DAY 54 · Part 5 · Looking Inside

How much electricity does it take to ask AI one question? — Data centers and electricity

Five-Minute AI Lessons · Oct 30, 2026

One question is 9 seconds of TV. Add them all up and it's a whole country.

In a nutshell

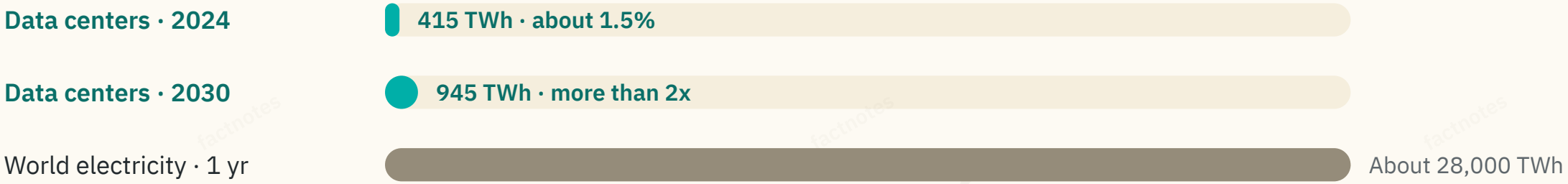
1. One question takes less than you'd think. In measurements released in 2025, a typical text question to Gemini used **0.24 watt-hours** (the median) — about the same as running a TV for 9 seconds.

2. The problem is that those questions **pile up nonstop**. So instead of one question, you have to look at the electricity of the whole data center, the building where AI lives.

3. The world's data centers used **415 terawatt-hours** of electricity in 2024, about 1.5% of all the electricity in the world. The International Energy Agency expects that to more than double to 945 terawatt-hours by 2030.

In one picture

How big a slice of all electricity do data centers take?



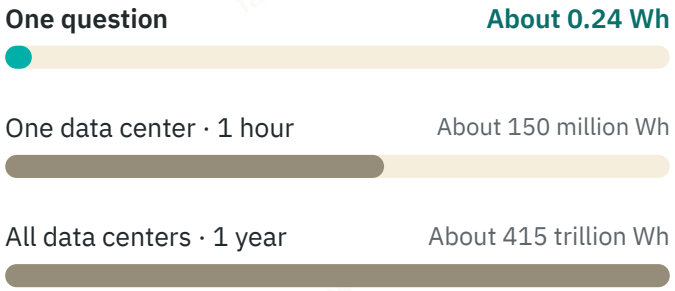
Right now it's 1.5% of the total. That looks small, but it's not common for something to double in just 6 years.

Key idea: one question is tiny, but the total grows really fast

Lining up electricity in the same unit

About 0.24 Wh

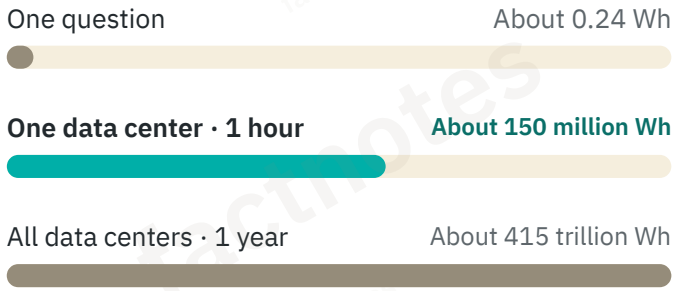
One question



That's the median for a Gemini text question, measured and released by Google itself in 2025. A...

About 150 million Wh

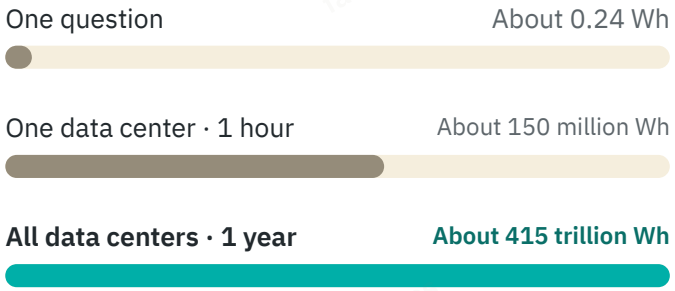
One data center · 1 hour



The site in Memphis with 100,000 cards is reported to get 150 megawatts from the power grid. Th...

About 415 trillion Wh

All data centers · 1 year



That's 415 terawatt-hours, about 1.5% of the world's electricity. It covers more than AI, too,...

All three use the same unit, the watt-hour (Wh). Use the slider to guess roughly what power of 10 it is, then t...

Try it yourself in the web lesson · next-token.net/en/learn/day-54/

Quick check

Just three questions

Q1

How much electricity does one text question to AI take?

① About as much as an air conditioner all day
② About as much as a TV on for 9 hours
③ About as much as a TV on for 9 seconds
④ No electricity at all

Q2

In 2024, what share of all electricity did the world's data centers use?

① About 0.001%
② About 50%
③ About 15%
④ About 1.5%

Q3

What does the International Energy Agency expect for 2030?

① It more than doubles
② About the same as now
③ It drops by half
④ Nobody has any idea

Know the why, too

Q1

③

In 2025 measurements, the median was 0.24 watt-hours. One question is small. The problem is that those questions pile up nonstop.

Q2

④

It was 415 terawatt-hours, about 1.5% of the world's electricity. It's still a small slice, but the point is how fast it's growing.

Q3

①

It expects a jump from 415 terawatt-hours in 2024 to 945 terawatt-hours in 2030, more than double. That's about as much as the whole of Japan uses in a year.

One question is 9 seconds of TV.
Add them all up and it's a whole country.

Tomorrow: AI on your phone — some pieces run right inside your phone, and some make a round trip to that building.