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Data Centers and the Electricity Grid: Frequently Asked Questions

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Data Centers and the Electricity Grid: Frequently Asked Questions

SUMMARY

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Ashley J. Lawson
Specialist in Energy Policy

Paul W. Parfomak
Specialist in Energy Policy

Martin C. Offutt
Analyst in Energy Policy

A data center is a physical facility that houses computer systems for managing and transmitting data. The federal government has been pursuing policies to promote data center development, particularly as a primary component of artificial intelligence (AI), a "critical and emerging technology" with enormous data storage and processing requirements. Data centers require large quantities of electrical power. To date, data centers have generally secured power from their local electric utilities, utilizing existing transmission and distribution infrastructure (i.e., the grid). Many observers anticipate a need for new power plants and grid infrastructure to meet the needs of data centers in addition to other growing sources of electricity demand. The anticipated pace of U.S. electricity demand growth exceeds that of the last 20 years, raising questions of whether existing regulatory requirements and processes are suited for such development.

Congress has an ongoing interest in the development of data centers, generally, and their impacts on the electricity grid, specifically. Hearings in the 119th Congress have examined data center and grid-related issues. Ensuring data centers do not raise costs or affect grid reliability for other electricity consumers, especially residential consumers, has been a focus of legislative activity in the 119th Congress. This report discusses frequently asked questions about data center electricity use, the potential impacts of data center growth on the electric grid, and government actions related to data center development. This report is intended as an introduction to data center electricity issues and does not provide in-depth coverage of all data-center- and electric-grid-related issues. CRS has several other published products that may be helpful in further examining specific data-center-related energy policy issues.

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Introduction

A data center is a physical facility that houses computer systems for managing and transmitting data. The federal government has been pursuing policies to promote data center development, particularly as a primary component of artificial intelligence (AI), a "critical and emerging technology" with enormous data storage and processing requirements.[1] Data centers require large quantities of electrical power. To date, data centers have generally secured power from their local electric utilities. Reportedly, some utilities are experiencing infrastructure constraints and cannot accommodate new data center requests until new grid infrastructure—power plants, transmission facilities, and distribution facilities—is built. Typically, building grid infrastructure takes several years longer than building data centers. Many observers in the technology industry and their supporters, including the Trump Administration, see grid infrastructure constraints as a hurdle to U.S. competitiveness in new technologies like AI.[2]

Opposition has been growing, especially at the local level, to construction of new data centers. A key point of debate is the need for new grid infrastructure and whether this buildout might lead to higher electricity prices for other customers. This report addresses frequently asked questions about data center electricity use, the potential impacts of data center growth on electricity prices and grid reliability, and government actions related to data center development.

Frequently Asked Questions

What are data centers and how do they use electric power?

A data center is a physical facility housing computer servers, data storage devices, and network equipment that can provide information technology (IT) infrastructure services for storing, managing, processing, and transmitting large amounts of data.[3] Different types of data centers are based on their ownership or intended purposes. For example, a large company may choose to build an on-premises data center to house and manage its own IT infrastructure.[4] Other, typically smaller, organizations often choose to rent space, equipment, or services within a colocation data center owned and operated by another company.[5]

The increasing demand for data storage and processing capacities, especially for computational tasks such as AI deployment, has led to the development of "hyperscale" data centers notable for their size.[6] Hyperscale data centers contain at least 5,000 computer servers and occupy at least

[1] National Science and Technology Council, *Critical and Emerging Technologies List Update*, February 2024, https://www.govinfo.gov/content/pkg/CMR-PREX23-00185928/pdf/CMR-PREX23-00185928.pdf. The report states that "[c]ritical and emerging technologies (CETs) are a subset of advanced technologies that are potentially significant to U.S. national security" and lists artificial intelligence (AI) among CETs. See pages 1-2.

[2] See, for example, remarks of Secretary of Energy Chris Wright to attendees of the Special Competitive Studies Project's AI Expo, at C-SPAN, "Energy Secy. Wright Warns Failure to Overhaul Electric Grid System Could Slow Down AI," May 7, 2026, https://www.c-span.org/clip/public-affairs-event/energy-secy-wright-warns-failure-to-overhaul-electric-grid-system-could-slow-down-ai/5199999.

[3] For more discussion on data centers and their role in AI development and deployment, see CRS In Focus IF12899, *Data Centers and Cloud Computing: Information Technology Infrastructure for Artificial Intelligence*, by Ling Zhu.

[4] Equinix, "What Is a Data Center? What Are Different Types of Data Centers?," August 1, 2024, https://blog.equinix.com/blog/2022/10/13/what-is-a-data-center-what-are-different-types-of-data-centers/.

[5] Stephanie Susnjara and Ian Smalley, "What Is a Data Center?," IBM, https://www.ibm.com/think/topics/data-centers.

[6] Phill Powell and Ian Smalley, "What Is a Hyperscale Data Center?," IBM, https://www.ibm.com/think/topics/hyperscale-data-center.

10,000 square feet of physical space, although they can be much larger—some occupying a million square feet or more.[7]

Data centers use electricity to run their computers and the systems that cool them. Roughly half of data center electricity demand stems directly from operating electronic IT equipment.[8] Because IT equipment generates heat as it operates, data centers require extensive cooling systems to maintain IT system stability and performance. These cooling systems typically account for another 40% of electricity consumption in a data center.[9] Lighting, security systems, power distribution losses, and other facility systems account for the rest of data center electricity demand.

What is the electricity grid and how is it regulated?

Electricity grid is a term commonly used to refer to the U.S. electricity system. The grid is made up of three distinct but interrelated systems for generation, transmission, and distribution of electricity.[10] The generation system consists of the power plants that generate electricity using a variety of energy sources across the country. The transmission system consists of high-voltage (rated above 100 kilovolts) power lines and associated equipment that move power across long distances. The distribution system consists of low-voltage power lines and associated equipment that makes final delivery of electricity to most homes and businesses.

In the early 1900s, the states passed laws granting monopoly franchises to electric utilities such that only a single utility could sell electricity in a defined service territory. Under this *regulatory compact*, the utilities must have their rates approved by a state regulator and they must provide universal service.

Originally, most utilities were vertically integrated—that is, they owned and operated all the generation, transmission, and distribution infrastructure required to serve their customers. Due to state and federal policy changes late in the 20th century, in many parts of the United States, the electricity industry has transitioned (restructured) to a business model in which power generation is competitive. Even when companies compete for generation, the transmission and distribution functions remain primarily operated by monopoly utilities regulated by state or local regulators. In regions with restructured electricity industries, competitive markets largely set the wholesale price of power.

The U.S. electricity market regions are shown in **Figure 1**. The markets are composed of regional transmission organization (RTO) and independent system operator (ISO) areas, each serving multiple, interconnected utility service territories. PJM is the nation's largest electric grid operator, managing the electricity transmission system for more than 65 million people in all or

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[7] Powell and Smalley, "What Is a Hyperscale Data Center?"; VIAVI Solutions, "What Is a Hyperscaler?," https://www.viavisolutions.com/en-us/what-hyperscaler.

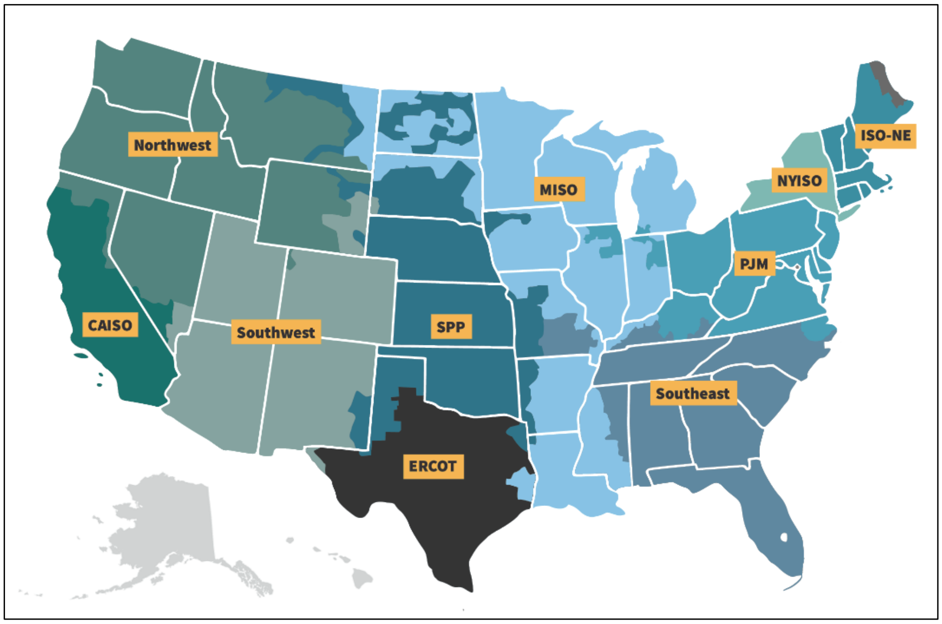
[8] A. Shehabi et al., *2024 United States Data Center Energy Usage Report*, Lawrence Berkeley National Laboratory (LBNL), LBNL-2001637, December 2024, p. 47.

[9] Karthik Ramachandran et al., "As Generative AI Asks for More Power, Data Centers Seek More Reliable, Cleaner Energy Solution," Deloitte, November 9, 2024, https://www.deloitte.com/us/en/insights/industry/technology/technology-media-and-telecom-predictions/2025/genai-power-consumption-creates-need-for-more-sustainable-data-centers.html.

[10] For additional discussion, see CRS Report R47521, *Electricity: Overview and Issues for Congress*, by Ashley J. Lawson.

part of 13 states and the District of Columbia.[11] What consumers ultimately pay for electricity is based on auctions among competing generators bidding to provide electricity in these markets.

Figure 1. Regional Transmission Organizations and Independent System Operators



Source: Federal Energy Regulatory Commission (FERC), "RTOs and ISOs," https://www.ferc.gov/power-sales-and-markets/rtos-and-isos.

Notes: FERC does not regulate the electricity industry in Alaska, Hawaii, or U.S. territories. CAISO = California Independent System Operator; SPP = Southwest Power Pool; ERCOT = Electric Reliability Council of Texas; MISO = Midcontinent Independent System Operator; PJM = PJM Interconnection; NYISO = New York Independent System Operator; ISO-NE = ISO New England. Regional transmission organizations and independent system operators do not operate electricity systems in the Northwest, Southwest, or Southeast.

RTO and ISO rules are under Federal Energy Regulatory Commission (FERC) jurisdiction, except for the Electric Reliability Council of Texas (ERCOT).[12] Wholesale rates for electricity transmission are set by FERC and are generally directly passed through into retail rates. The retail rate consumers pay is the sum of wholesale generation costs plus transmission and distribution costs, and any other costs approved by the state or local utility regulator (e.g., costs associated with low-income bill assistance or environmental programs). While FERC is largely responsible for regulation of the interstate transmission system and wholesale power markets, regulation of the distribution function of the electric power business is still largely carried out by state or local authorities.

[11] For more details about PJM, see CRS Report R48553, *PJM's Electric Capacity Market: Background and Current Issues*, by Ashley J. Lawson. The PJM states are Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia, plus the District of Columbia.

[12] Pursuant to the Federal Power Act, the Federal Energy Regulatory Commission (FERC) has authority over wholesale electricity transactions in interstate commerce. The transmission system throughout most of Texas does not exchange electricity with neighboring states, so FERC's authority does not extend to that region. For additional discussion on FERC's authority over electricity rates, see CRS In Focus IF11411, *The Legal Framework of the Federal Power Act*, by Adam Vann, and CRS Report R48349, *The Federal Energy Regulatory Commission (FERC): Authorities and Membership*, by Paul W. Parfomak.

How do data centers get their electric power?

Data centers have three main options for getting electric power. First, they can buy electricity directly from the local utility; this is the most common scenario. A data center that purchases from the local utility receives the same electricity as other retail customers, sourced from the same mix of power plants and carried on the local utility's power lines. Buying electricity from the local utility is the preferred option for most data center developers and is expected to remain so for the foreseeable future.[13] Data center owners who prefer this option typically choose to locate their facilities in areas with more readily available existing utility electricity supply.

A second option for a data center developer is to enter into a power purchase agreement (PPA) with a specific power plant. The power plant may be located near the data center or far from it. In either case, the power plant delivers electricity onto the grid, and (in a separate transaction) the data center receives electricity from the grid. PPAs can also include terms for the acquisition of the renewable *attributes* of the power plant, where applicable.[14] Some data center owners or users procure these renewable attributes as part of their corporate sustainability goals.[15]

A third option for data center developers is to self-supply electricity by buying or building *behind-the-meter* power plants, also referred to as *behind-the-meter generation*.[16] This arrangement is sometimes called "bring your own power" (BYOP) or "bring your own generation" (BYOG). In this case, the electricity generated by the power plant is delivered directly to the data center without using the utility's electric grid.[17] Such power plants may be colocated with the data center on the same site, or they may be offsite adjacent to the data center, connecting to them via dedicated power lines. Some behind-the-meter power plants can be configured in such a way that allows electricity to flow back to the grid. This configuration could allow data centers to sell electricity to the local utility when the electricity is not needed for data center operations; to support utility grid reliability; or to supply electricity in the event of a utility electricity shortage. Behind-the-meter power plants may be owned and operated by the data center itself or by a third party.

Which electricity supply option best meets the electricity needs of an individual data center depends on several considerations, including the availability of grid power from the local utility, whether the data center developer prefers a specific energy source to make the electricity, and

[13] Michael Thomas, "Bypassing the Grid: How Data Center Developers Are Building Their Own Power Plants," Cleanview, https://cleanview.co/reports/behind-the-meter-data-centers. Based on a proprietary database of announced data centers, the analysis found that only 25% of the planned data center capacity intended to use behind-the-meter power sources. The analysis found that 2 gigawatts (GW) or 2.2% of the announced behind-the-meter power was operational as of mid-2026.

[14] An energy *attribute* conveys information about a unit of energy, including the resource used (e.g., solar power) to create it and its associated emissions. For more details, see U.S. Environmental Protection Agency, "Energy Attribute Certificates (EACs)," updated October 20, 2025, https://www.epa.gov/green-power-markets/energy-attribute-certificates-eacs.

[15] See, for example, Google, *Environmental Report 2025*, June 2025, p. 79, https://www.gstatic.com/gumdrop/sustainability/google-2025-environmental-report.pdf. Google announced an "aim to run on 24/7 carbon-free energy on every grid where we operate by 2030."

[16] *Behind-the-meter* is sometimes abbreviated in the industry as *BTM*.

[17] Ian Fischer, "Behind-the-Meter Power Solutions: The Data Center Industry's New Reality," datacenterHawk, February 19, 2026, https://datacenterhawk.com/resources/market-insights/behind-the-meter-power-solutions-the-data-center-industry-s-new-reality.

utility-specific requirements regarding behind-the-meter options. Reportedly, many data center developers prefer to secure their electricity supplies in whatever way is fastest.[18]

The above discussion applies to the primary power source for data center operations. Data centers also typically have backup generators on-site designed to operate in case of a grid outage. As is the case for other electricity customers, any backup option is at the full expense of the data center and is not operated by the utility. Whereas the primary power source for a data center might be expected to run for most hours of the year, backup generation is expected to run a minimal number of hours and primarily during emergency events.

How much electric power will data centers need?

Estimates of existing data center power demand vary, in part because comprehensive consumption statistics are not available.[19] Likewise, projections of future demand vary and are uncertain, in large part due to uncertainty about future technology changes—both the adoption of AI technology in the broader United States and the hardware and software used for AI and other computational applications.

A 2026 Department of Energy (DOE) study examined the nationwide energy consumption of data centers in response to direction by Congress in the Energy Act of 2020 (P.L. 116-260, Division Z, Section 1003).[20] The study found that U.S. data center annual electricity consumption in 2024 was approximately 4.7% of total U.S. consumption—192 terawatt-hours (TWh)—and was projected to rise to 9.5%-15.3% of U.S. consumption by 2030, between 521 TWh and 843 TWh.[21] A 2026 study by the Electric Power Research Institute (EPRI) projected data center electricity use to rise to 9% to 17% of U.S. total electricity consumption in 2030, roughly 380 TWh to 790 TWh according to their model.[22] Other studies have projected similarly large growth in data sector electricity demand.[23]

Some studies have suggested that current projections of future data center demand may be overstated. One study, prepared for an environmental advocacy group, found "that data center electricity demand projections remain highly uncertain and currently reflect a bias to overestimating growth in the number of data centers that will be built, and therefore also overestimating future electricity demand."[24] A May 2026 analysis from an investment bank found

[18] Drew Robb, "Data Centers Bypassing the Grid to Obtain the Power They Need," Data Center Knowledge, May 1, 2025, https://www.datacenterknowledge.com/energy-power-supply/data-centers-bypassing-the-grid-to-obtain-the-power-they-need.

[19] See the section "Are there reports on the actual energy use of U.S. data centers?" in CRS Report R48646, *Data Centers and Their Energy Consumption: Frequently Asked Questions*, by Martin C. Offutt et al.

[20] Sarah Smith et al., *United States Data Center Energy Usage Report: 2025 Update*, LBNL, Energy Analysis Division, June 2026, https://escholarship.org/content/qt33m6w3x0/qt33m6w3x0.pdf.

[21] Smith et al., *United States Data Center Energy Usage Report: 2025 Update*, pp. 8-9. These estimates did not account for cryptocurrency.

[22] Electric Power Research Institute (EPRI), *Powering Intelligence 2026: Updated Scenarios of U.S. Data Center Electricity Use and Power Strategies*, February 25, 2026, pp. 5-6, https://powering-intelligence.epri.com.

[23] See, for example, International Energy Agency, *Energy and AI*, April 10, 2025, https://iea.blob.core.windows.net/assets/de9dea13-b07d-42c5-a398-d1b3ae17d866/EnergyandAI.pdf; Alastair Green et al., "How Data Centers and the Energy Sector Can Sate AI's Hunger for Power," McKinsey & Company, September 17, 2024, https://www.mckinsey.com/industries/private-capital/our-insights/how-data-centers-and-the-energy-sector-can-sate-ais-hunger-for-power.

[24] London Economics International LLC, *Uncertainty and Upward Bias Are Inherent in Data Center Electricity Demand Projections*, prepared for Southern Environmental Law Center, July 7, 2025, p. 8, https://www.selc.org/wp-content/uploads/2025/07/LEI-Data-Center-Final-Report-07072025-2.pdf.

that "only about 50-60% of data center capacity scheduled for the next one to two years is expected to come online on time amid delays and cancellations."[25] Other studies have projected that even lower percentages of announced new data center capacity will be built.[26] In May 2026, the North American Electric Reliability Corporation (NERC) observed that grid operators in many parts of the country revised their projections for electricity demand in the summer of 2026 downward, "to account for the observed rate of completion for large load interconnections and the slower-than-expected pace at which some of those loads are coming on-line."[27] Despite these lowered projections, NERC expected electricity demand at peak times to be 11 gigawatts (GW) higher in 2026 than in 2025, largely due to data center demand growth.

What types of electricity generation are preferred for data centers?

Generation technologies being deployed for data centers via PPAs or behind-the-meter electricity generation span fossil fuel-fired thermal power plants (e.g., natural gas turbines), renewable generation (e.g., wind, solar, geothermal), nuclear power, fuel cells, and other types of energy technology.[28] There is no comprehensive, publicly available analysis of all generation projects for existing and proposed data centers. However, an industry analysis based on limited data center announcements and regulatory filings suggests that, where new on-site generation has been proposed for data center projects, natural gas-fired turbines or engines have been the preferred option, by far, followed by nuclear power and fuel cells.[29] The extent to which these proposed power plants will become operational remains to be seen.

In its 2026 *Annual Energy Outlook*, the U.S. Energy Information Administration (EIA) states that "natural gas use for electric power generation by 2050 increases more than it does in any other end-use sector," largely due to data center expansion.[30] Natural gas generation is reportedly preferred because it is dispatchable and can be constructed relatively quickly—in one to three years—depending on local permitting requirements and the availability of the required equipment.[31] Dispatchable generation can be turned on and off or otherwise adjusted whenever it is needed to meet demand. Choosing natural gas for generation also depends on the availability of adequate natural gas supplies through regional pipeline infrastructure or, in some cases, proximity to natural gas production fields (e.g., the Permian Basin in Texas).[32]

[25] Goldman Sachs, "US Data Center Power Demand Projected to Double by 2027," May 20, 2026, https://www.goldmansachs.com/insights/articles/us-data-center-power-demand-projected-to-double-by-2027.

[26] See, for example, Gabriel Levin and Emily Forgash, "Most Power Sought for US Data Centers Will Never Materialize, Analysts Say," Bloomberg, August 12, 2026, https://www.bloomberg.com/news/articles/2026-08-12/most-electricity-sought-for-ai-data-centers-in-us-will-never-materialize.

[27] North American Electric Reliability Corporation (NERC), *2026 Summer Reliability Assessment*, p. 1, https://www.nerc.com/globalassets/our-work/assessments/nerc_sra_2026.pdf.

[28] For examples of projects, see Table 1 in CRS Report R48762, *Data Center Energy Infrastructure: Federal Permit Requirements*, by Paul W. Parfomak et al.

[29] Data reported in Amy Harder, "The AI Boom Is Making Natural Gas Great Again," *Axios*, February 4, 2026, https://www.axios.com/2026/02/04/ai-natural-gas-power-data-centers, based on analysis (not publicly available) in Michael Thomas, *Bypassing the Grid: How Data Center Developers Are Building Their Own Power Plants*, Cleanview; an executive summary of *Bypassing the Grid* is available at https://cleanview.co/reports/behind-the-meter-data-centers.

[30] U.S. Energy Information Administration (EIA), *Annual Energy Outlook 2026*, April 2026, p. 25, https://www.eia.gov/outlooks/aeo/pdf/AEO_Narrative.pdf.

[31] Will Gruver, "Gas Turbine Power Plant for Data Center in Texas: How Fast Can It Go Live?," USP&E, October 2, 2025, https://uspeglobal.com/articles/gas-turbine-power-plant-for-data-center-in-texas/.

[32] Bedrock, "How Is Natural Gas Powering Data Centers in the Permian Basin?," June 23, 2026, https://www.bedrockpcl.com/news/how-is-natural-gas-powering-data-centers-in-the-permian-basin/.

What is the federal role in permitting electricity infrastructure for data centers?[33]

Numerous federal, state, and local laws and regulations affect the permitting for grid infrastructure, data center interconnection to the grid, and backup electricity facilities. As a result, data centers in different states might face different sets of permitting requirements associated with their access to power and environmental requirements.

Because an individual data center has a discrete footprint, permits for on-site energy infrastructure typically fall under state and local jurisdiction. Power plants developed off-site to serve data centers face the same permitting requirements as any other power plant. The permit requirements are largely specific to individual projects and depend, among other things, on location, the type of generation involved, and whether the power plant is grid-connected or behind-the-meter.

The Federal Power Act (16 U.S.C. §§791 et seq.) reserves most authority for permitting and siting of power plants to the states. Specific types of generation may require federal agency authorizations from the Federal Energy Regulatory Commission (FERC), the Nuclear Regulatory Commission, or the U.S. Army Corps of Engineers. Power plants developed on federal lands typically require approval from the relevant land management agency or other executive agency controlling those lands (e.g., Bureau of Land Management). In addition, energy infrastructure for data center projects may require permits, approvals, or reviews under delegated federal authority from state, tribal, and local agencies. Relevant requirements may fall under the Clean Air Act, the Clean Water Act, the Safe Drinking Water Act, and the Coastal Zone Management Act. State requirements under these statutes may apply more broadly to data center energy infrastructure than federal agency requirements.

What are the requirements for interconnecting power plants to the grid?

Since 2003, FERC has set requirements for the terms and conditions under which power plants interconnect to the grid.[34] A key aspect of this requirement is a technical study, known as an *interconnection study*, that grid operators must conduct to determine whether a proposed new power plant would pose reliability risks to the system. Power plant developers requesting to interconnect to the grid are placed in an interconnection queue to wait their turn for an interconnection study to be completed.

In 2023, FERC began implementing reforms to the interconnection study process aimed at reducing the time to complete the process. Key aspects of the reforms, specified in Order No. 2023, are increased "readiness requirements" aimed at reducing speculative generation interconnection requests and the use of "cluster studies" so that multiple proposed power plants can be studied together.[35] Many observers believe that the Order No. 2023 reforms will accelerate

[33] For details, see CRS Report R48762, *Data Center Energy Infrastructure: Federal Permit Requirements*, by Paul W. Parfomak et al.

[34] FERC, *Standardization of Generator Interconnection Agreements and Procedures (Order No. 2003)*, July 24, 2003, https://www.ferc.gov/sites/default/files/2020-06/order-2003.pdf. FERC's regulations apply only to utilities subject to its jurisdiction. Many utilities outside FERC's jurisdiction nonetheless maintain similar procedures for interconnecting new power plants.

[35] FERC, Improvements to Generator Interconnection Procedures and Agreements, Order No. 2023, Docket No. RM22-14-000, 184 FERC ¶ 61,054, July 28, 2023, https://www.ferc.gov/media/order-no-2023.

the pace of power plant development, though other factors (e.g., permitting, financing) remain important in determining how many new power plants become operational.

Separate from the Order No. 2023 reforms, FERC has approved "fast-track" interconnection study processes for several other grid operators. These processes are aimed at addressing concerns that growth in electricity demand—largely from data centers—will outpace supply in the next few years. Under the fast-track processes, grid operators select a limited number of power plant projects for accelerated interconnection study, regardless of when they were announced (typically, projects are studied in order of announcement). Selected projects must meet certain criteria, such as being "advanced projects of significant size" and being dispatchable (i.e., controllable by a grid operator).[36]

What is data center flexibility and how does it affect the grid?

For most hours of the year, the existing U.S. electricity system has sufficient electricity supply and transmission capacity to accommodate new load growth. *Load* refers to electricity demand and can be used to refer to either a volume of electricity sales or a number of electricity customers. Utility planners design the system around the relatively few hours of the year with peak electricity demand when the system is constrained—typically the hottest summer afternoons and the coldest winter nights. New demand from data centers could potentially overwhelm the grid's capacity during these hours. Utilities review applications to interconnect new load to identify potential reliability risks during peak hours. If a utility finds a risk, the new customer must wait until new grid infrastructure is in place to reduce the reliability risk.

Some data centers have the technical potential to decrease their demand during peak demand hours, either by pausing or slowing computational tasks or by switching to backup power supplies. This behavior is known as *flexibility*, and electricity consumers that have flexibility are known as *flexible loads*. Flexibility has multiple advantages to electricity customers. If data centers were to implement this kind of flexible behavior, either through voluntary demand response programs or mandatory requirements, they could potentially be connected to the grid faster because they might not have to wait for grid infrastructure to be built.[37] Also, avoiding the need for new infrastructure could reduce the risk of electricity prices increases. Additionally, data centers—or more specifically, their backup generators—could be utilized during peak demand times to reduce blackout risks for other customers. Secretary of Energy Chris Wright has encouraged grid operators to direct consumers like data centers to shift to backup power sources "as a last resort" during grid emergencies.[38]

Because of these perceived advantages, increased flexibility has been identified as one potential solution to the mismatch between electricity supply and demand growth.[39] When data centers agree to be flexible loads, demand during peak times is lower, reducing the need for new power plants. For example, NERC found after accounting for flexibility that summer 2026 peak demand

[36] FERC, Order Accepting Tariff Revisions, 95 FERC ¶ 61,197, June 9, 2026, https://www.pjm.com/-/media/DotCom/documents/ferc/orders/2026/20260609-er26-1563-000.PDF.

[37] Demand response programs typically compensate electricity customers for reducing their electricity demand when their utility requests it, usually when utility electricity supplies are constrained.

[38] Letter from Chris Wright, Secretary of Energy, to Reliability Coordinators and Balancing Authorities, January 22, 2026, https://www.energy.gov/documents/leveraging-backup-generation-facilities-during-energy-emergencies.

[39] T. H. Norris et al., *Rethinking Load Growth: Assessing the Potential for Integration of Large Flexible Loads in US Power Systems*, NI R 25-01, Nicholas Institute for Energy, Environment & Sustainability, Duke University, 2025, https://nicholasinstitute.duke.edu/publications/rethinking-load-growth-assessing-potential-integration-large-flexible-loads-us-power.

forecast in the ERCOT area[40] is 3.7 GW (4.6%) lower than summer 2025 peak demand "because more data centers can be curtailed by grid operators when needed to prevent grid emergencies."[41]

Some data centers may have flexibility limitations, however. Google has stated that "[t]here are limits to how flexible a given data center can be, since high levels of reliability are critical for services like Search and Maps, as well as Cloud customers in essential industries like healthcare."[42] Data centers may also be constrained for technical and operational reasons, such as legacy software, limited grid analytic capability, and a lack of real-time markets for demand-side energy resources.[43]

Can data centers provide benefits to the grid?

There are several ways data center development could potentially provide benefits to the electric grid. Data centers with behind-the-meter generation could (subject to any local utility limitation) export power to the grid to supply other customers, temporarily relieving utility generation constraints.[44] Groups of data centers in different electricity markets could also coordinate to shift computational tasks to other regions when local electricity demand is higher.

Being able to shift workloads and their associated electricity demands in this way (*spatial flexibility*), together with flexibility in the scheduling of peak workloads (as described in the previous question), can potentially lower electricity costs for all customers by smoothing out demand and avoiding the costliest peak generation supplies across markets.[45] Data centers with on-site energy storage systems could charge storage systems using "excess" electricity from the grid, when available (e.g., midday when solar generation peaks), or using any electricity from behind-the-meter generation that is in excess of what is needed to meet a data center's current demand. These energy storage systems could then discharge electricity to the grid when overall demand is higher, increasing and improving the utilization of renewable generation in the regional generation portfolio.[46] Some advocates also see data center demand growth as an opportunity to invest in modernizing and expanding the transmission grid.[47]

[40] The Electric Reliability Council of Texas (ERCOT) manages approximately 90% of Texas's electrical load and serves 24 million customers.

[41] NERC, *2026 Summer Reliability Assessment*, May 2026, p. 8, https://www.nerc.com/globalassets/our-work/assessments/nerc_sra_2026.pdf.

[42] Michael Terrell, "How We're Making Data Centers More Flexible to Benefit Power Grids," Google blog, August 4, 2025, https://blog.google/innovation-and-ai/infrastructure-and-cloud/global-network/how-were-making-data-centers-more-flexible-to-benefit-power-grids/.

[43] Thomas W. Kirchstetter et al., "DOE Data Center Load Flexibility Workshop Summary," LBNL, January 2025, https://eta-publications.lbl.gov/sites/default/files/2025-03/final_doe_data_center_load_flexibility_workshop_summary.v0307.pdf.

[44] Christopher Tozzi, "How Grid-Safe Data Centers Can Help Ease the Power Crisis," Data Center Knowledge, March 5, 2026, https://www.datacenterknowledge.com/energy-power-supply/how-grid-safe-data-centers-can-help-ease-the-power-crisis.

[45] Evan Lerner, "How Data Center Flexibility Can Relieve Stress on the Western Grid," University of Utah, June 16, 2026, https://attheu.utah.edu/science-technology/how-data-center-flexibility-can-relieve-stress-on-the-western-grid/.

[46] Patrick Donovan, "The Rise of BESS: Powering the Future of Data Centers," *Schneider Electric Blog*, May 1, 2024, https://blog.se.com/datacenter/2024/05/01/the-rise-of-bess-powering-the-future-of-data-centers/.

[47] See, for example, Jane Flegal, *Seizing the Data Center Buildout for Grid Modernization*, Searchlight Institute, March 9, 2026, https://www.searchlightinstitute.org/research/seizing-the-data-center-buildout-for-grid-modernization/.

How have data centers affected electricity prices?

The price (rate) that retail customers pay for electricity is determined primarily by two factors: the cost of generating electricity and the cost of delivering electricity to customers through the grid.[48] Utility regulators at the state or local level approve rates that reflect a utility's cost for these components. Rates typically change every few years in response to shifts in utility costs over time. For example, if a utility invests in a new power plant or in upgrades to the grid, rates might need to change to reflect those capital investments. Utility sales also affect rates. When sales increase, a utility earns more revenue; conversely, when sales decrease, a utility earns less revenue. If a utility's revenue is less than its costs, rates might need to increase to compensate. Conversely, if a utility's revenue exceeds its costs, regulators might lower rates.

Researchers at Lawrence Berkeley National Laboratory (LBNL) have studied the extent to which data centers and other drivers have affected retail electricity prices.[49] Their most recent analysis, which covered the years 2019 through 2025, found that the main driver behind increases in electricity prices during this period was utility investments in grid infrastructure, mostly in response to aging infrastructure and resilience needs. Other key drivers included natural gas prices (natural gas is a key fuel for power generation); recovery from natural disasters (e.g., storms, wildfires); and state energy and environmental policies. LBNL found that states with the largest data center demand growth generally saw electricity price decreases during the period from 2019 through 2025, although some states with relatively large data center growth saw prices increase or stay the same.[50] One explanation for this finding may be that increased demand in some states allowed utility costs to be spread over a larger sales volume, putting downward pressure on rates.[51] Other studies have reached similar conclusions about rates during this period.[52]

Although the studies discussed above found only a limited effect of data centers on electricity prices in the past, data centers could have a greater impact on prices as the industry continues to grow and demand more electricity. In electricity markets with little spare generation capacity, the added demand of data centers may increase the future price of electricity for all customers. This appears to be one of several contributing factors to electricity price increases in 2025 and 2026 in the PJM region, a part of the country that includes "Data Center Alley" in northern Virginia (see **Figure 1**).[53] A recent modeling study led by North Carolina State University found that data centers (and cryptocurrency mining facilities) could cause national average electricity costs to increase by 6% to 29%, across different modeling scenarios, with increases up to 57% in some

[48] EIA, "Electricity Explained: Factors Affecting Electricity Prices," https://www.eia.gov/energyexplained/electricity/prices-and-factors-affecting-prices.php.

[49] Ryan Wiser et al., "Retail Electricity Price Trends and Drivers: Data Update—2026 Edition," LBNL and the Brattle Group, April 2026, https://emp.lbl.gov/sites/default/files/2026-03/Retail%20Price%20Trends_2026%20edition.pdf.

[50] Wiser et al., "Retail Electricity Price Trends and Drivers: Data Update—2026 Edition," p. 47.

[51] Keaton Peters, "Utilities Are Now Pitching Data Centers as a Way to Cut Electric Costs," *Straight Arrow News*, August 9, 2026, https://san.com/cc/utilities-are-now-pitching-data-centers-as-a-way-to-cut-electric-costs/.

[52] Energy and Environmental Economics (E3), *Understanding the Drivers of Rising Electricity Rates and the Role of Data Centers*, May 2026, https://www.ethree.com/wp-content/uploads/2026/05/Understanding-the-Drivers-of-Rising-Electricity-Rates-and-the-Role-of-Data-Centers_E3-2026.pdf; and Angela Ryu and Shon R. Hiatt, *Data Center Entry and U.S. Electricity Prices: From the Wholesale Market to the Power Bill*, University of Southern California Marshall School of Business, Zage Business of Energy Initiative, May 22, 2026, https://drive.google.com/file/d/1IWolyGYxOv5ENI3frcRU8U0Mge_fbWUr/view.

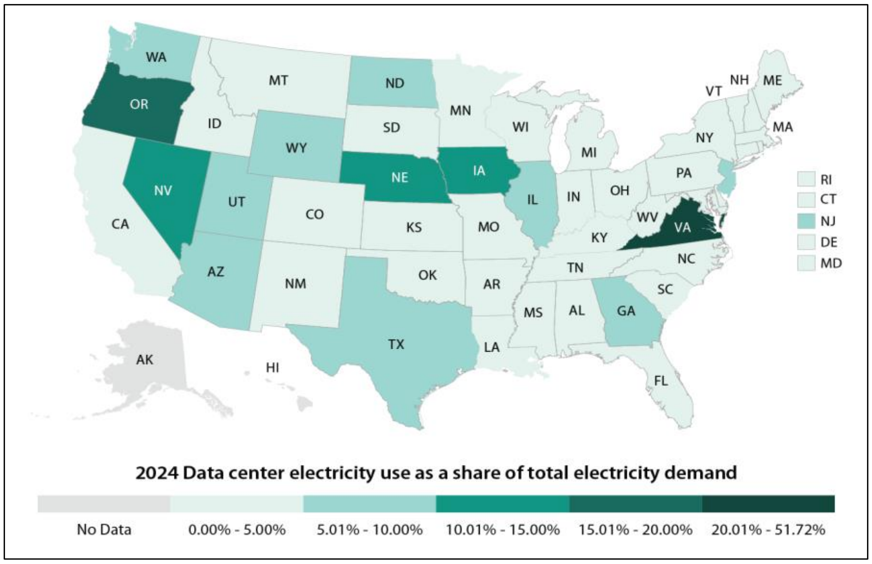
[53] For additional discussion of PJM electricity price increases, see CRS Report R48553, *PJM's Electric Capacity Market: Background and Current Issues*, by Ashley J. Lawson.

regions.[54] Another modeling study led by Carnegie Mellon University found that "data center and cryptocurrency mining growth through 2030 could increase average U.S. electricity generation costs by 8%."[55] Whether electricity costs rise due to data centers, and by how much, would vary by region and depend on assumptions about market response. The potential price impacts on electricity customers in any market area remain uncertain.

Where is data center growth happening?

Data center growth has been affecting the electricity grid more in some regions than others. Information from 2024 shows that data centers in 15 states together consumed 80% of electricity nationwide used by such facilities.[56] On an individual basis, Virginia was the only state with greater than 20% of total electricity consumed by data centers (**Figure 2**).

Figure 2. Standalone Data Center Electricity Use by State in 2024



Source: CRS using data provided by Electric Power Research Institute, *Powering Intelligence 2026: Updated Scenarios of U.S. Data Center Electricity Use and Power Strategies*, February 25, 2026, https://powering-intelligence.epri.com/.

Note: Includes cryptocurrency facilities.

Developers anticipate future data center buildouts to occur more in new geographic regions, with some analysis expecting these to be in rural areas as time-to-power exceeds developers' requirement in traditional areas.[57] One analysis projects that by 2030 a greater range of states will have large shares of electricity consumption attributable to data centers (**Figure 3**).

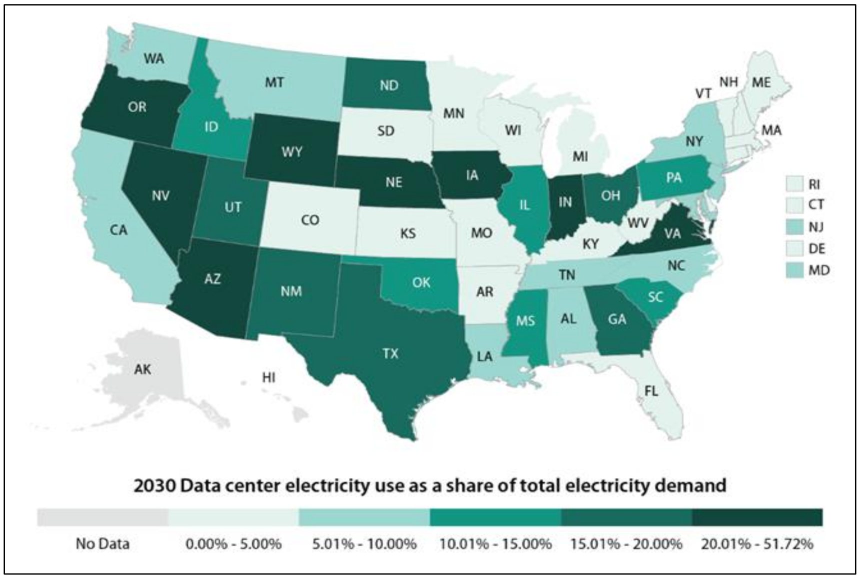
[54] Jeremiah X. Johnson et al., "Power System Costs and Emissions from Data Center and Cryptocurrency Mining Expansion in the United States," *Environmental Research Letters*, Vol. 21, June 4, 2026, https://iopscience.iop.org/article/10.1088/1748-9326/ae6c3d.

[55] Michael Blackhurst et al., "Data Center Growth Could Increase Electricity Bills 8% Nationally and as Much as 25% in Some Regional Markets," white paper, Carnegie Mellon University, July 16, 2025, https://www.cmu.edu/work-that-matters/energy-innovation/data-center-growth-could-increase-electricity-bills.

[56] EPRI, *Powering Intelligence: Analyzing Artificial Intelligence and Data Center Energy Consumption*, May 28, 2024, p. 5. The top six were, in decreasing order, Virginia, Texas, California, Illinois, Oregon, and Arizona.

[57] Bloom Energy, *2026 Data Center Power Report*, January 2026, p. 4, https://www.bloomenergy.com/wp-content/ (continued...)

Figure 3. Projected Standalone Data Center Electricity Use by State in 2030



Source: CRS using data provided by Electric Power Research Institute, *Powering Intelligence 2026: Updated Scenarios of U.S. Data Center Electricity Use and Power Strategies*, February 25, 2026, https://powering-intelligence.epri.com/.

Note: Includes cryptocurrency facilities.

Can data centers cause blackouts?

Data centers do not appear to have caused blackouts to date. Electric reliability in the United States remains generally high, barring local or regional outages associated with natural disasters or weather events.[58] Nonetheless, generation capacity constraints have raised concerns in some electricity markets that the added electricity demand of data centers on peak demand days (e.g., during heat waves) could lead to electricity blackouts or brownouts (in which utilities are forced to reduce grid voltage system-wide to avoid full blackouts).[59] Although such events are possible, electric utilities generally have processes in place to avoid supply disruptions. In addition, the Secretary of Energy may issue emergency orders under the Federal Power Act temporarily authorizing grid operators to take additional actions to ensure grid reliability.[60] For example, at the request of the PJM grid operator (which serves the Mid-Atlantic and parts of the Midwest), DOE issued an emergency order on May 18, 2026, authorizing PJM "to direct backup generation resources at data centers (including, but not limited to, hyperscaler facilities), and at other large

uploads/2026-power-report.pdf; and Skyler Seets and Kaitlyn Radde, "Most New Data Centers in the U.S. Are Coming to Rural Areas," Pew Research Center, April 13, 2026, https://www.pewresearch.org/short-reads/2026/04/13/most-new-data-centers-in-the-us-are-coming-to-rural-areas/.

[58] See, for example, EIA, "Hurricanes in 2024 Led to the Most Hours Without Power in the United States in 10 Years," December 1, 2025, https://www.eia.gov/todayinenergy/detail.php?id=66744. U.S. islands and remote areas may experience relatively more electricity disruptions. See, for example, EIA, "Even Without Hurricanes, Customers in Puerto Rico Lose About 27 Hours of Power per Year," *Today in Energy*, August 13, 2025, https://www.eia.gov/todayinenergy/detail.php?id=65925.

[59] Scott Gelman, "Could Extreme Heat, Data Center Demand Prompt Brownouts Across DC Region?," WTOP News, July 15, 2026, https://wtop.com/local/2026/07/is-extreme-heat-data-center-demand-enough-to-prompt-brownouts-across-dc-region/.

[60] 16 U.S.C. §824a(c). For more details, see CRS Report R48568, *Federal Power Act: The Department of Energy's Emergency Authority*, by Ashley J. Lawson.

load industrial and commercial customer sites … to operate as a last resort" to prevent blackouts.[61]

An emerging concern is the risk that large loads such as data centers will unexpectedly go offline, causing voltage and frequency levels on the grid to increase. Events like this have occurred in recent years in Virginia and Texas, prompting NERC to issue an alert in May 2026 directing grid operators to take certain precautionary actions to prevent equipment damage from such events.[62] Additionally, NERC is developing new reliability requirements for large load customers, including large data centers, and expects to file proposed requirements with FERC by December 31, 2026, for approval.[63]

What has the federal government been doing about data centers and the grid?

The Trump Administration has taken several actions related to data centers and the grid. President Trump issued Executive Order 14318 of July 23, 2025, "Accelerating Federal Permitting of Data Center Infrastructure," intended "to facilitate the rapid and efficient buildout" of data center infrastructure.[64] In October 2025, the Secretary of Energy directed FERC to initiate a rulemaking to ensure that "large loads, including AI data centers, served by public utilities [will] be able to connect to the transmission system in a timely, orderly, and non-discriminatory manner."[65] In response, FERC initiated a proceeding on June 18, 2026, requiring FERC-jurisdictional regional transmission organizations and independent system operators (shown in **Figure 1**) to either demonstrate that their existing rules appropriately address large load interconnections or propose rules changes that would do so.[66] On July 16, 2026, FERC directed NERC to develop new or modified reliability standards to address reliability risks associated with integrating "computational loads" (e.g., data centers) into the grid.[67]

On March 4, 2026, President Trump announced a "Ratepayer Protection Pledge," which called on "the leading United States hyperscalers and AI companies to build, bring, or buy all of the energy

[61] Department of Energy, Order No. 202-26-23, May 18, 2026, https://www.energy.gov/documents/doe-emergency-order-no-202-26-23pdf.

[62] NERC, "NERC Issues Level 3 Alert, Reliability Guideline Focused on Large Load Challenges," press release, May 4, 2026, https://www.nerc.com/newsroom/nerc-issues-level-3-alert-reliability-guideline-focused-on-large-load-challenges.

[63] NERC, *Large Loads Action Plan Q1 2026 Update: Addressing an Emerging Reliability Issue*, April 2026, https://www.nerc.com/globalassets/initiatives/large-loads-action-plan/llap-quarterly-update-q1-2026.pdf.

[64] Executive Order 14318 of July 23, 2025, "Accelerating Federal Permitting of Data Center Infrastructure," 90 *Federal Register* 35385, July 28, 2025, https://www.federalregister.gov/documents/2025/07/28/2025-14212/accelerating-federal-permitting-of-data-center-infrastructure.

[65] Letter from Chris Wright, Secretary of Energy, to FERC Commissioners, October 23, 2025, p. 1, https://www.energy.gov/sites/default/files/2025-10/403%20Large%20Loads%20Letter.pdf. Although FERC generally acts independently of the Secretary, the Department of Energy Organization Act (P.L. 95-91) authorizes the Secretary of Energy "to propose rules, regulations, and statements of policy of general applicability with respect to any function within the jurisdiction of [FERC]." 42 U.S.C. §7173.

[66] FERC staff, *RTO/ISO Show Cause Orders*, presentation, June 18, 2026, p. 4, https://ferc.gov/news-events/news/presentation-items-e-7-through-e-12-rtoiso-show-cause-orders. Regional transmission organizations (RTOs) and independent system operators (ISOs) are entities that operate regional transmission systems independently of wholesale electricity market participants (e.g., generators). For more information, see FERC, "Electric Power Markets," updated March 27, 2025, https://www.ferc.gov/electric-power-markets.

[67] FERC, "Order Directing the North American Electric Reliability Corporation to File Reliability Standard(s) Pertaining to Computational Load Integration," 196 FERC ¶ 61,031, July 16, 2026, https://www.ferc.gov/media/e-1-rd26-7-000.

needed for building and operating data centers, paying the full cost of their energy and infrastructure."[68] Reportedly, several major technology companies—including Google, Microsoft, Meta, Oracle, xAI, OpenAI, and Amazon—voluntarily agreed to abide by the pledge.[69] On July 23, 2026, President Trump announced "a historic expansion of the Ratepayer Protection Pledge, bringing more than 200 additional utilities, data center developers, cooperatives, and states into this growing national commitment."[70] As of the date of this publication, over 300 organizations have committed to the pledge, according to the Trump Administration.[71] The pledge does not have an enforcement mechanism. Some observers contend that while the pledge creates a framework that could shield non-data-center consumers, its long-term success will depend on various implementation measures.

What have states been doing about data centers and the grid?

Most regulation of electricity generation and electric utilities falls under state jurisdiction. States have been pursuing various independent policies to address concerns about data centers and the grid. Many state legislatures have considered or passed "affordability" legislation intended to ensure that data centers cover the full costs of their electricity demand and not shift their electricity costs onto other electricity customers.[72]

Some states have proposed legislation requiring data centers to build new generation plants, an approach often referred to as "bring your own power" (BYOP) or "bring your own generation" (BYOG), as noted in "How do data centers get their electric power?" above. Others have proposed requiring data centers to participate in electricity demand response programs or agree to be disconnected first in case of a shortage of electricity supplies. Texas, for example, legislated both requirements in 2025.[73] Some states have considered legislation requiring data centers to procure some or all of their electricity from energy sources that do not emit greenhouse gases.[74] States have also pursued transparency legislation requiring data centers to report certain information about their energy use to inform regulators and legislators about their impacts to the grid.[75]

Absent new legislation, state utility regulators have considered or imposed various policies under their existing statutory authorities to address concerns about data center grid impacts by

[68] Executive Office of the President, "Ratepayer Protection Pledge," 91 *Federal Register* 11439, March 9, 2026.

[69] Katherine Long and Peter Behr, "What to Know About Trump's AI Deal," *Politico Pro*, March 4, 2026, https://subscriber.politicopro.com/article/2026/03/what-to-know-about-trumps-ai-deal-00811909.

[70] White House, "President Trump's Ratepayer Protection Pledge Secures American AI Dominance, Protects Consumers," press release, July 23, 2026, https://www.whitehouse.gov/releases/2026/07/president-trumps-ratepayer-protection-pledge-secures-american-ai-dominance-protects-consumers/.

[71] White House, "Ratepayer Protection Pledge," accessed August 17, 2026, https://www.whitehouse.gov/ratepayer-protection-pledge/.

[72] North Carolina Clean Energy Technology Center, *50 States of Energy Affordability: Quarterly Report*, June 2026, https://www.dsireinsight.com/publications?_sp=ad9b8524-e005-421e-80a5-64cf979f30df.1784042352567; Morgan Scarboro, "How States Are Requiring Data Centers to Pay for Grid Expansion (Comparing Ratepayer Protection Bills Across Five States)," MultiState, June 4, 2026, https://www.multistate.us/insider/2026/6/4/how-states-are-requiring-data-centers-to-pay-for-grid-expansion-comparing-ratepayer-protection-bills-across-five-states.

[73] For a discussion of the 2025 Texas data center law, see Brian Martucci, "Texas Law Gives Grid Operators Power to Disconnect Data Centers During Crisis," *Utility Dive*, June 25, 2025, https://www.utilitydive.com/news/texas-law-gives-grid-operator-power-to-disconnect-data-centers-during-crisi/751587/.

[74] See, for example, New Jersey Senate Bill S4143, Session 2024-2025, https://www.njleg.state.nj.us/bill-search/2024/S4143. The bill was not enacted.

[75] See, for example, Pennsylvania Senate Act No. 21, PA SB146, July 12, 2026, https://legiscan.com/PA/bill/SB146/2025.

establishing new large load rate classes, demand response requirements, and other measures to avoid cost shifts and ensure reliability, especially for residential customers.[76] Some states have pursued voluntary commitments from data center developers to protect electricity consumers from electricity cost increases associated with growing data center electricity demand. For example, on July 15, 2026, the governor of Michigan announced a Michigan Affordable and Responsible Growth Action Plan seeking voluntary commitments from data center developers "to protect Michigan consumers from higher energy bills," among other provisions.[77]

Additionally, some states have considered imposing moratoria on new data center development to allow time to more thoroughly evaluate their effects on communities and the grid, and to implement associated policies and regulations.[78] On July 14, 2026, New York became the first state to impose such a moratorium, "temporarily pausing State environmental permits for up to one year in order to build a nation-leading regulatory framework that protects ratepayers, the environment, the energy grid and communities across the state."[79] On August 3, 2026, the governor of Texas, in order to "keep the grid stable and reliable," ordered a pause on data center development until the completion of "a comprehensive verification and audit of all data centers advancing through ERCOT's interconnection process."[80]

What has Congress been doing about data centers and the grid?

Congress has an ongoing interest in the development of data centers, generally, and their impacts on the electricity grid and electricity customers, specifically. Hearings in the 119th Congress have examined data-center- and grid-related issues.[81] Ensuring data centers do not raise costs for residential customers or reduce grid reliability has been a focus of legislative activity.

As of the date of this publication, at least a dozen bills have been introduced in the 119th Congress with the primary intention being to ensure that data centers (or, more generally, any large load customer) cover the full costs of their electricity demand or do not shift their electricity costs onto

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[76] See, for example, Diana DiGangi, "Virginia SCC Weighs Dominion Data Center Transmission Cost Allocation," *Utility Dive*, July 15, 2026, https://www.utilitydive.com/news/virginia-scc-dominion-data-center-transmission-cost-allocation/825300/.

[77] Michigan Governor Gretchen Whitmer, "Gov. Whitmer Launches Michigan Affordable and Responsible Growth Action Plan, Calls on Data Center Companies to Sign Pledge," press release, July 15, 2026, https://www.michigan.gov/whitmer/news/press-releases/2026/07/15/gov-whitmer-data.

[78] National Conference of State Legislatures, "Which States Are Banning Data Centers?" July 1, 2026, https://www.ncsl.org/fiscal/which-states-are-banning-data-centers.

[79] New York Governor Kathy Hochul, "First Statewide Moratorium on New Hyperscale Data Centers Launched by Governor Kathy Hochul," press release, July 14, 2026, https://www.governor.ny.gov/news/first-statewide-moratorium-new-hyperscale-data-centers-launched-governor-kathy-hochul. Prior to this, in 2022, New York passed a two-year moratorium that blocked issuance of permits and approval of new cryptocurrency mines while the state evaluated their environmental effects. See NY Laws of 2022, Chapter 628.

[80] Letter from Greg Abbott, Governor of Texas, to Thomas Gleeson, Chairman, Public Utility Commission of Texas, and Pablo Vegas, President and Chief Executive Officer, ERCOT, August 3, 2026, https://gov.texas.gov/uploads/files/press/Thomas_Gleeson_Pablo_Vegas_Data_Centers_Directive_Letter_to_PUCT_ERCOT_August_2026_.pdf.

[81] See, for example, U.S. Congress, House Committee on Energy and Commerce, Subcommittee on Energy, *AI and the Grid: Meeting Growing Power Demand While Protecting Ratepayers*, hearing, 119th Cong., 2nd sess., April 29, 2026, https://energycommerce.house.gov/events/energy-hearing-ai-and-the-grid-meeting-growing-power-demand-while-protecting-ratepayers; U.S. Congress, House Committee on Science, Space, and Technology, Subcommittee on Investigations and Oversight, *Powering America's AI Future: Assessing Policy Options to Increase Data Center Infrastructure*, hearing, 119th Cong., 2nd sess., February 24, 2026, https://science.house.gov/hearings?ID=17369F69-BFD6-4F4A-A499-C38B73CCD1A6.

other electricity customers.[82] One such bill, the Ratepayer Protection Act (H.R. 9340), was ordered to be reported by the House Energy and Commerce Committee on July 21, 2026. A related bill (S. 5028) was introduced in the Senate. In addition, two bills (S. 4214 and H.R. 9442) would impose a nationwide data center construction moratorium until "laws are enacted to ensure that" data centers do not increase electricity costs for other consumers, among other provisions.

Some Members have introduced bills in the 119th Congress that focus on other aspects of data centers and the grid. Two bills (S. 5199 and S. 4806) would clarify that FERC has regulatory authority over the interconnection of large loads (e.g., data centers) to the grid. Two bills (S. 1475 and H.R. 6179) would require collection of data center electricity consumption information and establish emissions standards and an associated fee system for data center electricity consumption. One bill (H.R. 6983) would require data centers to generate their own electricity and that certain fractions be from clean energy sources as defined in the bill. Finally, one bill (H.R. 5927) would amend the Defense Production Act to accelerate the development of critical AI projects, including electricity infrastructure projects.

In addition to the bills cited above, other proposed legislation may address data centers' electricity issues. The set of bills discussed above should not be considered comprehensive.

Additional Resources

CRS has several other published products which may be helpful in further examining specific data-center-related energy policy issues:

- CRS Report R49057, *Data Centers and Water: Frequently Asked Questions*, coordinated by Peter Folger and Elena H. Humphreys
- CRS Report R48914, *Cryptocurrency Mining and the Electricity Sector*, by Corrie E. Clark
- CRS Report R48762, *Data Center Energy Infrastructure: Federal Permit Requirements*, by Paul W. Parfomak et al.
- CRS Report R48646, *Data Centers and Their Energy Consumption: Frequently Asked Questions*, by Martin C. Offutt et al.
- CRS Report R48583, *Energy Tax Benefits for Data Centers: In Brief*, by Nicholas E. Buffie

For additional information, congressional clients may also contact the CRS policy experts and legal points of contact listed in CRS Report R48920, *Data Centers: CRS Experts*, coordinated by Paul W. Parfomak.

[82] See, for example, H.R. 9777, H.R. 9655, H.R. 9419, H.R. 8033, H.R. 7977, H.R. 7066, H.R. 6529, S. 4559, S. 3852, and H.R. 8241/S. 3682.

Author Information

Ashley J. Lawson
Specialist in Energy Policy

Martin C. Offutt
Analyst in Energy Policy

Paul W. Parfomak
Specialist in Energy Policy

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