Hyperscale Data Centers

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Introduction

This issue memorandum summarizes the effects of hyperscale data centers—particularly regarding electricity and water consumption—on local communities, infrastructure, and residential ratepayers, and provides an overview of recent legislative and regulatory responses.

Background

In general, a data center is a facility that houses physical infrastructure used for computing, including data storage systems, network equipment, and servers.[1] Hyperscale data centers, like certain high-profile facilities used for developing artificial intelligence, typically require significant amounts of energy and have large geographic footprints.[2]

While data center definitions vary, and the distinction between a data center and a hyperscale data center is not uniformly defined, many experts focus on energy consumption as the key differentiating factor. For example, the International Energy Agency defines a data center as "hyperscale" if it consumes one hundred megawatts of electricity or more.[3] For reference, it takes approximately one hundred megawatts of electricity to support eighty thousand American households.[4]

Other metrics used to differentiate hyperscale data centers are related to the physical capacity and size of a facility. Some industry analysts maintain that, in addition to a one-hundred-megawatt-plus power draw, a hyperscale data center "should contain at least 5,000 computer servers and a large scale of network equipment and occupy at least 10,000 square feet of physical space."[5]

Recent rapid growth of artificial intelligence and machine-learning demands have brought hyperscale data centers into the spotlight. Data centers have existed for decades, dating back to the 1950s when they housed enormous mainframes used for centralized computing.[6] Data centers were hosting servers and supporting network technologies by the 1970s and had evolved to provide cloud computing services in the 2000s.[7]

Initially, data centers were "used by governments, universities and large corporations for tasks such as census data processing, scientific calculations, and financial transactions."[8] Now, the majority of global hyperscale data center infrastructure is controlled by just four entities: Amazon, Google, Meta, and Microsoft.[9] These entities are

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[1] Ava DiNunzio, *The Battle for Land and Energy: Rethinking Data Centers as Essential Public Infrastructure*, 12 Tex. A&M J. Prop. L. 617 (2026), https://scholarship.law.tamu.edu/cgi/viewcontent.cgi?article=1285&context=journal-of-property-law, at 620.

[2] *Id*.

[3] Robert L. Mayo, *Data Center Regulation in the United States*, North Dakota State University (October 2025), https://www.ndsu.edu/sites/default/files/documents/DataCenterRegulationInUSFinal.pdf, at 2.

[4] *Data Centers and Their Energy Consumption: Frequently Asked Questions*, Congressional Research Service (May 12, 2026), https://www.congress.gov/crs_external_products/R/PDF/R48646/R48646.8.pdf, at 2.

[5] *Id.*

[6] Sam Hosseini, *The Evolution of Data Centers: From Mainframes to AI-Driven Infrastructure*, Medium (September 24, 2025), https://medium.com/parallelq/the-evolution-of-data-centers-from-mainframes-to-ai-driven-infrastructure-a43a61791f28.

[7] *Id.*

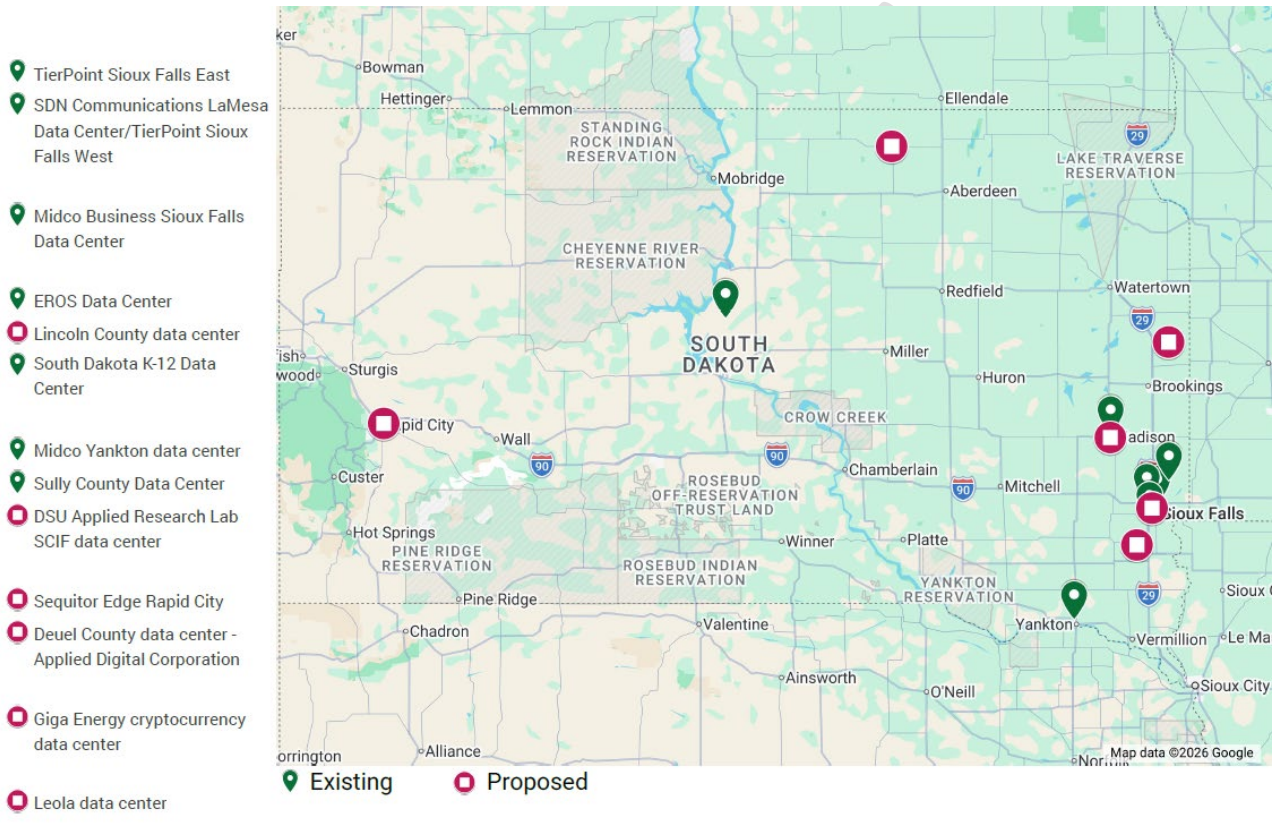
[8] *Id.*

[9] DiNunzio, *supra* note 1, at 642.

structurally "akin to a vertically integrated monopoly, where the same corporations that provide cloud services also own the critical infrastructure that makes those services possible."[10]

Despite their prevalence, none of these four entities own or operate data centers in South Dakota. In fact, there are not any hyperscale data centers operating in South Dakota at present. Figure 1 shows the existing smaller-scale data centers in this state, as well as several proposed projects.

Figure 1 - South Dakota Existing and Proposed Data Centers[11]



South Dakota's largest currently operating data center is a cryptocurrency mining facility located in Sully County.[12] The thirty-megawatt facility, owned by Pierre-based Big Watt Digital, is expected to expand to hyperscale size in the future.[13] Developers have proposed at least two other hyperscale data center projects in the state. One of the developers, Applied Digital, has since decided not to pursue the proposed Deuel County project due to a lack of

[10] DiNunzio, *supra* note 1, at 618.

[11] Vanessa Carlson Bender, *Amid Sioux Falls proposal, where are South Dakota's data centers?*, Argus Leader (March 3, 2026), https://www.argusleader.com/story/news/business-journal/2026/03/03/where-do-south-dakota-other-data-centers-exist/88946351007/.

[12] Makenzie Huber and Joshua Haiar, *Sully County, home to SD's largest data center, would welcome more with 'open arms,' official says*, South Dakota Searchlight (January 30, 2026), https://southdakotasearchlight.com/2026/01/30/sully-county-home-to-sds-largest-data-center-would-welcome-more-with-open-arms-official-says/.

[13] *Id.*

tax incentives.[14] Plans for the other proposed project, which Gemini is developing in Sioux Falls, have not changed.[15]

Some states have embraced the data center boom more than others, with ten of them hosting nearly sixty percent of all data centers in the country.[16] Virginia, known as "the data center capital of the world," currently hosts the most data centers in the country.[17] The United States is home to approximately six hundred hyperscale data centers, which is more than half of the facilities estimated to exist globally as of 2025.[18] The demand for data centers only appears to be growing, as data generation and consumption continue to increase exponentially across multiple industries.[19]

Effects of Hyperscale Data Centers

Electricity Consumption and Infrastructure

Specific estimates vary, but the current annual electricity use by data centers in the United States is estimated to be somewhere between ninety-one billion kilowatt-hours, which is "enough to power every home in New York City for two years,"[20] and one hundred seventy-six terawatt-hours.[21] It has been suggested that, by 2028, the consumption of electricity by data centers in this country could triple.[22]

Data centers use electricity for two main purposes: operating and cooling equipment.[23] Servers used for processing and storing digital information account for more than half of a data center's electricity consumption.[24] A slightly smaller portion of a data center's energy consumption is used to prevent those servers from overheating."[25]

As of 2024, more than forty percent of the electricity used by data centers in the United States was supplied by natural gas.[26] Approximately twenty-four percent of electricity was supplied by wind and solar energy, twenty percent was supplied by nuclear power, and fifteen percent by coal.[27] The share of energy supplied by nuclear

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[14] Makenzie Huber, *One data center project 'unchanged' while another 'doesn't make sense' after rejected incentives*, South Dakota Searchlight (April 2, 2026), https://southdakotasearchlight.com/2026/04/02/one-data-center-project-unchanged-while-another-doesnt-make-sense-after-rejected-incentives/.

[15] *Id.*

[16] Carla Walker and Ian Goldsmith, *From Energy Use to Air Quality, the Many Ways Data Centers Affect US Communities*, World Resources Institute (February 17, 2026), https://www.wri.org/insights/us-data-center-growth-impacts.

[17] The states with a largest amount of data centers are, in descending order, Virginia, Texas, California, Illinois, Georgia, Ohio, Arizona, New York, Oregon, and Florida. *Id.*

[18] Mayo, *supra* note 3, at 2.

[19] Terry Nguyen and Ben Green, *What Happens When Data Centers Come to Town*, University of Michigan (July 2025), https://stpp.fordschool.umich.edu/sites/stpp/files/2025-07/stpp-data-centers-2025.pdf, at 4.

[20] DiNunzio, *supra* note 1, at 625.

[21] *Data Centers*, *supra* note 4, at 3.

[22] Nguyen & Green, *supra* note 19, at 5.

[23] *Data Centers*, *supra* note 4, at 3.

[24] Rebecca Leppert, *What we know about energy use at U.S. data centers amid the AI boom*, Pew Research Center (October 24, 2025), https://www.pewresearch.org/short-reads/2025/10/24/what-we-know-about-energy-use-at-us-data-centers-amid-the-ai-boom/#what-is-energy-used-for-at-data-centers.

[25] *Id.*

[26] *Id.*

[27] *Id.*

power will likely increase in the future, although natural gas is projected to continue supplying the largest share of energy to data centers through 2030.[28]

Data centers' electricity needs are met through a combination of the local grid and on-site generation.[29] The electricity needs of a hyperscale data center typically far exceed the local grid's available capacity for electricity generation.[30] In conjunction with drawing from the local grid, hyperscale data centers often use natural gas turbines to generate on-site electricity, also known as behind-the-meter generation.[31] Given the potential risks of local-grid disruptions, behind-the-meter generation is particularly necessary for hyperscale data centers running large-scale artificial intelligence models that require uninterrupted power.[32]

Notwithstanding the availability of behind-the-meter generation to reduce grid strain, many areas are still unprepared to meet the massive energy needs of rapidly constructed data centers.[33] Developers are attracted to cold-climate states like South Dakota because low temperatures help to cool servers and wind energy keeps operating costs down.[34] Yet the extreme weather conditions for which South Dakota is well known contribute significantly to grid stress, resulting in vulnerability that is exacerbated by data centers' massive electricity consumption.[35] This combination of factors drives up costs that could then be passed to residential ratepayers.[36]

Residential Ratepayer Concerns

Electricity rates are driven by costs of generation, transmission, and distribution.[37] In general, these costs have continued to rise for residential ratepayers, with rates increasing twenty-five percent over the ten-year period from 2014 to 2024.[38] Rates also increased by over sixty billion dollars in 2025, with ratepayers across the country paying, on average, nearly ten percent more for electricity than the previous year.[39]

Whether data centers are responsible for the rate increases has been disputed. Between 2019 and 2025, researchers at Lawrence Berkeley National Laboratory found that increased rates were mainly the result of upgrading infrastructure due to age or for purposes of resiliency.[40] Data centers were not identified in that analysis as major rate influencers.[41] The researchers also found that some states with large data center growth even experienced rate decreases during the period studied.[42]

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[28] *Id.*
[29] Mayo, *supra* note 3, at 2.
[30] *Id.* at 1.
[31] *Id.*
[32] *Id.* at 2.
[33] Nguyen & Green, *supra* note 19, at 6.
[34] Joshua Haiar, *Massive data centers consuming large amounts of energy have eyes on South Dako*ta, South Dakota Searchlight (December 7, 2024), https://southdakotasearchlight.com/2024/12/07/massive-data-centers-consuming-large-amounts-of-energy-have-eyes-on-south-dakota/.
[35] DiNunzio, *supra* note 1, at 627.
[36] *Id.* at 626.
[37] *Data Centers*, *supra* note 4, at 10.
[38] Leppert, *supra* note 24.
[39] Walker & Goldsmith, *supra* note 16.
[40] *Data Centers*, *supra* note 4, at 10.
[41] *Id.*
[42] *Id.* at 11.

On the other hand, some scholars argue that data centers cause rate increases by "driving up overall energy demand, which can strain grid capacity and force utilities to invest in costly infrastructure upgrades."[43] Recent calls for increased consumer protections are borne out of the concern that small businesses and residential ratepayers could end up subsidizing the costs of infrastructure upgrades necessitated by new data centers' electricity demands.[44]

Stranded assets are another concern for residential ratepayers. Often, infrastructure for electricity and water can last for thirty years.[45] Residential ratepayers could end up paying for unnecessary infrastructure upgrades if data centers cease or reduce operations before the upgrade costs are recovered.[46] In response to this concern, some utility providers have suggested adding financial-safeguard provisions related to stranded assets into written agreements with hyperscale data centers.[47]

Increased rates could also arise from broader arrangements surrounding data center development. Long-term service agreements between developers and utility providers are believed to cause decreased supply and increased rates for residential and other ratepayers.[48] Developers also frequently enter into collaborative relationships with providers to lobby for increased rates.[49] Additionally, developers and local entities often enter into non-disclosure agreements that prevent the public from accessing information about the projected resource demands, impacts, and scale of data center projects.[50] Experts worry that agreements and relationships like these could exacerbate financial strains in local communities and disproportionately impact residential ratepayers, especially those with low incomes.[51]

Data center proponents claim the facilities create employment and investment opportunities, improve the economy, and expand digital access.[52] Opponents argue that most of the jobs created by data centers are highly skilled construction jobs, which are temporary and could bring in workers from out-of-state rather than the local community.[53] One study found that hyperscale data centers generally have fewer than one hundred fifty full-time employees.[54] Moreover, data center jobs are typically low-wage and non-technical—e.g., janitorial, maintenance, and security positions—and "do not contribute to sustained economic growth or long-term career opportunities for local residents."[55]

[43] Nguyen & Green, *supra* note 19, at 3.
[44] Leppert, *supra* note 24.
[45] Walker & Goldsmith, *supra* note 16.
[46] *Id.*
[47] Haiar, *supra* note 34.
[48] Nguyen & Green, *supra* note 19, at 3.
[49] *Id.* at 9.
[50] Walker & Goldsmith, *supra* note 16.
[51] Nguyen & Green, *supra* note 19, at 9.
[52] DiNunzio, *supra* note 1, at 647.
[53] Brooke Manca, *We need transparency about data centers to weigh their economic and environmental impacts, South Dakota Searchlight* (January 6, 2026), https://southdakotasearchlight.com/2026/01/06/we-need-transparency-about-data-centers-to-weigh-their-economic-and-environmental-impacts/.
[54] Walker & Goldsmith, *supra* note 16.
[55] Nguyen & Green, *supra* note 19, at 7.

Water Consumption

Large-scale electricity consumption generates heat, which data centers often remove using liquid cooling systems.[56] While there are multiple types of liquid cooling systems that use varying amounts of water, most data centers consume more than ten million gallons of water annually.[57] One study estimates that a hyperscale data center could consume more than five hundred thousand gallons of water per day.[58] For example, the annual water consumption of Google's data center in Council Bluffs, Iowa, is approximately nine hundred eighty million gallons—equivalent to that of four million households.[59]

By 2028, hyperscale data centers are expected to directly consume up to thirty-three billion gallons of water per year.[60] This estimate does not include indirect water usage for generating electricity or other processes.[61] According to researchers at the University of California Berkeley School of Law:

> Data centers' water and energy use are intertwined and may present different trade-offs at different scales. On a smaller scale, a data center's direct resource use can increase stress on local water systems and regional energy systems. On a larger scale, both direct and indirect resource use (like water used in energy production) contribute to a data center's—and the broader data center industry's—aggregate water and energy footprint.[62]

One specific example of this trade-off between water and electricity involves centralized cooling systems. A data center can be cooled by moving air or liquid throughout the facility to absorb and exchange heat.[63] Experts suggest that currently available cooling systems can be optimized to consume less electricity or less water but not both.[64] This is because air cooling systems use less water than liquid cooling systems, but liquid cooling systems are generally more energy efficient.[65]

Evaporative cooling, chilled water loops, and liquid immersion are types of liquid cooling systems that remove heat by circulating water.[66] Of these systems, evaporative cooling typically consumes the most water as heat is pushed through wet surfaces that cool the air while the water evaporates.[67] The water used for evaporative cooling requires constant replenishment.[68] A related concern is that the evaporated water cannot be replaced through recycling.[69] It is estimated that a data center using evaporative cooling could consume an amount of

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[56] *Id.* at 4.
[57] *Id.* at 5.
[58] *Data Centers*, *supra* note 4, at 8.
[59] Nguyen & Green, *supra* note 19, at 5.
[60] Leppert, *supra* note 24.
[61] *Id.*
[62] Marie Grimm, Nell Green Nylen, and Michael Kiparsky, *Regulating Data Center Water Use in California*, Center for Law, Energy & the Environment, UC Berkeley School of Law (February 2026), https://www.law.berkeley.edu/research/clee/research/wheeler/water-innovation/data-center-water-use/.
[63] *Data Centers*, *supra* note 4, at 7.
[64] Nguyen & Green, *supra* note 19, at 5.
[65] *Id.* at 5.
[66] *Id.*
[67] Felicity Barringer, *Thirsty for power and water, AI-crunching data centers sprout across the West*, Economic Development & The West (April 8, 2025), https://andthewest.stanford.edu/2025/thirsty-for-power-and-water-ai-crunching-data-centers-sprout-across-the-west/.
[68] *Data Centers*, *supra* note 4, at 8.
[69] Barringer, *supra* note 67.

water that is comparable to the water needs of Pierre on the low end of consumption and Sioux Falls on the high end.[70]

Chilled water systems cool air through chilled coils using a refrigeration cycle.[71] In closed-loop systems, the water used for cooling is recycled.[72] This type of system, though more water-efficient than evaporative cooling, could cause a more than twenty percent increase in electricity demand.[73]

Liquid immersion and direct liquid cooling, or "direct-to-chip" cooling, are emerging technologies that "use dielectric fluids to cool components directly, enabling higher power densities and energy savings."[74] Direct liquid cooling works by intercepting energy before it raises the air temperature.[75] These systems may not be as widely available due to the need for specialized equipment.[76]

A less expensive option could be free cooling, which uses water that is cooled "passively by environmental conditions."[77] Free cooling is more compatible with cooler climates.[78] As previously mentioned, South Dakota's climate is attractive to some data center developers due in part to the cold weather. Although this state may be preferable from a cooling standpoint, concerns about intense summer heat and water scarcity remain.

Of all the data centers that were built or have been in development since 2022, two-thirds are in areas deemed "water-stressed."[79] Currently, drought conditions exist in over sixty percent of the country.[80] Compared to other western states, South Dakota is not currently experiencing a crisis-level water shortage.[81] Nonetheless, officials have warned that declining aquifer levels could limit new data center development unless there are significant investments in future water infrastructure.[82]

Pollution

Data centers need access to uninterrupted power, for which most depend on natural gas.[83] Some have argued that natural gas turbines used by data centers could exacerbate dangerous air quality, negatively impacting health and the environment.[84] Additionally, many data centers use diesel generators for backup on-site generation.[85] The air pollutants released by diesel generators include "fine particulate matter (PM2.5) and nitrogen oxides (NOx), linked to respiratory disease, heart disease, asthma and other serious health risks."[86] One suggested solution to address air pollution caused by data centers is to replace diesel generators with battery storage

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[70] Manca, *supra* note 53.
[71] Nguyen & Green, *supra* note 19, at 5.
[72] Manca, *supra* note 53.
[73] *Id.*
[74] Nguyen & Green, *supra* note 19, at 5.
[75] *Data Centers*, *supra* note 4, at 8.
[76] Nguyen & Green, *supra* note 19, at 5.
[77] *Data Centers*, *supra* note 4, at 8.
[78] *Id.*
[79] Walker & Goldsmith, *supra* note 16.
[80] Jasmine Laws and Daniel Orton, *Map Shows Where Data Centers Are Being Built in Drought-Hit Areas*, Newsweek (May 29, 2026), https://www.newsweek.com/map-data-centers-built-drought-hit-areas-11997520.
[81] Bart Pfankuch, *Water worries: Billions need to keep South Dakota taps flowing*, KOTA Territory (May 5, 2026), https://www.kotatv.com/2026/05/05/water-worries-billions-needed-keep-south-dakota-taps-flowing/.
[82] *Id.*
[83] DiNunzio, *supra* note 1, at 626.
[84] Walker & Goldsmith, *supra* note 16.
[85] *Id.*
[86] *Id.*

systems.[87] While battery storage systems help with grid stabilization, they also come with risks like fires that are difficult to extinguish, potentially toxic emissions, and hazardous cleanup and disposal conditions.[88]

Noise pollution is another data center impact, reportedly causing sleep disruptions and lowering quality of life.[89] Some data centers have been compared to airports due to continuously running natural gas turbines that sound "as loud as a passenger jet."[90] Noise from backup generators at data centers "can reach 105dB, louder than a snowmobile and as intense as a car horn at full tilt."[91] Data center cooling is also said to be a significant source of noise pollution, particularly air cooling systems that rely on large numbers of fans.[92] One non-profit organization found that the frequencies emitted by data centers "can be heard and felt for hundreds of feet in surrounding areas, with noise levels reaching as high as 96dB for 24 hours a day and seven days a week."[93]

Infrasound is another form of noise pollution caused by data centers—though it is inaudible, it can be felt by humans, with some complaining of adverse effects like anxiety, headaches, insomnia, and nausea.[94] Acoustic barriers, backup generator insulation, and setbacks are some measures that have been proposed to address noise pollution caused by data centers.[95] Another suggested solution is for local governments to implement, through the permitting process, decibel level requirements and noise mitigation and monitoring.[96]

Local Responses to Data Centers

The regulatory landscape governing data centers is highly fragmented, both within individual states and nationwide.[97] Influenced significantly by politics, local governments often regulate data centers in response to the specific economic and environmental impacts affecting the local community, as well as constituent concerns about nuisances and zoning.[98] This regulation is often in the form of contract requirements, moratoria, land-use restrictions, and special permitting.

One suggestion for reducing land-use conflicts is requiring developers to adopt policies related to infrastructure planning and other environmental mitigation strategies.[99] For example, the city of Lancaster, Pennsylvania, entered into an agreement directing the developer of a data center to use clean energy and provide noise buffering, economic contributions, and other benefits and protections to the community.[100]

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[87] *Id.*

[88] *Battery Energy Storage Systems: Main Considerations for Safe Installation and Incident Response*, Environmental Protection Agency (July 2025), https://www.epa.gov/system/files/documents/2025-08/battery_energy_storage_systems_fact_sheet.pdf, at 1.

[89] Walker & Goldsmith, *supra* note 16.

[90] Jowi Morales, *AI data centers face increasing complaints about inaudible but 'felt' infrasound — citizens complain high- and low-frequency sounds do not register on decibel meters but cause adverse health effects*, Tom's Hardware (May 10, 2026), https://www.tomshardware.com/tech-industry/artificial-intelligence/data-centers-face-increasing-infrasound-complaints-from-neighboring-communities-sounds-do-not-register-on-decibel-meters-but-irritate-local-citizens.

[91] *Id.*

[92] *Id.*

[93] *Id.*

[94] *Id.*

[95] Walker & Goldsmith, *supra* note 16.

[96] *Id.*

[97] Mayo, *supra* note 3, at 1.

[98] *Id.* at 11.

[99] DiNunzio, *supra* note 1, at 650.

[100] Walker & Goldsmith, *supra* note 16.

Many local governments have also sought to pause data center development while determining whether to allow data centers into communities. Jerome Township, Ohio, imposed a temporary moratorium pending reassessment of safeguards and siting requirements.[101] The city council in Monterey Park, California, implemented an indefinite moratorium earlier this year, and residents subsequently voted on a permanent data center ban.[102] Seattle is presently the largest city with a moratorium on data centers, while officials determine whether data centers belong on urban land.[103]

There are vast areas of rural, unpopulated land in this country, which could meet the massive space requirements of hyperscale data centers. Even so, proximity to existing infrastructure is often prioritized by developers aiming to build facilities more quickly and cost effectively.[104] Proponents suggest that co-locating data centers near existing generation facilities could reduce grid strain.[105] Another result of this proximity is that hyperscale data center development competes directly with residential and retail development and conservation projects.[106]

In response, some local governments have rezoned or created new zoning for hyperscale facilities.[107] For example, the Sioux Falls City Council rezoned approximately one hundred forty-five acres of agricultural land earlier this year in anticipation of the Gemini data center project.[108] The rezoning of the land to light industrial use included restrictions like a two-hundred-foot setback and certain landscaping and siting requirements.[109]

Local governments in other states have also created overlay districts to establish limitations on data center development. Designed to regulate land use, an overlay district is a geographic area that is "overlaid on top of one or more existing zoning districts to designate areas where specific permitting requirements or other obligations or opportunities for specific kinds of development apply."[110]

Opponents of the overlay districts have sought elimination of "by right" data center development, calling instead for developers to go through a more rigorous permitting process.[111] In South Dakota specifically, regulation of development at the local level could be achieved through the conditional use permitting process. For example,

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[101] *Id.*

[102] Sanya Mansoor, *In first, California city overwhelmingly votes to permanently ban datacenters*, The Guardian (June 3, 2026), https://www.theguardian.com/us-news/2026/jun/03/california-monterey-park-datacenters-ban.

[103] Adam Willems, *Seattle poised to ban new data centers in blow to big tech hub*, The Guardian (June 3, 2026), https://www.theguardian.com/technology/2026/jun/03/seattle-datacenter-moratorium.

[104] Morales, *supra* note 90.

[105] Kayla Guo, *Data centers are booming in Texas. What does that mean for the grid?*, The Texas Tribune, January 24, 2025, https://www.texastribune.org/2025/01/24/texas-data-center-boom-grid/.

[106] DiNunzio, *supra* note 1, at 624.

[107] Walker & Goldsmith, *supra* note 16.

[108] Jackson Dircks, *Sioux Falls City Council approves rezoning of proposed data center land*, South Dakota Public Broadcasting (January 7, 2026), https://www.sdpb.org/politics/2026-01-07/sioux-falls-city-council-approves-rezoning-of-proposed-data-center-land.

[109] Joe Sneve, *Planned data center sparks outrage in downtown Sioux Falls*, Sioux Falls Live (January 7, 2026), https://www.siouxfallslive.com/news/sioux-falls/planned-data-center-sparks-outrage-in-downtown-sioux-falls.

[110] *Local Ordinances to Help Bring Data Centers into Alignment with Climate Goals*, Georgetown Climate Center, Local Ordinances for Climate Adaptations & Mitigation (October 2025), https://www.georgetownclimate.org/files/Local-Ordinances-Report/GCC_Local_Ordinances_Data_Centers_2025.pdf, at 5.

[111] Peter Cary, *Supervisors mull eliminating data center overlay district but delay vote*, Prince William Times (May 16, 2024), https://www.princewilliamtimes.com/news/supervisors-mull-eliminating-data-center-overlay-district-but-delay-vote/article_95107f64-13bd-11ef-b7e6-b77d1d7cc54b.html.

the mayor of Rapid City has proposed conditional use permits for hyperscale data centers, which would require public hearings and comprehensive studies.[112]

State-Level Responses

Public Utilities Commissions

Data centers are governed at the state level in two main ways: through public utilities commissions and by legislation.[113] Each state has a public utilities commission, or analogous agency, which regulates public services like electricity, natural gas, and telecommunications.[114] Commissions' tariff-setting processes have been suggested as means to impose greater responsibilities on data center developers by allowing parties to negotiate rates for electricity and other terms of service.[115] Some believe these special rate contracts also mitigate upward pressure on retail electricity rates.[116] On the other hand, a 2025 Harvard Law School study found that residential rates could increase because special rate contract proceedings often lack transparency and result in data centers paying discounted rates.[117]

Some state commissions have already adopted large load tariffs through negotiated settlements between state utility regulators and utility providers. For example, the Public Utilities Commission of Ohio entered into a settlement agreement last year with a utility provider, which requires data centers to contract for a term of at least twelve years and pay a minimum of eighty-five percent of contracted demand.[118] It has been suggested that these types of agreements help discourage overstated or speculative interconnection requests.[119]

Commissions also establish rules for regulating data centers. In 2025, the Public Service Commission in Georgia adopted a rule authorizing a utility provider to charge new large-load customers in a way that prevents cost shifting to other ratepayers.[120] Data centers subject to the rule are responsible for site specific costs, as well as costs incurred for distribution, generation, and transmission.[121]

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[112] Melissa Alexis, *Rapid City mayor proposes new permit requirements for large-scale data centers*, NewsCenter1 (April 22, 2026), https://www.newscenter1.tv/rapid-city-mayor-proposes-new-permit-requirements-for-large-scale-data-centers.

[113] Theo Kaufman, *Consumers End Up Paying for the Energy Demands of Data Centers, How Can Regulators Fight Back?*, The Georgetown Environmental Law Review (October 6, 2025), https://www.law.georgetown.edu/environmental-law-review/blog/consumers-end-up-paying-for-the-energy-demands-of-data-centers-how-can-regulators-fight-back/.

[114] *National List of Utility Commissions*, Pennsylvania Public Utility Commission, https://www.puc.pa.gov/about-the-puc/national-list-of-utility-commissions/.

[115] Kaufman, *supra* note 113.

[116] *Id.*

[117] Eliza Martin and Ari Peskoe, *Extracting Profits from the Public: How Utility Ratepayers Are Paying for Big Tech's Power,* Harvard Law School Environmental & Energy Law Program (March 2025), https://eelp.law.harvard.edu/wp-content/uploads/2025/03/Harvard-ELI-Extracting-Profits-from-the-Public.pdf, at 32.

[118] Vincent Nolette, *Data Center Regulation: What Local Governments Should Know about Large-Load Tariffs and Clean Transition Tariffs, Columbia Law School Sabin Center for Climate Change Law* (June 2, 2026), https://blogs.law.columbia.edu/climatechange/2026/06/02/data-center-regulation-what-local-governments-should-know-about-large-load-tariffs-and-clean-transition-tariffs/.

[119] *Id.*

[120] *PSC Approves Rule to Allow New Power Usage Terms for Data Centers*, Georgia Public Service Commission News Release (Jan. 23, 2025), https://psc.ga.gov/site/assets/files/8617/media_advisory_data_centers_rule_1-23-2025.pdf.

[121] *Id.*

Another proposed way to ensure regulatory safeguards and responsible development is through the classification of hyperscale data centers as public utilities.[122] Granting public utility status to data centers could also confer on developers the authority to exercise eminent domain. Proponents argue that the limits and scope of authority could be tailored to prevent abuse.[123]

Courts and state legislatures often determine whether an entity is a public utility, and those determinations vary significantly throughout the country.[124] The primary issue when determining whether to classify an entity as a public utility is whether it provides a public service. Judicial interpretations typically involve assessing factors like availability, competition, and public necessity.[125]

Notably, the first Trump administration deemed data centers as essential infrastructure during the COVID-19 pandemic to ensure uninterrupted access to cloud-based government applications, online education, remote work, and telehealth.[126] Nonetheless, it remains unsettled whether South Dakota courts would find data centers as sufficiently essential to merit regulation as public utilities with authority to exercise eminent domain.

The South Dakota Legislature has not included data centers in the statutory definition of "public utility."[127] At present, the Public Utilities Commission of the State of South Dakota does not regulate data centers but has authority to promulgate rules related to the development and implementation of electricity rates and tariffs. Reviewing contracts between certain utilities and large-load customers, like data centers, is also one of the commission's duties.[128] Additional regulatory authority, however, would likely need to be granted by the Legislature.

Recent Legislation in South Dakota

During the 2026 legislative session, the Public Utilities Commission of the State of South Dakota sought passage of House Bill 1038. The bill successfully passed, granting the commission authority to assess a data center the actual costs related to reviewing a contract for electricity service if the facility's peak demand is at least ten megawatts.[129]

In 2026, the Legislature also passed Senate Bill 135. Known colloquially as the "Data Center Bill of Rights for Citizens," the legislation requires electricity providers to establish separate terms and conditions for service provided to data centers.[130] The bill also clarifies that the state may not preempt local authority to regulate data centers.[131] Lastly, it establishes protections related to data center water consumption, including notice, reporting, and usage requirements.[132]

[122] DiNunzio, *supra* note 1, at 618-619.
[123] *Id.* at 639.
[124] *Id.* at 629.
[125] *Id.*
[126] *Id.* at 640.
[127] SDCL 49-34A-1.
[128] SDCL 49-34A-56.
[129] SDCL 49-34A-56.1.
[130] SDCL 49-50-2.
[131] SDCL 49-50-3.
[132] SDCL 49-50-4, 49-50-5.

Moratoria

In April 2026, Maine became the first state to pass a statewide moratorium on data centers.[133] The bill prohibited state agencies and political subdivisions from approving or issuing permits to any data center with a power demand of twenty megawatts or greater until November 2027.[134] The bill was ultimately vetoed, and the Maine Legislature failed to override the veto.[135]

In 2026, the New York State Legislature passed legislation establishing a one-year moratorium on the issuance of permits to data centers with a peak demand of twenty megawatts or greater.[136] If signed by the governor, the bill would establish the nation's first enacted state-wide data center moratorium and provide other ratepayer protections.[137]

Residential Ratepayer Protections

Several state legislatures have imposed guardrails on data centers in response to rising residential electricity bills.[138] States like Florida, Maryland, Minnesota, Oklahoma, and Oregon have responded by authorizing or requiring separate rates and tariffs for large-load electricity customers like data centers.[139] The legislation enacted in these states prohibits the shifting of electricity and infrastructure costs caused by data centers onto residential or other ratepayers.[140]

The foregoing states and others also have laws requiring that service agreements between data centers and electricity providers contain minimum duration requirements, minimum load or "take-or-pay" provisions, or other terms and conditions.[141] For example, Utah's contract requirements include cost-allocation and financial-security provisions.[142]

Stranded Asset and Other Infrastructure Protections

States have also implemented legislative protections against stranded assets to mitigate the risk that utility investments will not be fully recovered. Similarly, some states have enacted laws requiring financial security, like collateral or minimum contributions, for large-load electricity customers to ensure that data centers bear cost responsibility. For example, legislation enacted in Texas requires the establishment of stranded-asset and financial-commitment standards for the interconnection of data centers.[143]

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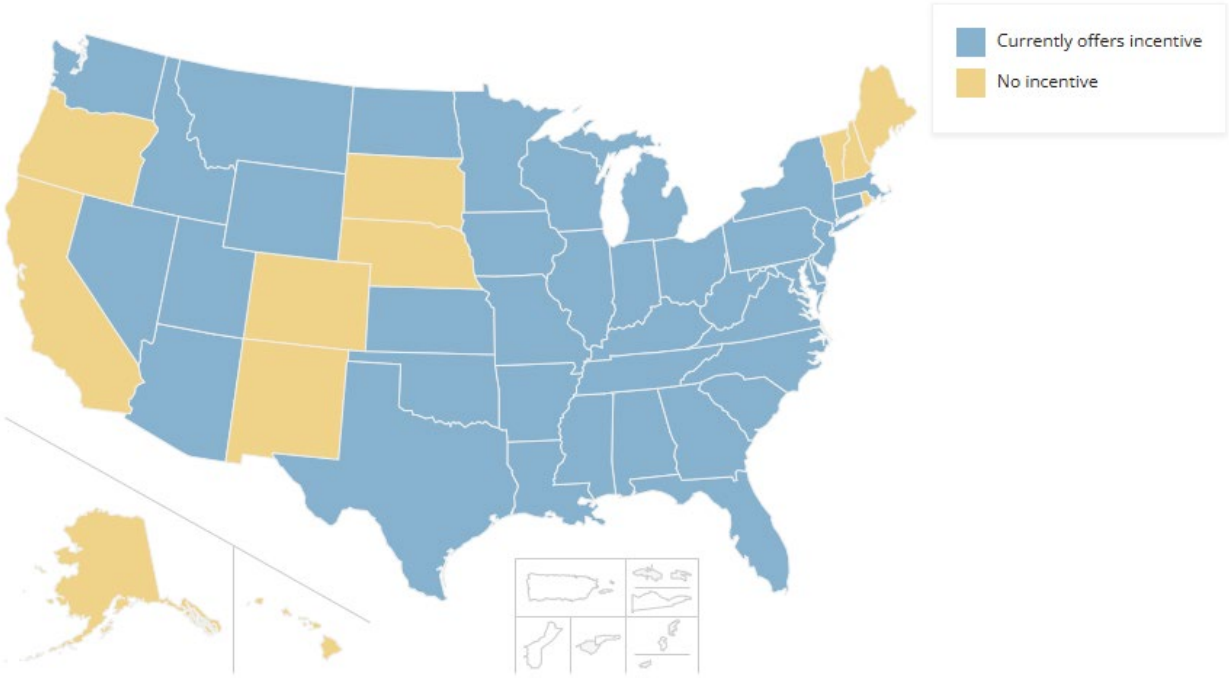
[133] Torrie Herrington, *Maine lawmakers pass the first statewide ban on large data centers*, The Maine Monitor (April 15, 2026), https://themainemonitor.org/maine-data-center-moratorium/.
[134] L.D. 307, 132d Leg., 2d Reg. Sess. (Me. 2026).
[135] Kaitlyn Budion, *Despite initial support, Legislature fails to override Mills' veto of landmark data center ban*, Maine Morning Star (April 29, 2026), https://mainemorningstar.com/2026/04/29/despite-initial-support-legislature-fails-to-override-mills-veto-of-landmark-data-center-ban/.
[136] S. 10642, 2025-2026 Leg., Reg. Sess. (N.Y. 2026).
[137] Sanya Mansoor, *'We should not have to sacrifice': New York could become first state to temporarily ban large datacenters*, The Guardian (June 6, 2026), https://www.theguardian.com/us-news/2026/jun/06/new-york-datacenter-temporary-ban.
[138] Jasmine Laws, *How Every State Is Dealing With Data Centers Amid Anger, Support*, Newsweek (May 30, 2026), https://www.newsweek.com/how-every-state-is-dealing-with-data-centers-amid-anger-support-12003373.
[139] 2026 Fla. Laws ch. 2026-65; H.B. 1532, 2026 Leg., Reg. Sess. (Md. 2026); 2025 Minn. Laws ch. 12; H.B. 2992, 60th Leg., 2d Sess. (Okla. 2026); 2025 Or. Laws ch. 323.
[140] *Id*.
[141] *Id*.
[142] Utah Code § 54-26-202 (2025).
[143] 2025 Tex. Gen. Laws ch. 953.

Some states have responded to increasing electricity demands and concerns about grid stress caused by data centers by passing laws that facilitate behind-the-meter or on-site generation, self-supply arrangements, or other alternative electricity-service structures.[144] Ohio, Utah, and West Virginia are examples of states that have allowed data centers flexibility to secure power in ways that reduce reliance on traditional utility interconnection.[145] In addition, Texas law requires the establishment of standards requiring data centers to use on-site generation or curtail load in emergencies.[146]

Tax Incentives

There are significantly more states with data center incentives than with protections, although many states have tied protections to tax incentives. As shown in Figure 2 below, at least thirty-eight states have enacted tax incentives for data centers as of June 2026.[147]

Figure 2 - States with Data Center Incentives[148]



Currently, every state offering data center tax incentives has a sales tax exemption.[149] In some of these states, the exemption is received at the point of sale, while other states provide an annual sales tax refund.[150] Generally, sales-tax exemptions apply to qualifying construction materials, computer equipment, and data center

[144] Billy Culleton, *States Look at Ways to Encourage Off-the-Grid Power for Data Centers*, MultiState (December, 16, 2025), https://www.multistate.us/insider/2025/12/16/states-look-at-ways-to-encourage-off-the-grid-power-for-data-centers.
[145] H.B. 15, 136th Gen. Assemb., Reg. Sess. (Ohio 2025); Utah Code §§ 54-26-504, 54-26-505; H.B. 2014, 87th Leg., Reg. Sess. (W. Va. 2025).
[146] 2025 Tex. Gen. Laws ch. 953.
[147] *Subsidizing Servers: How States Are Competing to Attract Data Centers*, National Conference of State Legislatures (April 1, 2026), https://www.ncsl.org/fiscal/subsidizing-servers-how-states-are-competing-to-attract-data-centers#36970.
[148] *Id.*
[149] *Id.*
[150] *Id.*

infrastructure. Several states also exempt data centers' electricity use from sales tax. For example, Iowa law exempts the electricity used for data centers' business operations.[151]

Property tax is typically administered at the local government level, but state-wide property-tax relief is available to data centers in at least eleven states.[152] The form of state-wide property tax relief for data centers varies. For example, Montana offers a property tax reduction to qualified data centers.[153] Nevada offers partial abatements of property taxes imposed on new or expanded data centers.[154] Other states have authorized the reduction of data center property taxes at the local level.[155]

According to proponents, data center tax incentives contribute to local economic growth, resulting in better jobs and increased tax revenue.[156] Opponents argue that tax incentives burden local communities because they actually reduce tax revenue and do not provide high-paying employment opportunities.[157] For example, businesses and residents in Michigan were found to pay higher taxes and receive fewer public services as a result of data center tax incentives.[158]

One review found that Virginia is one of ten states losing more than one hundred billion dollars annually due to data center subsidies.[159] The Virginia General Assembly has since passed a 2026 budget bill containing a data center tax.[160] The tax, a monthly payment of 1.1 cents for every kilowatt-hour of electricity a data center consumes, was developed as a compromise in response to those seeking to offset the state's revenue losses.[161]

Another way that states have sought to offset the purported negative effects of data centers is by conditioning tax incentives on "public-resource impacts and demonstrable community benefits."[162] For example, some states require a minimum level of job creation to qualify for incentives and some require data centers to pay at or above the average local wage to qualify for tax relief.[163] Other states' tax exemptions are often tied to compliance with environmental and green building standards.[164]

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[151] Iowa Code § 423.3(95)(a)(3)(a) (2025).

[152] *Policy Snapshot: Data Center Incentives*, National Conference of State Legislatures (April 17, 2026), https://www.ncsl.org/fiscal/policy-snapshot-data-center-incentives.

[153] Mont. Code Ann. § 15-6-162 (2025).

[154] Nev. Rev. Stat. § 360.754 (2025).

[155] *Subsidizing Servers*, *supra* note 147.

[156] *Id.*

[157] Nguyen & Green, *supra* note 19, at 3.

[158] *Id.* at 8.

[159] Kasia Tarczynska, *Cloudy with a Loss of Spending Control: How Data Centers Are Endangering State Budgets, Good Jobs First* (April 2025), https://goodjobsfirst.org/cloudy-with-a-loss-of-spending-control-how-data-centers-are-endangering-state-budgets/.

[160] H.B. 30, 164th Gen. Assemb., 1st Spec. Sess. (Va. 2026).

[161] Kelly R. Taylor, *Virginia Lawmakers Approve First-of-Its-Kind Data Center Power Tax*, Kiplinger (June 24, 2026), https://www.kiplinger.com/taxes/virginia-approves-first-data-center-power-tax.

[162] Sarah L. Lode, J. Michael Showalker, Robert A. Middleton, *States Reconsider Data Center Incentives and Permitting as Energy, Water, and Fiscal Pressures Mount*, National Law Review (June 13, 2026), https://natlawreview.com/article/states-reconsider-data-center-incentives-and-permitting-energy-water-and-fiscal.

[163] *Policy Snapshot*, *supra* note 152.

[164] Mary Fitzpatrick, *Data Center Energy Impacts and State Responses*, Connecticut General Assembly Office of Legislative Research (2025), https://www.cga.ct.gov/2025/rpt/pdf/2025-R-0164.pdf, at 2.

Water Conservation and Transparency Laws

Kansas is one of the states that has conditioned data center tax incentives on water conservation requirements.[165] In addition, states are addressing water-supply impacts by limiting the sources from which data centers may consume water and requiring certain types of cooling systems. Taking this approach, Idaho recently passed legislation requiring data centers to either implement closed-loop or other non-consumptive cooling systems or use water supplied by a municipal or water district system.[166]

There have also been recent legislative efforts to increase transparency regarding data center water consumption, reflecting ongoing uncertainty about the volume of water used by data centers and the resulting impacts on local water resources.[167] For example, both Utah and Virginia passed legislation this year requiring reporting and public disclosure requirements related to water consumption attributable to data centers.[168]

Federal Responses to Data Centers

Current Administration's Stance on Data Centers

In July 2025, President Trump issued an executive order entitled *Accelerating Federal Permitting of Data Center Infrastructure*, which prioritizes rapid buildout of hyperscale data center infrastructure.[169] The order directs federal agencies to provide financial support, expedite environmental review, streamline permitting, and identify and authorize federal land siting for qualified projects.[170]

Furthermore, President Trump's March 2026 *Ratepayer Protection Pledge* proclamation calls on leading companies operating hyperscale data centers to be fully responsible for energy and infrastructure costs caused by the data centers.[171] The proclamation requests that each of these companies voluntarily commit to implement cost-allocation, self-supply, community-investment, and grid-resiliency measures intended to prevent the shifting of data center-related costs to other ratepayers.[172]

Federal Electricity Regulation

The Federal Power Act governs the regulation of interstate transmission and wholesale electricity sales.[173] The act established the Federal Energy Regulatory Commission to oversee those activities in interstate commerce.[174] In addition, the commission is authorized under the act to create and enforce reliability standards for the bulk-power system, including grid reliability and resiliency during emergencies.[175]

Retail electricity rates are established at the state level, but the commission regulates the wholesale markets and transmission systems that structure the flow and pricing of bulk electricity across regions serving those states.[176]

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[165] Kan. Stat. Ann. § 74-50,332 (2025).
[166] H.B. 895, 68th Leg., 2d Reg. Sess. (Idaho 2026).
[167] Kim Miller, *How States Are Regulating Data Center Water Consumption*, MultiState Policy Watch: Data Centers (Feb. 26, 2026), https://mailchi.mp/multistate.us/data-centers-vol-6.
[168] H.B. 76, 2026 Gen. Sess. (Utah 2026); H.B. 496, 2026 Gen. Assemb., Reg. Sess. (Va. 2026).
[169] Exec. Order No. 14,318, 90 Fed. Reg. 35,385 (July 28, 2025).
[170] *Id.*
[171] Proclamation No. 11,014, 91 Fed. Reg. 11,439 (Mar. 9, 2026).
[172] *Id.*
[173] The Federal Power Act, 16 U.S.C. §§ 791 to 828c, inclusive (2026).
[174] *Id.*
[175] *Id.*
[176] Francisco "A.J." Camacho, *'The absolute edge of precedent': Feds prepare to take on data centers*, Politico (April 20, 2026), https://www.politico.com/news/2026/04/20/ferc-ai-data-centers-00880162.

The commission also determines whether costs related to regional transmission infrastructure are allocated to large-load electricity customers, like hyperscale data centers, or ultimately passed on to other ratepayers.[177]

Data Centers Controlled by Federal Agencies or Located on Federal or Tribal Lands

Although most data centers fall under local and state jurisdiction, some data centers are subject to federal law and regulation. Federal agencies that operate or own data centers are governed by the Federal Data Center Enhancement Act, which establishes consolidation, efficiency, reporting, and security standards.[178] The act will expire on September 30, 2026, and some have expressed concern that federal agencies will no longer adhere to the previous data center standards.[179] Then again, others have pointed out that giving federal agencies more freedom over data centers aligns with President Trump's goals of reduced regulation and rapid development of data centers at the federal level.[180]

Those goals are also reflected in the Trump administration's efforts to develop data centers on federal land. The U.S. Army recently announced the conditional selection of two private-sector companies to develop hyperscale data centers on underutilized military land.[181] The Secretary of the Army claims that locating data centers on military bases offers force-multiplying effects, bolstered national security, and other strategic benefits.[182] Another way the Trump administration is encouraging data center development is through offering funding and other support to Indian tribes that enter into leases and partnerships with developers of data centers on tribal land.[183] Proponents suggest that data center development results in economic diversification and growth.[184] Nonetheless, many tribe members have raised concerns about tribal sovereignty and environmental impacts.[185]

Environmental Review

Some data center projects are subject to federal environmental review under the National Environmental Policy Act, which requires the assessment of environmental effects of certain proposed federal actions.[186] The National Environmental Policy Act applies to actions involving data centers if there is a nexus to federal funding, infrastructure, or land."[187] If this law is triggered, the government may require preparation of an environmental

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[177] *Id.*

[178] Federal Data Center Enhancement Act of 2023, Pub. L. No. 118-31, div. E, tit. LIII §§ 5301 and 5302, 137 Stat. 136. (January 1, 2026).

[179] Dan Robinson, *Feds snooze as US datacenter law set to lapse with no replacement in site*, The Register (June 15, 2026), https://www.theregister.com/public-sector/2026/06/15/feds-snooze-as-us-datacenter-law-set-to-lapse-with-no-replacement-in-site/5255679.

[180] Efosa Udinmwen, *A key US data center law covering security and sustainability is set to lapse worryingly soon, with no sign of a replacement*, Tech Radar (June 19, 2026), https://www.techradar.com/pro/security/a-key-us-data-center-law-covering-security-and-sustainability-is-set-to-lapse-worryingly-soon-with-no-sign-of-a-replacement.

[181] U.S. Army Communications and Outreach Office, *Army reaches conditional agreement with private industry for hyperscaled data centers*, U.S. Army (March 26, 2026), https://www.army.mil/article/291360/army_reaches_conditional_agreement_with_private_industry_for_hyperscaled_data_centers.

[182] *Id.*

[183] Hanna Merzbach, *Feds are encouraging tribes to partner with data centers*, Wyoming Public Radio (February 13, 2026), https://www.kunc.org/2026-02-13/feds-are-encouraging-tribes-to-partner-with-data-centers.

[184] *Id.*

[185] *Id.*

[186] The National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321 to 4370m-12, inclusive (January 1, 2026).

[187] Mayo, *supra* note 3, at 4.

assessment to determine whether the action causes environmental effects.[188] If the action could "significantly affect the quality of the human environment," then a more rigorous environment impact statement is required.[189]

The National Environmental Policy Act requires the evaluation and public disclosure of an action's probable environmental consequences but does not mandate pollution standards because it is merely procedural.[190] Rather, the Clean Air Act is the substantive federal law regulating air pollution.[191] In the context of data centers, the Clean Air Act primarily applies to behind-the-meter systems like backup diesel generators, which are subject to regulation as stationary pollution sources.[192] Applicable permitting requirements and other rules promulgated under the Clean Air Act may soon change, though, as a result of the Trump administration's expedited permitting directive.

Conclusion

Data center development is expanding rapidly, as are demands for the electricity and water necessary to support these facilities. In contrast, legislative and regulatory responses at the local, state, and federal levels typically progress at an incremental pace, resulting in patchwork laws and regulation gaps across all levels of government and throughout jurisdictions nationwide. As community members, developers, and lawmakers continue to debate and work toward informed decision making, there appears to be a recognition that the best possible outcomes can be achieved only if there is an insistence on transparency regarding the impacts of data centers.

The Legislative Research Council provides nonpartisan legislative services to the South Dakota Legislature, including research, legal, fiscal, and information technology services. This issue memorandum is intended to provide background information on the subject. For more information, please contact Rachel Hale, Legislative Attorney.

[188] *National Environmental Policy Act Review Process*, United States Environmental Protection Agency (June 3, 2026), https://www.epa.gov/nepa/national-environmental-policy-act-review-process.
[189] *Id.*
[190] Mayo, *supra* note 3, at 4.
[191] The Clean Air Act, 42 U.S.C. §§ 7401 to 7671q, inclusive (January 1, 2026).
[192] Mayo, *supra* note 3, at 2.