DANE COUNTY
BOARD of SUPERVISORS

REPORT

An Overview of Hyperscale Data Centers in Wisconsin

John G. Hansen • Nov. 16, 2025

REPORT PREPARED FOR
THE DANE COUNTY BOARD OF SUPERVISORS

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ABSTRACT

Economists and policymakers agree that as worldwide demand for AI increases, more hyperscale data centers will be proposed for development in Wisconsin. These projects are promoted as a potentially lucrative economic opportunity for local governments while demanding an unprecedented amount of natural resources. This paper examines the unique environmental, economic, and social effects that new hyperscale data centers could have on Dane County and other Wisconsin communities. Other factors that are common with generic large-scale construction projects will not be considered. Each of these subjects is treated with nuance and examined in an objective fashion. Since hyperscale data centers are evolving quickly in terms of efficiency, operation methods, and technologies, this paper is unable to make definitive, numeric conclusions because a significant amount of data regarding data centers is either not publicly available or simply unknown. Consequently, this report provides an overview of the subject matter and can guide future research for interest groups with more time and resources. Wisconsin communities need protection from the potential adverse effects of ill-advised contracts between data centers and local governments. Through a combination of access to transparent information, legal restrictions, community benefit agreements, and resident involvement, communities can make more informed decisions about whether development of a hyperscale data center is right for them.

INTRODUCTION

The artificial intelligence revolution is drastically changing today's world. Our healthcare industry uses AI models to predict and detect diseases while automating crucial research in pharmaceutical development and patient care. Businesses use AI to optimize supply chains and marketing strategies. Methods of transportation, both public and private, rely on AI to increase fuel efficiency, avoid deadly accidents, or even drive independently. AI has fundamentally changed the way students of all ages learn, as this tool is used to personalize lessons and lighten the burden on overworked teachers. While there are ongoing ethical and moral discussions about the role of AI in each of these industries, it is certain that in all these industries demand for AI will grow exponentially in the coming decades.

While it may seem as if the business sector has already embraced artificial intelligence, studies on the issue have suggested that we are only experiencing the early stages of AI integration. In 2025, an estimated 88% of global business organizations use AI in at least one business function. Of those organizations, 62% report that they are only in the "experimenting" or "piloting" phase of AI deployment and integration.[1] From a macroeconomic perspective, while investment in AI research and development only accounted for 4% of the United States gross domestic product in the first half of 2025, it represented an estimated 92% of GDP growth over that period.[2] The market indicates that demand for AI is expected to explode in the coming years, and massive tech companies such as Google, Microsoft, Meta, and Nvidia are all racing to capture a share in this growing market. These corporations understand that to capitalize on these trends and meet growing demand, they need

to invest billions in the infrastructure necessary to train new AI models and store the data they collect.

To maximize computing potential and embrace economies of scale, tech companies are investing in hyperscale data centers. Unlike other large-scale businesses, data center developers have geographic flexibility as the data housed on these campuses can be accessed anywhere throughout the world via the internet. This allows developers to choose their location based on electricity and water supply, existing infrastructure, land cost, and tax incentives rather than distributional efficiency or labor supply. A combination of these factors has made upper-midwestern states such as Wisconsin attractive locations for new hyperscale data centers. As data center contracting companies approach Wisconsin's local governments with promises of economic growth, community investment, new high-paying jobs, and a larger tax base, local elected officials are called upon to weigh potential economic benefit with high levels of resource investment and community-wide externalities. Hyperscale data centers are a new and rapidly changing type of development, so there is relatively little long-term data on this subject. Interest groups on both sides of the issue are forced to rely on projections and forecasting when making statements about the future effects of these data centers. This report intends to provide an overview of the existing research on hyperscale data centers in Wisconsin and highlight commonly asked questions about their social, environmental, and economic impact. This is a multifaceted issue that needs to be treated with nuance, and this report can be used as an additional resource for those who want to know what a new hyperscale data center could mean for their community.

METHODOLOGY

To construct this report, I first connected with experts in energy policy, climate change, land development, and county planning to determine what aspects of hyperscale data centers require intensive research. As hyperscale data centers are very much a new idea, a widespread examination of news media and recent studies revealed how data centers are perceived in the eyes of the Wisconsin public and how previous failures in other local governments across the country can be avoided. This paper heavily references the current and future data center campuses in Mount Pleasant and Port Washington, Wisconsin, as they both have received a lot of community feedback, exist in areas with similar demographics to Dane County, and are in different stages of development. To eliminate any potential bias, care was taken to focus on objective fact within the nuance and fairly represent both sides of this contentious issue.

SUBJECTS

Overview

When users search the web, store media, send emails, or type up documents, they are likely using a data center. Since the 1940s, computers have required physical servers to process commands and store information.[1] Many large office buildings allocate space for small-scale data centers (or server rooms) that provide a controlled environment for housing and managing core IT infrastructure. While all internet functions require energy, those that use artificial intelligence consume significantly more energy than traditional internet usage. For example, a 2024 report by Goldman Sachs estimated that a single ChatGPT query uses 10 times the electricity

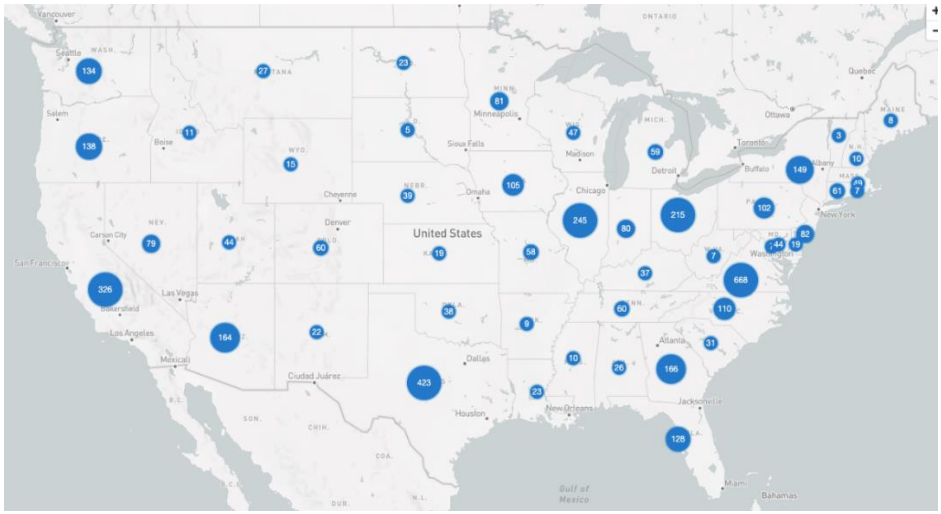
of a Google search–enough to power a lightbulb for 20 minutes.[2] As these high-energy functions have become more common, tech companies have found it to be most cost-efficient to build or rent large, external facilities that can process high levels of data computation and storage at the large scale required for AI production. These facilities are known as "hyperscale" data centers, as their land area and computing capacity far exceeds those of traditional data centers. Over the past decade, the percentage of U.S. data centers that are considered "hyperscale" has increased significantly as more companies are choosing to maximize future IT potential with large infrastructure investments.[3] For a data center to be classified as "hyperscale" by the International Data Corporation (IDC), it must utilize at least 5,000 servers and 10,000 square feet of floor space.[1] For reference, 10,000 square feet is roughly the area of two NBA basketball courts combined. Notably, the State of Wisconsin does not have a formal definition of a "hyperscale data center." However, the state's tax code does classify data centers by the amount of investment money spent over a five-year period.[4]

Most hyperscale data centers house hallways of tightly packed graphics processing units (GPUs). These car-sized computers utilize large volumes of electricity to process and store an incredible amount of information.[1] While GPUs are used, the heat-generating components mounted on electrical circuit boards combine to produce temperatures that can reach 170-190 F. To prevent server damage, data centers use air- or water-based cooling systems to alleviate heat and reduce temperatures to a more typical 100-140*F.[5] The cooling process uses roughly 33% of the average data center's total electric input. However, in warmer climates this percentage can reach 50% as using warmer outside air is less

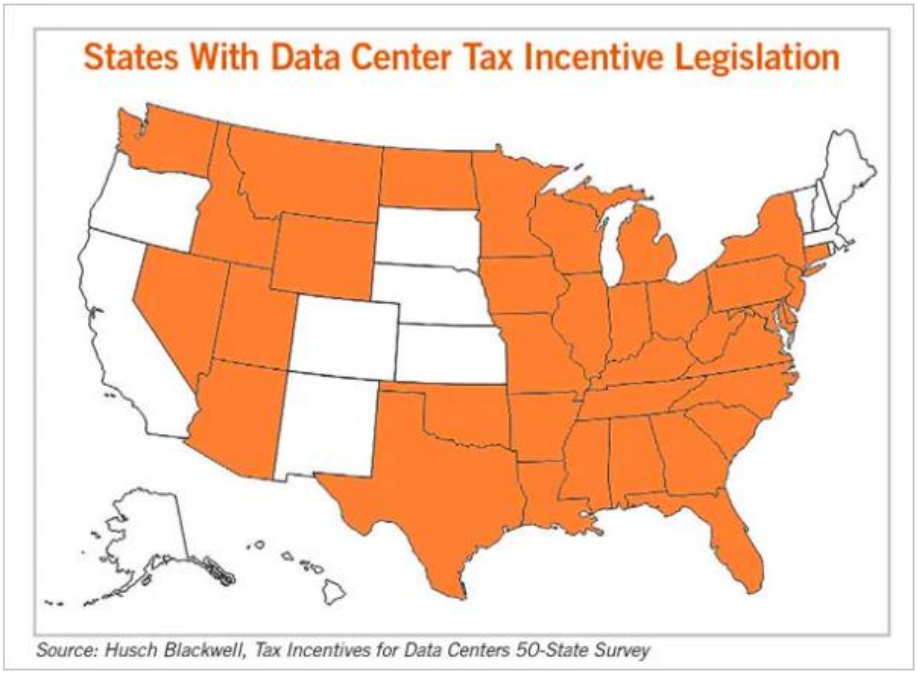
efficient.[12] While the technology and layout of each hyperscale data center may appear to be congruent with any other, the unique primary function of each location determines the amount of energy it will use. Many data centers are used for low-energy cloud computing such as storing data, photos, documents, videos, and other media. Others that focus on high-energy, AI-based functions use vast amounts of data to train AI models to respond to prompts quickly and accurately. As a data center uses more electricity, this means its cooling system will also demand more electricity.

AI companies and data center contractors have the geographic flexibility to be selective about where they choose to make their expensive, long-term investments. There are a multitude of factors that they consider in this decision, one of the most important being state tax incentives. Thirty-six of the 50 states have some kind of legislation that authorizes tax incentives for new data centers.[4] When comparing a map of hyperscale data centers in the United States and a map of states with these tax incentives, it becomes clear that data center companies prefer to lower their operating costs by taking advantage of favorable tax codes. According to the Wisconsin Economic Development Corporation, Wisconsin's Data Center Sales and Use Tax Exemption "aims to attract more data centers to Wisconsin, along with the highly educated workforce, high wages, and significant capital investment these projects bring to communities." A data center company can "apply for the exemption based on a plan to invest at least $150 million over five years in a county with population greater than 100,000, $100 million in a county with population between 50,000 and 100,000, or $50 million in a county with population of 50,000 or less. The Wisconsin Economic Development Corporation (WEDC) administers the program and reviews applications to ensure they

meet the criteria for eligible costs and qualified investment of a single entity".[6] In summary, data center companies building in Wisconsin can avoid paying sales tax on equipment for their data center along with costs associated with building and operating the facility. Other midwestern states such as Minnesota, Ohio, and Michigan have implemented similar tax exemptions.[4]



"US Data Centers by State" Datacentermap.com, 2024



Source: Husch Blackwell, Tax Incentives for Data Centers 50-State Survey

In Wisconsin, there is a distinct lack of legislative boundaries on the construction and operation of hyperscale data centers. In contrast, Illinois' Biometric Information Privacy Act restricts the storage and use of biometric data such as fingerprints and retina scans.[7] Since data center contractors want to market their facility to as wide a range of clients as possible, many choose to build in Wisconsin where there are no such restrictions on how their data center is used.

Data center companies prioritize building their centers in areas where energy costs are relatively low. In northern states, such as Wisconsin, data center cooling systems can take advantage of the cold winter months by using ambient air to lower server temperatures. This practice can save electricity and water, therefore lowering the data center's operating costs. When researchers measure how efficiently energy is being used, they compare the total facility energy consumption with the energy delivered to the equipment using a ratio called Power Usage Effectiveness. In Norway, the "Green Mountain" data center has a desirable average PUE level of 1.2, far below the industry average of 1.5-1.8. They attribute this success to the natural wet and cold Scandinavian climate.[8] Another reason Wisconsin is often chosen as a location for hyperscale data centers is the access to plentiful water in the region surrounding the Great Lakes Basin. Data centers need an enormous amount of water for cooling their computers and generating electricity. Since Wisconsin is less likely than other states to experience drought conditions, these companies benefit from a reliable supply of fresh water at a relatively low cost from local water utilities.

In July of 2025, Wisconsin Governor Tony Evers signed 2025 Wisconsin Act 16 into law, which grants an exception to the state's 12% limit on the total amount of municipal property value that can be included in tax incremental financing (TIF) districts. This exception only applies to certified data centers and will be utilized in the cities of Port Washington and Beaver Dam, both of which are building data centers that are expected to exceed $1 billion in costs.[9] The intent of a TIF district is to subsidize large construction projects by making property taxes more affordable for contractors during the building phase. For example, if a company is building on a property worth $200,000 and raising its value to $4,000,000, the value of that property is going to increase steadily over years of construction. Normally, the owner would have to pay increased property taxes over this period in tandem with the rise in property value. In a TIF district, instead of paying these higher rates during the construction phase, that money is used to fund the project itself. The local government would still collect a "frozen" property tax rate based on what the land was valued at before construction. When the TIF district expires, the owners would go from paying taxes based on a $200,000 parcel of land to those based on the full value of $4,000,000. Historically, this tool has been used for projects that benefit all people in a local government, such as revitalizing a downtown area or "brownfield" land; however, Wisconsin cities recently have used this method by annexing a data center's construction site into part of the city and creating a Tax Incremental District (TID).[10] While a TID is not always used in Wisconsin for data center construction, there have been instances in which a company has cancelled plans for a proposed data center when a city council fails to create a TID district for them.[11] This is

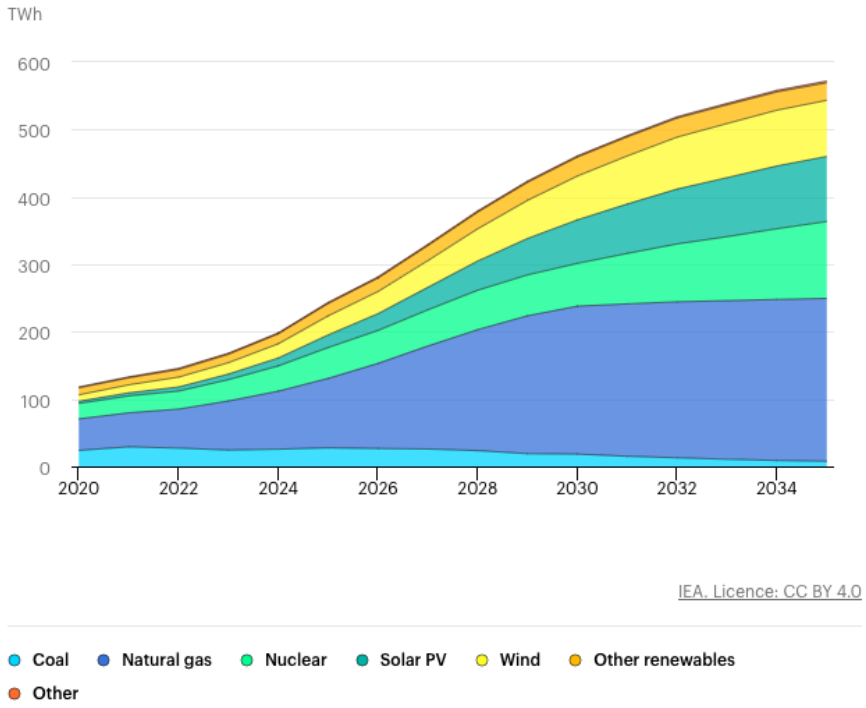
another example of data centers leveraging their geographic flexibility to lower costs associated with construction and operation.

Electricity Usage

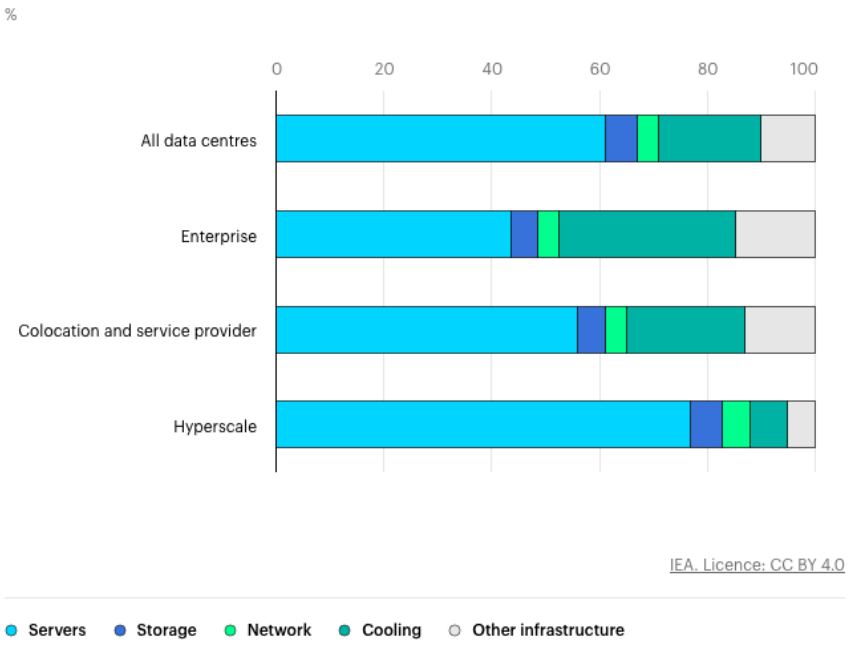
In 2024, the United States of America used the highest amount of energy ever recorded.[1] This upward growth has been attributed to new data centers, which represented 1.9% of total U.S. electricity consumption in 2018 and increased to 4.4% in 2022. The Lawrence Berkeley National Laboratory has projected this percentage to fall within the range of 6.7-12% in 2028.[2] While data centers increase their demand for power over time, the electric infrastructure necessary to meet this new demand is not likely to keep pace. For example, the Trump Administration's "One Big Beautiful Bill Act" canceled tax credits for renewable energy investment, drastically lowering the projected future supply of renewable, sustainable electricity.[3] As a result, energy prices in Wisconsin are estimated to increase by 8% statewide by 2030 as supply fails to meet growing demand.[7] Without substantial investment in new electric plants, substations, and power lines; experts fear that the cost of supplying electricity to new data centers will fall on Wisconsin households.

A typical, AI-focused hyperscale data center consumes roughly as much annual electricity as 100,000 households.[4] Seventy-five percent (75%) of total electricity consumption is used to power the internal servers, while cooling systems can use as little as 7% of total electricity in efficient, modern hyperscale data centers. This demonstrates one of the benefits to large-scale data centers, as traditional data centers typically use between 30-50% of their valuable electricity on cooling systems alone.[5] In the U.S., this electricity is sourced from a combination of coal, natural gas, nuclear, solar, and various other renewable energy generation

methods. In 2024, natural gas power plants supplied over 40% of U.S. data center electricity. This percentage is expected to increase in the coming years as the country decommissions coal-based power plants and renewable energy investment slows. [6] Wisconsin's energy profile is expected to reflect nationwide trends as natural gas and coal-fired power plants generated 72% of our in-state electricity in 2024. [8] Among other things, this means Wisconsin's climate goal of "100% carbon-free electricity" will be harder to achieve as natural gas power plants produce more carbon emissions as electricity demand grows.



"Electricity generation for data centers by fuel in the United States, Base Case, 2020-2035" International Energy Agency, 2025



"Share of electricity consumption by data center and equipment type, 2024" International Energy Agency 2025

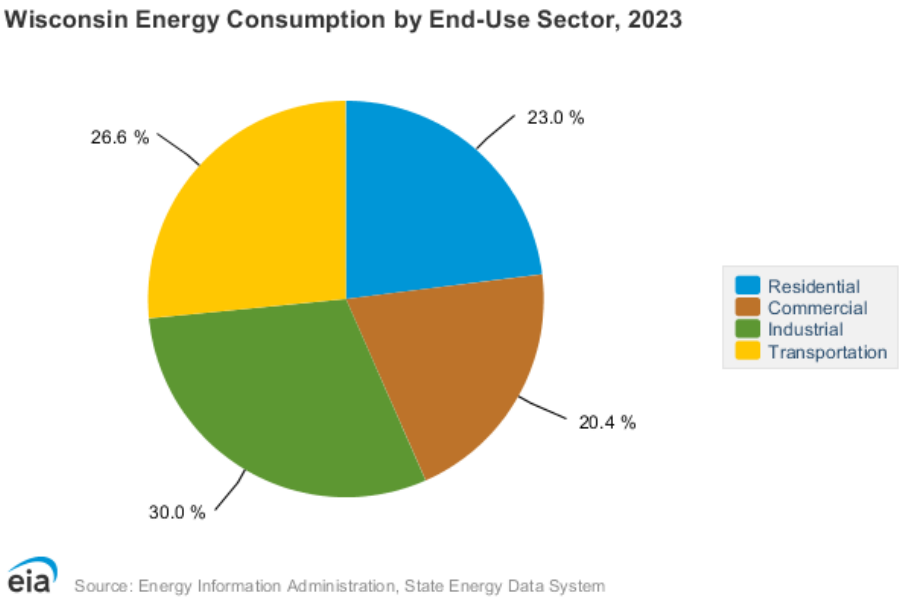
Wisconsin needs to upgrade its energy infrastructure to accommodate the trillions of dollars' worth of data center projects proposed in the state. In May 2025, the Wisconsin Public Service Commission approved plans for more than $2 billion in natural gas infrastructure, including new plants in Oak Creek and Kenosha County.[9] Many residents have expressed their concern that the burden of these costs will fall upon private residents through increased utility rates or the use of state tax dollars.

In response to growing concern on this issue, WE Energies has proposed a special rate structure that places the cost of supplying electricity, such as new infrastructure and resources, on customers that demand the energy to power more than about 300,000 homes annually. In a presentation to the Port Washington Common

Council, WE Energies demonstrated how they intend to provide the substantial amount of electricity necessary to power the approved Vantage Port Washington Data Center Campus. Their Very Large Customer (VLC) Tariff will require Vantage to cover the complete cost of specific generation resources constructed for the purpose of supplying electricity to their data center. [11] Even if these generation resources are terminated early, Vantage will still have to pay their full agreed upon cost. These contractual obligations are crucial to ensuring the cost of supplying new data centers with electricity will not fall on Port Washington households. [10] Researchers estimate that new electricity demand associated with data centers and cryptocurrency mining could lead to an 8% increase in the average U.S. electricity bill by 2030. [7]

When presenting the projected total electricity usage for a data center to the public, it is important to provide context for how electricity is measured and distributed throughout Wisconsin. Transparency regarding electricity use is important but using speculative information that may have little real-world application can mislead the public. It is crucial to understand how new electricity demand fits within existing systems and practices. Generally, news outlets and interest groups use phrases like "as much power as XX households annually" or "X% of the state's annual electricity use" to contextualize large amounts of electricity. It is fundamentally misleading to use the framework of residential electricity consumption to measure a hyperscale data center's electricity consumption. Wisconsin's 2023 energy profile reports that the residential sector consumed 23% of total electric consumption compared to 20% in the commercial sector, 26.6% in the transportation sector, and 30% in the industrial sector. [8] Using the electric usage of Wisconsin household units as a comparison to

industrial data centers is like comparing individual grains of sand to pebbles and rocks. The main purpose of a data center is to consume electricity while most homeowners try to minimize electricity use whenever possible.



There is relatively little publicly available data on actual electricity use by hyperscale data centers for two central reasons. Data center companies often utilize Nondisclosure Agreements (NDAs) with local government bodies and stakeholders to mask the true amount of current and future electricity they will consume. The other reason is that data center contractors cannot estimate future electricity consumption without knowing the future objective assigned to that data center. Most hyperscale data centers are built with the intention of completing AI-focused objectives rather than cloud computing. While AI does require more electricity than cloud computation, it also consumes electricity at different rates. Demand for AI is extremely inconsistent and requires high levels of electricity in "lumps." For example, ChatGPT is used significantly more during the school and work week than on weekends.[12] These

inconsistencies lead to unpredictable waves of electricity demand that put pressure on the existing grid and make it difficult to project long-term statistics. This nuance is often ignored by those making water and electricity consumption estimates, as it is impossible to measure these waves before they happen.

In September 2025, the organization Clean Wisconsin published a widely circulated report titled "AI data centers in Wisconsin will use more energy than all homes in the state combined." The study makes the case that the proposed data centers in Mount Pleasant and Port Washington will require 3.9 gigawatts of electric power upon completion, enough to power 4.3 million Wisconsin homes. In comparison, the latest 2020 census estimated that there are 2.8 million household units statewide. [13] While the report is theoretically sound, it is important to consider the assumptions being made when an organization projects future data center resource consumption. The first potential issue with these calculations is that both data centers will not be completed until four to six years from now, allowing time for Wisconsin utilities to upgrade their electric network to meet future demand. Using the context of the current electric supply does make it seem as if new data centers cannot possibly be accommodated for. Secondly, since new data centers are on the cutting edge of electric efficiency, there is little reliable data for the true amount of electricity a typical data center will consume in 2030. This forces researchers to assume a 100% load factor at the data centers. This means "data centers are operating 24 hours a day, 365 days a year with constant power demand." [14] While they acknowledge that actual utilization may be lower than this, this assumption is not congruent with actual studies on hyperscale data centers. There are several examples of this perception being presented to utilities and the public when

planning for utility planning, investment, and regulatory divisions. In fact, servers in U.S. hyperscale data centers are predicted to be operational only 50% of the time[14], likely making these types of general estimates higher than reality. People who are not well-versed in electric utility policy are often unfamiliar with terms such as “load factor,” “utilization rate,” and “server uptime.” This makes clear communication regarding future data center electricity usage a challenge, as there are no long-term studies on the methods used by new data centers today, and any assumptions made reveal potential bias within the statistic.

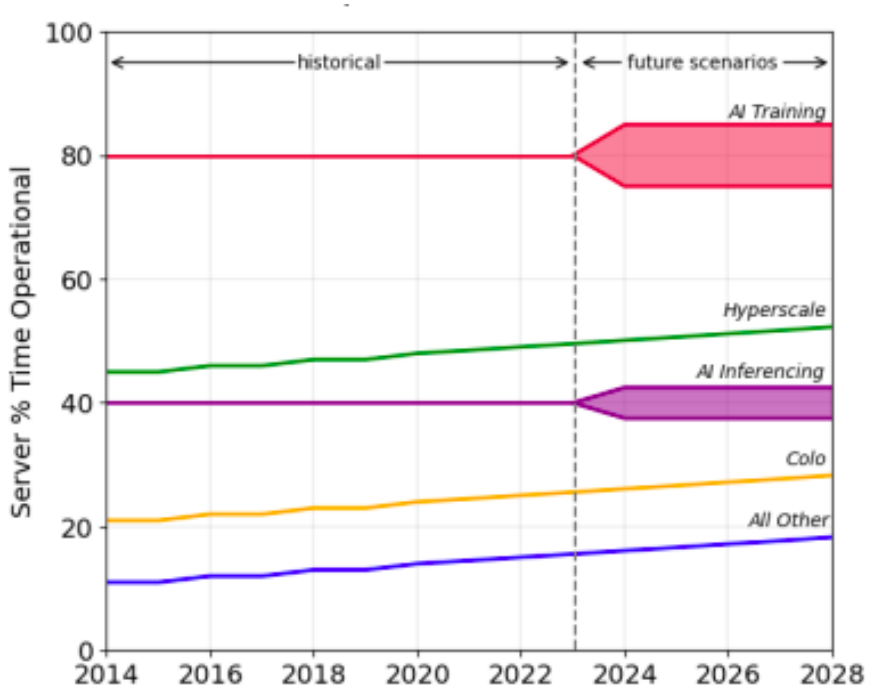


Figure 3.6. Operational time of servers given data center type.

“2024 United States Data Center Energy Usage Report” Berkeley Lab Energy Analysis Division, 2024

Water Consumption

Hyperscale data centers consume water through direct and indirect use. Direct water consumption refers to all the water used on the campus itself, such as the water used for the server's cooling systems, tap water for employee facilities, irrigation and landscaping, and other internal uses. Indirect water use refers to the water consumed by electricity plants while providing power for the data center. NPR indicates 92.5% of data center water use in 2023 was from electricity generation rather than cooling systems. [1] The typical thermoelectric power plant, such as a local natural gas plant, consumes water by boiling it to produce steam that passes through a turbine and generates electricity. This process represents 70% of water withdrawals in Wisconsin. [2] Water and electricity consumption in Wisconsin data centers cannot be treated as separate issues when consuming one resource necessitates the consumption of the other.

In 2022, researchers found that only 16% of data centers publicly disclosed information about their plans to manage water-related risks. That same report applauded Microsoft for using smart water management software that utilizes ambient air cooling when outside temperatures fall below 85° F. While hyperscale data centers are known for using water more efficiently than traditional data centers, most existing data centers consume between 1 and 5 million gallons of water per day. [3]

Modern water-cooling systems in hyperscale data centers use either an "open loop" or "closed loop" method for server heat reduction. Until recently, most water-cooled data centers used an "open loop" system in which water is evaporated to remove heat from equipment. This method uses a relatively low amount of electricity

while consuming consistently high amounts of water, which is released into the atmosphere as steam.[4] Recently, Microsoft and other tech companies have been moving toward "zero-water cooling systems" through a "closed loop" cooling process. Closed-loop technology refers to the fact that once the system is filled during construction, the water recirculates coolant throughout the data center in a continuous cycle, decreasing server temperatures while losing almost no water to the atmosphere. While this system saves "more than 125 million liters per data center annually," closed loop systems require a greater amount of electricity to circulate the coolant while reducing its temperature after each cycle.[5] As the closed loop system decreases direct water consumption, it increases indirect water consumption (through electricity use) to compensate. This is yet another reason why estimating the total amount of water a data center will consume is so difficult for outside parties to assess. To calculate the indirect water consumption, a researcher would have to know how much electricity the data center is going to use over long periods of time. Since closed-loop systems are a relatively new technology, this data is not yet available. While the consensus among water advocacy groups and data center companies is that closed-loop systems do lower the total amount of water consumed, more research must be done to understand the long-term benefits of the systems.

If a hyperscale data center can source its electricity from renewable sources that do not require water-based generation such as solar and wind while utilizing an efficient closed-loop cooling system, they can effectively lower their water consumption to that of a golf course. This is the Vantage Port Washington Data Center's long-term plan. Vantage will pay for 16 new clean energy projects for the main purpose of supplying electricity to their hyperscale data

center. Seventy percent (70%) of this new energy will go toward their project while the other 30% will supply clean energy to Wisconsin households. When this clean energy infrastructure has been built and the data center has achieved its goal of using 100% renewable energy, the largest data center in the country will use an estimated maximum of 22,000 gallons of water on a peak usage day. This is a fraction of the City of Port Washington's total water usage of about 1,270,000 gallons per day.[6] In comparison, Microsoft's proposed Mount Pleasant data center campus expects to use a peak of 350,000 gallons of water per day during the months of May through September.[5] This does not include indirect water usage, and since they plan on using natural gas infrastructure for some of their electricity, we can expect the true amount of water consumption to be significantly higher.

Like electricity, water consumption rates are going to be different for each hyperscale data center depending on how often the servers are running at full capacity, the efficiency of the local electricity sources, and the outside climate. To fully understand how much water a proposed data center is likely to use, each of these variables must be considered.

Land Use

In Wisconsin, most hyperscale data centers are built on former farmland purchased at above-market prices from private residents. During this process, land sellers are usually asked to sign NDAs to keep project details out of the public eye. Data center advocates argue the NDAs are vital to ensure that their competitors are not able to access information about their projects before they are announced, but opponents view this as another barrier to transparency within the data center industry.[1]

The Microsoft Mount Pleasant Data Center Campus is an excellent example of how new data centers can revitalize failed commercial properties instead of destroying farmland. In 2017, tech company Foxconn announced plans for a $10 billion plant to make TV screens in the town of Mount Pleasant. Over time, this development failed to meet expectations and cost the village an estimated $193 million to pay down debt for the project between 2019 and 2022. In 2024, Microsoft decided to purchase this developed land and revealed plans for a $3.3 billion, 315-acre hyperscale data center campus. Since then, the first of two data centers has been completed and residents have not experienced a rise in electricity bills while Microsoft has paid millions in property tax to the Village of Mount Pleasant. The Foxconn project was viewed as a significant failure for all parties involved, and building a hyperscale data center on the "brownfield" land was an ideal solution for both Microsoft and the village. In a similar manner, there has been a proposal to redevelop the former General Motors plan in Janesville into an $8 billion hyperscale data center. [2]

Economic Impact

To build and operate a hyperscale data center, thousands of people from a variety of professional backgrounds are needed. Many of the proposed data centers in Wisconsin require 3-7 years of construction as the project progresses through its "phases." This creates new jobs for carpenters, plumbers, welders, HVAC technicians, concrete workers, electricians, and other professionals. When the data center is complete, there are still long-term positions within the campus that will be filled by skilled professionals. These jobs include technicians for technology and mechanical systems, operations managers, systems engineers, security guards,

sustainability experts, and even grounds crew for the surrounding area. Data center contractors are often very open with their estimates as to how many "jobs" their proposal will create as opposed to the amount of resources they expect to use. Estimates for Wisconsin hyperscale data centers often range between 1,000-3,000 jobs during the construction phase and 100-400 permanent positions during full-scale operations. [1] While opponents often discount the construction jobs as "temporary," construction labor unions attest that this is the nature of the industry and are grateful to have the opportunity to earn high wages and build experience.

While this may be true, the secondary positive economic effects caused by these jobs will end after the project is completed, and opponents question why communities should subsidize new jobs without lasting benefits. These new jobs are meant to justify the tax breaks and exceptions provided by the government, but there are several examples where this is not the case.

In Mount Pleasant, Wisconsin, Microsoft is nearing the completion of the first of two hyperscale data centers that will equal $7 billion in total investment. During peak construction, Microsoft employed over 3,000 construction workers and expects to provide 800 full-time jobs once both data centers are complete. These data centers will use a closed-loop liquid cooling system that has a comparable annual water consumption rate to that of a restaurant. Microsoft has paid for the installation of new energy and electrical infrastructure necessary for the campus and assured residents that their electric bills will not increase. The company has even pledged to match the fossil fuel energy they use with carbon-free alternatives. Beyond the technical details of the data center's carbon footprint, Microsoft has committed to Community Benefit

Agreements that show the people of Mount Pleasant that they are committed to "being a good neighbor." They are partnering with the local Gateway Technical College to launch a "Datacenter Academy," training over a thousand students for "high-demand datacenter roles." Microsoft has also invested money into 20 local ecological restoration projects, restoring prairie and wetland habitats throughout the area.[2] While many of these ideas are still "promises," this shows how data centers are attempting to provide benefits for the community that allows them to develop and reside there and keep their promises regarding construction job creation.

There are plenty of other examples where data center companies do not provide enough new jobs to justify the tax breaks provided by the government. Companies such as Amazon, Google, Meta, and QTS have all invested heavily in data center infrastructure within central Ohio. These developments are largely supported by highly favorable tax exemptions offered by the state government to revitalize an area that used to rely on manufacturing and warehouses. While these incentives did succeed in attracting data center investment into the state, researchers have found that even the largest data centers usually employ fewer than 150 permanent workers, and some have as little as 25 permanent workers. When considering the amount of money the state has paid in data center tax breaks, analysts have found that each permanent, full-time job at an operational data center costs the government over $2 million. This is significantly higher than other economic development incentives, which have been found to average about $262,000 per permanent job.[3] Job creation needs to be contextualized by the amount of tax relief the government is giving to the data center. Without contractual obligations and accountability, local

governments run the risk of receiving very little for their large investments.

A new hyperscale data center can also have lasting beneficial secondary economic effects on a local government. Even if a TIF district is used to subsidize the construction of a new data center, eventually that high-value property will become the area's highest real estate property taxpayer. This tax revenue can be used to improve local schools, infrastructure, fire departments, and more. Communities could use the new financial flexibility provided by the data center to lower the property taxes on existing households. [1] In many agreements between data center contractors and local governments, the data center company agrees to pay for sewer and water utilities to be extended to the data center campus. This new infrastructure can be used for home and commercial development in new areas, providing opportunities for more jobs and increasing the local housing supply. When a hyperscale data center attracts new workers to its area, these people often spend their wages at local shops and restaurants, further stimulating economic growth in the town. [4]

Resident Action and Discussion

As Wisconsin's communities continue to make billion-dollar deals with data center companies, their residents are beginning to organize and call upon local leaders to reconsider their decisions regarding new projects. A Marquette Law School poll conducted this year found that 55% of Wisconsin voters believe that the costs of large data centers are greater than the benefits they provide. In the Madison media market specifically, that number increases to 63%.[1] The results also note that this ratio is consistent across all political parties. Regardless of prior political affiliations, over half

of Wisconsin voters are deeply skeptical about new hyperscale data centers. This general uneasiness on the subject is heightened by local social media influencers that vocalize their positions against new data centers and encourage residents to organize and demonstrate in opposition.

In general, most citizen action movements cite strong concerns regarding a lack of transparency about water and electricity use as their main grievances. As this information is often protected under NDAs or simply unknown to all parties, this is a valid complaint. [2] Another issue Wisconsin communities are facing is the prospect of new high-voltage power lines running through their jurisdictions. For example, to accommodate for the massive energy needs of the Port Washington Data Center, the American Transmission Company is installing over 80 miles of power lines that threaten to ruin the "pristine rural character of Ozaukee County." Residents of nearby Fredonia, Grafton, and Saukville are unhappy with one of the proposed routes as it will run through their cities. [3] They feel as if newly installed high-voltage power lines could potentially decrease local property value and have adverse effects on nearby ecosystems.

New power lines are just one of several issues surrounding current resident pushback to the approved Vantage Data Center Campus in Port Washington. Several city council meetings have been forced to switch locations to accommodate the hundreds of anti-data center advocates. While these protesters are unable to stop construction on the Vantage Data Center Campus, other proposed data centers in Wisconsin and across America have been cancelled due to resident pressure alone. [4] In 2025, an estimated $98 billion in data center projects were blocked or delayed from late March through June

nationwide.[5] In Wisconsin, hyperscale data centers in Caledonia and Menomonie have been delayed in the early stages of their approval processes due to organized pushback from residents. This shows that without transparency and the approval of the people, Americans will contribute significant time and effort into blocking new data centers from being built.[4]

Other Environmental and Nuisance Concerns

As new data centers require greater amounts of electricity production, carbon emissions from creating this electricity increase significantly as well. This is another subject area where there is little long-term concrete evidence as to the true extent of new emissions associated with data centers.[1] To determine the number of emissions a specific hyperscale data center release into the atmosphere, we would have to know how much electricity it uses. As previously stated, this is a difficult task for both data center contractors and researchers, especially when a new data center is years away from operation. What is known is that most new carbon emissions from data centers originate from burning fossil fuels to supply electricity. To reduce emissions, data centers simply need to use less fossil fuel energy.

In case of an electrical outage, most hyperscale data centers have diesel-fired backup generators to keep the systems constantly online. Within Mount Pleasant's $3.3 billion data center campus, there are 40 of these generators, along with pollution controls and emergency fire pumps. Diesel generators are usually tested at least once a month by data center companies. This takes place during the day because the generators are loud enough to wake people up at night. While pollution controls can be put into place, these generators often contribute a significant amount of carbon

emissions during their monthly tests, especially on large campuses that use hundreds of them. In fact, the Minnesota Public Utilities Commission has even denied permits for the construction of these generators on data center campuses until the company can prove their necessity to the project.[2]

Additional Considerations

Loudoun County, Virginia, is known as the data center capital of the world. Locals report that hundreds of data centers in the area contribute to an audible, low frequency hum that can be heard at most times of the day. Long-term exposure to low-frequency noise has been studied extensively and can result in temporary and permanent threshold changes for hearing loss, mental distress, impaired focus and balance, headaches and dizziness, sleep disorders, stress, anxiety, and impacts on social relationships, some of which may be combined and lead to adverse reactions and health effects.[1] While most local governments do have decibel limits for commercial properties in residential areas, most of these ordinances do not consider constant, low-frequency noise.

POLICY RECOMMENDATIONS

- Data center companies must commit to covering all extra costs associated with providing electricity to their campus.
    - This is usually the most important issue to those living in the area. Data center companies have demonstrated an ability and a willingness to cover these costs. Without their funding, the price of supplying high levels of electricity to data center customers will inevitably result in greater electricity rates for residents.

- Data Centers must commit to long-term usage of renewable energy.
    - While it is not realistic to demand 100% renewable energy use for all Wisconsin hyperscale data centers at this time, the companies must make a commitment to building and utilizing renewable energy infrastructure in the future. Data center companies such as the two in Mount Pleasant often buy renewable energy credits to offset fossil fuel energy use, as it is often more efficient to build renewable energy infrastructure in other parts of the state. Wisconsin does not have the sun of the southwest, the wind of the Great Plains, or the river systems of the northwest.
- Community Benefit Agreements between data center companies and local governments must provide both short- and long-term benefits to local organizations.
    - When tech companies are willing to use over a billion dollars on a new hyperscale data center, it is reasonable for them to provide a fraction of that money to local organizations to benefit their future neighbors in the short term. Examples include funding new infrastructure, restoring wildlife areas, and promoting quality jobs beyond those on their data center campus. Since CBAs are legally binding, these agreements are a good opportunity to show skeptics that a data center can be beneficial for their community. It is well-circulated that in the past, some data centers have failed to meet the levels of

widespread economic progress promised during the proposal phase. CBAs are a demonstration of partnership and commitment from data center companies to being a good neighbor for years to come.

- Data center companies must be required to publicly release estimates regarding the amount of electricity and water their project is projected to use.
    - While the exact and full extent of water and electricity usage is almost impossible to know years before a data center completes its construction, data center companies should provide reasonable estimates regarding the number of resources they intend to use. Local elected officials should not be legally bound to silence under an NDA. Opponents of new data centers normally have a common refrain: "We don't know how much electricity or water this new data center will take from us." Increasing transparency in this way will alleviate some of these concerns and build trust between data center companies and everyday people.
- There must be an enforcement mechanism to ensure that data center companies provide the short- and long-term career opportunities they promise with their proposal.
    - This enforcement mechanism normally exists in the form of a CBA, a legally binding agreement that can determine both the quantity and quality of jobs created by the data center. To offset the tax exemptions provided by the state government, these jobs must be long-term, well-paid, and available for people of all backgrounds.

- Dane County's universities should partner with data center companies to provide courses and career pathways to prepare students to potentially work in the data center sector.
    - Two of Dane County's biggest institutional assets are the University of Wisconsin-Madison and Madison Area Technical College. Any new data center in the county should fund programs in partnership with these institutions to prepare students for the new era of AI and for possibly working in a high-quality job in the local data center. This process would promote the Wisconsin Idea by preparing Wisconsin students for jobs in Wisconsin industries. As AI is expected to eliminate a significant portion of jobs within the service industry in the coming decades, this partnership could provide Wisconsin students with more opportunities for future employment.
- Data Center companies must present their data center to the residents through an advertising campaign and public events over the course of its proposal and construction.
    - Hyperscale data centers are unpopular among Wisconsinites and even less popular online. The fact is that data center opponents will always be louder than data center proponents, and right now this phenomenon is sparking widespread negative feedback in communities where a data center could potentially be beneficial for future economic growth. In the case of the Port Washington Data Center, there is a real disconnect between the concerns of the

protestors and the information clearly listed on the Port Washington city website. Data center companies should commit funding to producing and distributing accurate, transparent, and accessible media to the public about what the hyperscale data center means for their community.

- Local Governments should not put a new hyperscale data center proposal up for a public vote.
    - It would be impossible for a community to be universally informed on the data center issue. Since a proposed data center will not yet have provided tangible benefits to a community, data center proponents will have no reason to match the enthusiasm that would likely be driven by data center opponents. Local elected officials need to take the responsibility for their government's economic future and weigh the costs and benefits themselves. Otherwise, Wisconsin could fall behind other states as AI becomes the main contributor to America's economic growth.

AREAS FOR FURTHER EXPLORATION

Hyperscale data centers have numerous and varied impacts on the locales in which they are developed. There are subject areas that are not covered by this paper but need to be addressed in future research and exploration.

- Some data centers give off a significant amount of light, which can have adverse effects on residents and wildlife.

- Any local government with a new data center needs to be well prepared for any sort of natural disaster that may strike a data center campus.
- Data centers often have on-site security as well as sophisticated camera systems. These measures could potentially violate the privacy of residents.
- What happens once a data center is decommissioned by its owners? One prevailing theory is that servers and cooling systems could be repurposed for cryptocurrency mining.

CONCLUSION

Local governments have a responsibility to protect their residents and natural resources by doing due diligence, gathering the facts, and, when feasible and desired by the community, implementing policies that provide residents tangible benefits from a new hyperscale data center beyond the promise of future economic growth. Data centers are projected to increase in number and decrease in popularity, and it is up to elected leaders to weigh the costs and benefits associated with these proposals and then communicate the reasoning behind these decisions to their constituency. Under effective leadership and good faith bargaining on both sides of the contract, hyperscale data centers have the potential to represent a crucial investment in the cutting-edge of technology and industry.

APPENDICES

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