

LET'S TALK DATA CENTERS

GLOSSARY

Data center development is a complex and evolving topic that can often be difficult to follow or understand. Below we define some common terms used by experts, media, and legislators when they talk about data centers.

Artificial intelligence/ generative artificial intelligence	Artificial intelligence (AI) is the use of computer technology for tasks that usually require human thinking or input. Generative AI is computer technology used to create complex text, artwork, images, music and other outputs based on human inputs, or prompts. Examples of generative AI tools include ChatGPT, Claude, Google Gemini, and others.
Closed-loop cooling	A way of using water or other coolant in pipes to cool computer equipment. Water or coolant is re-used and should not require constant replenishment.
Computational power/ "compute"	The speed and efficiency with which a computer system can perform its functions (process data, make calculations, etc). More "compute" typically means more energy consumed, and more heat generated.
Data center	Buildings that house the computer infrastructure to store data, run the internet, serve industry, and run artificial intelligence models.
Diesel generators	Large generators, usually powered by diesel fuel, are often situated on-site for independent backup power generation, including during power outages. Data centers often rely on multiple diesel generators for backup power generation, contributing to local air pollution.
Energy affordability crisis	The sharp rise in consumer energy costs due to extremely high demand from large energy users, most often corporate entities, that is outpacing wage growth.
Environmental justice	Environmental justice has a variety of meanings, depending on context. For this presentation, we'll define environmental justice as providing additional protections for communities that have been most overburdened with pollution and the detrimental effects of climate change.
Evaporative cooling	A way of using evaporating water to cool computer equipment. A constant supply of water is required for evaporative cooling.

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Hyperscale data center

These are the largest data centers, which use immense amounts of energy, land, and often water to create or “train” new artificial intelligence models. These buildings are often 10-100 times larger than typical data centers.

Moratorium

A pause on an activity, usually taken to ensure due diligence is occurring prior to a big decision or next step. For example, some counties and even states have enacted moratoriums on data center development to give lawmakers and others time to dig deeper before making big decisions.

POWER Act

POWER stands for “Protecting Our Water and Energy Ratepayers”. The POWER Act is currently proposed legislation in Illinois that puts guardrails on data center developers wishing to build anywhere in the state. Some possible requirements include telling developers to “Bring Your Own New Clean Capacity and Energy” (BYONCCE), insisting on comprehensive water use reporting, mandatory community benefits agreements, and more.

Power grid

The large, interconnected network that generates, transmits, and distributes power to homes and businesses.

Ratepayer

Person or entity (customer) who pays utility companies for services (power, water, etc).

Water stress

The stress a local water supply can experience when large amounts are used to supply a large water user, such as a data center, without enough recovery time for the water supply to recharge.



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