

Data Center Power Demand | MIT Energy Initiative

A single hyperscale data center can consume as much electricity as 50,000 homes. To address this complex challenge, the MIT Energy Initiative brings together MIT faculty members and scientists to

Who pays for AI's electricity? Data centers spark debate over rising ...

Big technology companies are facing pushback over their data centers, which have been blamed for rising energy prices in the U.S. These so-called hyperscalers have pledged to bear rising

Here's how data centre heat can warm your home

In Sweden, an initiative called Stockholm Data Parks runs in partnership with political and industry leaders to warm people's homes using

Powering Data Centers Sustainably

This blog explores how data center owners can make their operations more sustainable by using electricity from renewable energy sources and improving efficiency

Communities Are Raising Noise Pollution Concerns About Data Centers ...

Noise Reduction Solutions for Data Centers There are steps that data center developers and operators can take to reduce the noise generated by data centers and its impact on neighbors.

Range of data centre electricity demand estimates as a share of total ...

Range of data centre electricity demand estimates as a share of total electricity demand per selected region in 2022 - Chart and data by the International Energy Agency.

Biodiesel Production and Distribution

Biodiesel Production and Distribution Production Biodiesel is produced from vegetable oils, yellow grease, used cooking oils, or animal fats. The fuel is

Alternative Fuels Data Center: Maps and Data

Maps and Data - Electric Vehicle Registrations by State Find maps and charts showing transportation data and trends related to alternative fuels and vehicles.

2022 Best Practice Guidelines for the EU Code of

This is the annual revision of the Best Practice Guidelines for the EU Code of Conduct on Data Centre Energy Efficiency for year 2021 to update it to

Intel's AI Strategy 2025: The Energy-Efficient Comeback

Discover Intel's 2025 AI strategy to slash data center power. Explore its new energy-efficient AI hardware, key partnerships, and massive investments. Read the full analysis.

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://www.sphplantsales.co.za>

Email: info@sphplantsales.co.za

Phone: +27 64 827 3915

Address: Unit 9, Highveld Technopark, 43 Atlas Road, Johannesburg, 2196,
South Africa

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