

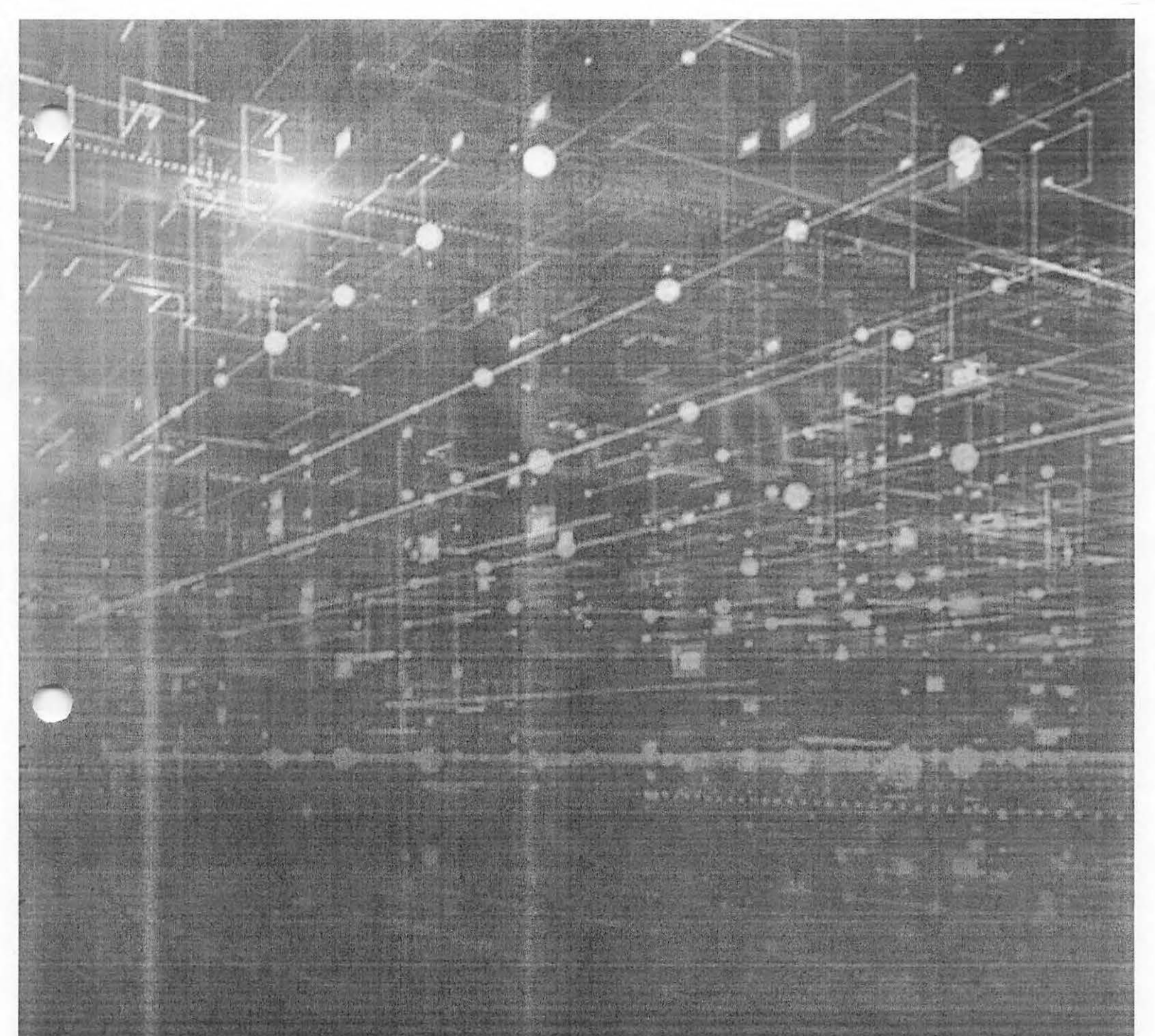
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We extend our heartfelt gratitude to the following reviewers for their time and expertise. Their review should not be considered an endorsement; rather, it ensures the value and relevance of this guide for local governments.

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ENVIRONMENT, GREAT LAKES, AND ENERGY



Bill Conklin <supervisorhayestownshipmi@gmail.com>

MTA data center presentation

2 messages

Roy Griffiths <rwgriffitts3@gmail.com>

Wed, Feb 18, 2026 at 7:41 PM

To: Hayes supervisor <supervisorhayestownshipmi@gmail.com>, Kristin Baranski <clerkhayestownshipmi@gmail.com>

Good evening Bill,

In addition to the information that Carey sent you, I am sending along the slide deck from the presentation today put on by the MTA on data centers. While the slides without the benefit of hearing the information are of limited use they may be helpful for tomorrow's conversation with Todd.

In particular slides 9,10 ,11 are relevant to the discussion.

I hope you find these helpful,

Roy

 **NYK-FEB-2026-Data-Centers-Presentation.pdf**
3746K

Bill Conklin <supervisorhayestownshipmi@gmail.com>

Wed, Feb 18, 2026 at 8:23 PM

To: Roy Griffiths <rwgriffitts3@gmail.com>

Thank you.

[Quoted text hidden]



Bill Conklin <supervisorhayestownshipmi@gmail.com>

Attached is an article "Data Center Power Play" by the Union of Concerned Scientist. The BOD, Planning Commission, and the group looking into Data Center should find interesting.

2 messages

Melvin Czechowski <[REDACTED]>

Fri, Mar 6, 2026 at 11:04 AM

To: Bill Conklin <supervisor@hayestownshipmi.gov>, Roy Griffiths <rwgriffits3@gmail.com>

Attached is an article "Data Center Power Play" by the Union of Concerned Scientist.

The BOD, Planning Commission, and the group looking into Data Center should find interesting.

Melvin H. Czechowski, Ph.D.

 **Data Center Power Play _ Union of Concerned Scientists.pdf**
458K

Bill Conklin <supervisorhayestownshipmi@gmail.com>

Fri, Mar 6, 2026 at 1:49 PM

To: Melvin Czechowski <[REDACTED]>

Thank you Mel --- it is thorough. Wondering how the news that Data Centers "must be self-sufficient" will actually be codified in States. At the Federal level that can be suggested, but we need to see that in a law, either Federal or State.

Bill

[REDACTED]
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[REDACTED]

[REDACTED]

[REDACTED]

REPORTS & MULTIMEDIA / REPORT

Data Center Power Play

How Clean Energy Can Meet Rising Electricity Demand While Delivering Climate and Health Benefits

Steve Clemmer, Maria Fernanda Chavez, Samuel Dotson,
James Gignac, Sandra Sattler, Lee Shaver

Published Jan 21, 2026

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Introduction

The US electricity sector is at an inflection point. After nearly two decades of flat demand, US electricity use is projected to surge over the next decade and beyond due primarily to the growth of data centers for artificial intelligence (AI). The emergence of large language models and other forms of generative AI has led to proposals for larger and larger “hyperscale” data centers, with some consuming more electricity than mid-sized cities (Marshall 2025). Over the longer term, greater electrification of transportation, buildings, and industry will drive up demand for electricity even further.

Until recently, data centers accounted for a small share of US electricity demand. Improved efficiency in energy use and computing power offset most of the past growth in demand. But the rise of AI has caused data center electricity use to more than double, from 1.9 percent of US electricity use in 2018 to 4.4 percent in 2023. By 2028, the proportion could increase to the range of 6.7 to 12 percent, according to a Lawrence Berkeley National Laboratory projection (Shehabi et al. 2024). Some projections are even higher (Pilz, Yusuf, and Lennart 2025; IEA 2025).

The number of data centers anticipated to be built in the United States and how much electricity they will need are both highly uncertain quantities. Recent actions by electric utilities indicate that many proposals to build data centers are redundant (Martucci 2025; Skidmore 2025). In addition, utilities, which earn a guaranteed return on investment, have an incentive to overestimate future demand. This could lead to overbuilding the electricity system, higher costs, and stranded assets (Carvallo et al. 2018; Sward et al. 2025). Also uncertain are efficiency improvements in AI training practices, data center hardware, software, and cooling technology, yet these all could significantly reduce demand or enable companies to increase data-processing capacity (Liebreich 2024; Lovins 2025).

A lack of transparency compounds the uncertainties, even for the utilities themselves. Proposals to build data centers, as with power plants to serve them, are typically confidential. Communities often lack information on energy use, water consumption, emissions, and other environmental impacts of proposed data centers (Wittenberg 2025; Hedgepeth and Isom 2025). Many communities already experience high levels of pollution from existing sources (NAACP 2025; Dulani and Zaidi 2025). And many local and state decisionmakers, seeking to attract multibillion-dollar investments, overlook these risks and sign confidentiality agreements with developers.

The stakes are high. How the nation and the states choose to power data centers and electrify the economy has important implications for energy affordability, grid reliability, climate change, and public health. A path that accelerates the clean energy transition can mitigate the harmful environmental and health impacts of data center development and operations while keeping overall costs affordable and limiting the worst impacts of climate change. But a path that increases reliance on

fossil fuels to power AI will expose customers to greater volatility in fuel prices, lead to higher emissions, and result in adverse environmental, climate, and public health impacts.

Options for Powering Data Centers

The surge in demand from data centers comes at a time when the power sector, as well as the broader economic and policy environment, is undergoing a significant transition, leading to complicated questions about how to meet new electricity demand. While many utilities are turning to traditional resources like methane gas, the cost of new gas power plants has increased significantly over the past five years, and gas turbine shortages are causing delays of up to seven years in building new plants (DiGangi 2025; Webb and Plautz 2025; Cohen, Fitch, and Shwisberg 2025; GridLab, Energy Futures Group, and Halcyon 2025). Increases in exports of liquified natural gas are projected to lead to higher, more volatile prices for gas and electricity (EIA 2025a; Penrod 2025).

Fears of electricity supply shortfalls have led to proposals for other regressive solutions—for example, delaying the retirements of coal plants—that could not only mean even higher costs and adverse public health impacts but also jeopardize state and corporate climate goals (see box) (Goggin 2025; Tosado, Massey, and Daniel 2025; Behr, Northy, and Reilly 2025). Building new nuclear plants utilizing small modular reactors or advanced reactor designs would rely on unproven technologies that have long lead times, high projected costs, and important safety and security risks (Liebreich 2024; Lyman 2024; Lyman 2021).

Alternatively, combining wind and solar with battery storage and greater data center flexibility offers a promising solution for powering data centers and meeting overall electricity demand.¹ Deployment of wind, solar, and storage has accelerated, with more than 45 gigawatts (GW) of capacity added in 2024 and another 60 GW projected through the end of 2025. This represents 93 percent of total additions to US electricity capacity in 2025 (EIA 2025b).

Costs for wind and solar have fallen 70 to 90 percent over the last 15 years, making them cheaper in many cases than new gas and existing coal plants even without subsidies and before factoring in environmental and health benefits (Wiser et al. 2024; Seel et al. 2024; Lazard 2025). The lead time to plan and build wind and solar projects is also much shorter than it is for new gas or nuclear plants. Co-locating these projects near existing generators that have excess capacity and approved interconnection to the grid could allow for faster approval, while also reducing emissions, maintaining reliability, and lowering costs (Engel, Varadarajan, and Posner 2025).

In striking contrast to this forward momentum is the Trump administration's stated preference for using dirty, outdated fossil fuel generation to power emerging technology. Clean energy resources face significant headwinds due to rollbacks of federal incentives, restrictive administration actions, and the slow expansion of transmission capacity (Walton 2025). Even as the Trump administration boasts of leading the global AI race, it is sidelining the clean, plentiful, affordable, and efficient energy technologies that are best poised to power such a future, rendering the United States more vulnerable to international fuel price volatility.

The Union of Concerned Scientist (UCS) has analyzed the economic, health, and climate impacts of different approaches to meeting near- and longer-term demand growth under varying policies and assumptions. The results of our modeling inform recommendations calling on policymakers and regulators to require that utilities and data center developers increase transparency and accountability and do better long-term planning for meeting data center demand—and, at time same time, protect other customers from cost increases and negative health impacts. Ensuring that clean energy powers data centers also requires stronger state and federal policies, while utilities and big tech companies must follow through on their sustainability commitments. With climate and clean energy policies under federal attack, states, utilities, and corporations must continue pressing ahead with the clean energy transition.

Box 1. Powering Data Centers with Clean Energy Aligns with State Laws and Corporate Goals

Renewable Portfolio Standards (RPS) and Clean Electricity Standards (CES), which together set requirements for utilities to procure clean electricity, have been successful, cost-effective state-level policies for driving the deployment of renewable resources (Barbose 2024). As of August 2024, 29 states and the District of Columbia had adopted RPSs and CESs. Sixteen states have both an RPS target of at least 50 percent of retail electricity sales and a broader 100 percent CES that reaches these targets between 2040 and 2050.

Paralleling moves toward clean energy in state policies, big tech companies like Google, Microsoft, Meta, and Amazon have committed to achieving 100 percent carbon-free electricity and net zero heat-trapping emissions across their operations and supply chains (Meta 2025; Amazon 2025; Brandt 2025; Smith and Nakagawa 2025). With those goals set for either 2030 or 2040, each of these companies has made major purchases of renewable energy and significantly reduced emissions from data centers. For example, Google entered into 170 agreements between 2010 and 2024 to purchase more than 22 GW of clean electricity, including procuring more than 8 GW in 2024 (Brandt 2025).

Unfortunately, progress has been mixed. Google's overall emissions have risen 51 percent compared with a 2019 baseline. Microsoft's overall carbon footprint has increased more than 23 percent since 2020. And Amazon's emissions rose 6 percent in 2024 after two years of declines (Johnson 2025; Stiffler 2025a; Stiffler 2025b).

Many utilities also have ambitious climate and clean energy goals. However, most utilities are failing to meet their commitments, according to a study of 75 of their long-term plans. Many are using load growth from data centers as a reason to delay retiring coal plants or to build new gas plants (Anderson 2025).

Methodology

UCS analyzed the impact of meeting projected growth in electricity demand from AI data centers. We modeled several policy and sensitivity scenarios using the National Renewable Energy Laboratory's (NREL)² Regional Energy Deployment System (ReEDS) electricity planning and dispatch model (Cole et al. 2024). The results of our modeling focus on changes over time in US electricity generation and capacity, carbon dioxide (CO₂) emissions, and electricity system costs. In addition, we calculated the public health benefits of reducing air pollution from fossil fuel generation.

Modeling Assumptions

UCS based the assumptions used in its analysis primarily on the NREL's 2024 Standard Scenarios version of the ReEDS model and Annual Technology Baseline 2024 mid-case cost and performance assumptions (NREL 2024; Gagnon et al. 2024), with these exceptions regarding electricity demand:

- We used electricity demand projections developed by Evolved Energy Research (EER) for its Annual Decarbonization Perspective 2024 report (Jones et al. 2024).
- Most of our scenarios used EER's reference load growth trajectory for data centers because this projection is in the middle of the range of most recent studies.
- We made adjustments to include more recent projections from S&P Global and announced data center projects in select states.
- To address the uncertainty in data center proposals, we assumed that half of the capacity from announced projects would actually be built and that it would take up to five years for projects to reach full capacity (MISO 2024a; S&P Global 2025).

The UCS projections for data center demand are consistent with those in a 2024 Lawrence Berkeley National Laboratory report informed by recent academic and industry studies (Figure 1) (Shehabi et al. 2024).

We project overall demand to increase 62 percent between 2025 and 2050 under the UCS Mid Demand Growth scenario and 79 percent under the UCS High

Demand Growth scenario. Data centers account for 46 to 59 percent of total demand growth by 2030 under these scenarios. However, this share falls as electrification increases in other sectors (especially transportation).³²³³ We made other assumption changes based on literature reviews and our analysis. For details, see the technical appendix.

Modeling Scenarios

UCS modeled three scenarios. One scenario represents current policies. Two scenarios represent stronger national climate and clean energy policies. Within each policy scenario, we modeled different levels of electricity demand attributable to data centers.

Current Policies scenario: This is a reference case scenario. It reflects recent changes in federal tax credits, as enacted by the One Big Beautiful Bill Act (OBBBA) on July 4, 2025. It excludes Environmental Protection Agency (EPA) power plant carbon standards; the EPA was in the process of repealing these when UCS conducted the modeling. It includes NREL's representation of state-level electricity sector policies adopted as of August 2024.

Restored Tax Credits scenario: This scenario includes the electricity sector tax credit provisions in the 2022 Inflation Reduction Act (IRA). As a point of comparison with the Current Policies scenario, it isolates the impacts of recent rollbacks in federal tax credits.

Low-Carbon Policy scenario: This scenario analyzes the impact of national policies to nearly decarbonize the power sector by 2050. It assumes the United States would reduce power-sector CO₂ emissions to 70 percent below 2026 levels by 2035, 80 percent by 2041, and 95 percent by 2050. This scenario includes policies that would:

- Restore federal tax credits for wind, solar, energy storage, and other low-carbon technologies after they expire under the OBBBA, using the IRA provisions as a proxy;

- Adopt federal power plant carbon standards in 2030, using as a stand-in EPA's rules finalized under the Biden Administration but delayed by five years; and
- Facilitate development of new transmission capacity needed to integrate higher levels of wind and solar, using NREL's assumptions for mid-case transmission availability.

We modeled each policy scenario under different levels of data center electricity demand, while assuming the same level of electricity demand in other sectors under all scenarios (Table 1):

- **Mid Demand Growth:** This scenario uses our core, mid-level assumption for data center demand growth.
- **No Demand Growth:** This counterfactual scenario enabled UCS to isolate the impacts of data centers.
- **High Demand Growth:** This is a sensitivity scenario. It assumes data center electricity demand to be near the higher end of the range of recent projections.

Model and Policy Limitations and Opportunities for Future Research

The UCS analysis did not include the impacts of several recent but highly uncertain changes in energy policy and technology. While we assumed that the Trump administration would delay offshore wind deployment and repeal EPA power plant carbon standards, we did not include the potential impact of other recent actions that could limit deployment of wind, solar, and storage.

We did not explicitly include the impacts of recent Trump administration actions to increase deployment of fossil fuels and nuclear power. We also did not include the increased costs and limited availability of gas turbines and potential increases in gas prices triggered by administration policies to increase liquefied natural gas exports; these could result in a lower contribution from gas than shown in our analysis. In addition, we did not include the impact of new tariffs on technology costs and energy prices, which vary by technology. Also, ongoing changes in tariff policies make it highly difficult to estimate the impacts.

We did not consider the potential for increased operational flexibility at data centers, which recent studies show could reduce peak loads, reduce the need for new generation, and lower overall costs (Norris et al. 2025; Knittel, Senga, and Wang 2025; Cox, Schwartz, and Stenclik 2025). Although data center flexibility solutions are not fully proven, pilot projects are underway. For example, Google is working with utilities in three states to increase demand flexibility during periods of high demand by shifting model training workloads and reducing data center power usage (Terrell 2025).

ReEDS can provide a solid understanding of the evolution of US electricity generation, storage, transmission, and production technologies, but more localized and temporally granular reliability analysis would be needed to identify the preferred mix for any specific location. ReEDS represents a broad range of technology types but not individual units, transmission lines, or detailed operating characteristics. Also, it only includes a sample of representative time periods within a year. It neither directly links storage nor assumes it to be co-located with renewable energy technologies. Nor does ReEDS consider long-duration energy storage.

While our electricity demand forecast includes modest increases in electrification in the transportation, buildings, and industrial sectors, further electrification would be needed to achieve economy-wide net zero emissions by 2050 (Clemmer et al. 2023; Jones et al. 2024). Because ReEDS is an electric power system model, we did not capture reductions in energy costs and emissions that would result from replacing fossil fuel use with clean electricity in other sectors.

Modeling yields an approximation of the least-cost generation mix needed to meet data center demand under a given policy scenario. Our results may not reflect actual decisions made by data center developers and utilities that the model does not consider cost-effective. Because ReEDS is a least-cost planning model, it does not capture proposals by large tech companies to pay above-market costs to restart existing nuclear plants, build new nuclear plants, or install other behind-the-meter generation to power data centers.

Modeling Results

The United States can meet the growth of electricity demand from data centers and modest electrification of other sectors primarily with clean energy, while phasing down the use of fossil fuels and providing important economic, climate, and public health benefits.

Taken together, our results show that powering data centers with clean energy is more affordable, safer, and healthier than using fossil fuels. However, these beneficial outcomes require stronger federal, state, and local policies.

Current Policies Increase Reliance on Fossil Fuels

Under the Current Policies scenario, the United States risks increasing its reliance on fossil fuels to meet the growth in electricity demand from data centers and other sectors (Figure 2; Table 2). To supply this power, the nation adds more than 90 GW of new gas capacity between 2026 and 2035 and 335 GW by 2050 (Figure 3). Coal generation declines between 2026 and 2029 in response to planned retirements; it then remains relatively flat despite continued retirements; remaining coal plants are dispatched more to help meet the growth in demand.

Wind and solar generation increase under Current Policies to help meet demand growth and the requirements under states' climate and clean energy policies. Significant growth in wind and solar occurs through 2029 when tax credits are potentially available for projects that meet the beginning of construction and safe-harbor requirements. Growth is much slower after the tax credits expire.⁴

While most existing nuclear plants continue to operate through 2050, no new nuclear capacity is added, as it is more expensive than other options even with tax credits available through 2035. Because ReEDS is a least-cost planning model, it does not capture proposals by big tech companies to pay above-market costs to restart existing nuclear plants or build new ones to power data centers.

Isolating the impacts of data center demand, under the Current Policies scenario more than 60 percent of the generation needed to power data centers comes from gas and coal by 2035. Wind and solar provide nearly 40 percent (Figure 4).

Stronger Policies Ensure That Clean Energy Powers Data Centers

Restoring tax credits accelerates the deployment of wind and solar to power data centers. It also reduces reliance on gas and coal generation to meet the growth in electricity demand.

Adopting policies to reduce US power sector emissions of CO₂ to 95 percent below 2026 levels by 2050 would go even further, facilitating the clean energy transition to help meet economy-wide emission reduction targets. Wind and solar generation nearly triple between 2026 and 2035 and increase five-fold by 2050 to replace coal and gas. Combined, all renewable energy sources provide more than 60 percent of total US electricity generation by 2035 and 81 percent by 2050. Total low-carbon generation from renewables, nuclear, and carbon capture and storage (CCS) supply 75 percent of US electricity generation in 2035 and 97 percent by 2050.

To meet the emission reduction targets and comply with power plant carbon standards, coal generation is nearly phased out by 2038. Gas generation stays relatively flat through 2038 and then declines to 10 percent of US electricity generation by 2050. Gas with CCS increases near the end of the forecast, providing more than half of remaining gas generation in 2050. Most existing nuclear plants continue to operate through 2050. A small amount of new nuclear capacity (2.3 GW) is added near the very end of the forecast.

Under the Restored Tax Credits scenario, nearly half of the generation for data centers comes from gas and coal through 2032, but after that wind and solar meet nearly all of the growth in data center demand. Under the Low-Carbon Policy scenario, wind and solar meet most of the growth in demand from data centers; these sources replace generation from conventional coal and gas plants in the later years of the forecast. Gas with CCS and a small amount of coal with CCS also increase in the later years under the Low-Carbon Policy scenario.

The Role of Gas Plants Changes in A Decarbonized Electricity System

- Gas capacity increases by a modest amount to meet the increase in demand during the transition to clean energy resources, but use of that capacity dramatically declines over time. By 2050, conventional gas plants (without CCS) operate at 6 percent of their rated capacity on average across the United States, down from 36 percent in 2026, as they help maintain reliability and integrate high levels of wind and solar over longer, seasonal timeframes.

Meeting the Growth of Data Center Demand Increases Electricity Costs

Data center growth puts electricity ratepayers at risk of large cost increases. Wholesale electricity costs attributable to data center-driven demand growth range from \$411 billion to \$524 billion, cumulatively from 2026 to 2035 and \$886 billion to \$978 billion from 2026 to 2050. This represents 18 to 24 percent of total costs across the three scenarios (Figure 5).

- Restoring federal clean energy tax credits results in higher cumulative electricity costs of \$202 billion (8 percent) from 2026 to 2035, but cumulative savings of \$248 billion (4 percent) through 2050 compared with the Current Policies scenario. Adopting more ambitious climate and clean energy policies under the Low-Carbon Policy scenario results in slightly higher costs of \$291 billion (12 percent) from 2026 to 2035 and \$412 billion (7 percent) through 2050 compared with Current Policies.

Investing in Clean Energy Reduces Heat-Trapping Emissions and Air Pollution

- Under the Current Policies scenario, reliance on fossil fuels to power data centers and meet overall US electricity demand results in higher power plant CO₂ emissions, jeopardizing science-informed climate goals and resulting in greater climate-related damages (Figure 6) (Biden Administration 2024). CO₂ emissions decline between 2023 and 2029 as growth in wind and solar generation, accelerated by tax credits, replaces retiring coal generation and limits increases in gas generation. However, after tax credits for wind and solar expire, CO₂ emissions

steadily increase as gas generation grows and more coal generation sticks around to meet demand growth.

The additional fossil fuel generation used to power data centers increases the annual CO₂ emissions from US power plants by 19 percent (229 MMT) by 2035 under Current Policies when comparing the No Demand Growth scenario with the Mid Demand Growth scenario. In contrast, CO₂ emissions continue declining after 2029 in the Restored Tax Credits and Low-Carbon Policy scenarios as much higher levels of wind and solar generation replace coal and gas.

The Climate and Health Benefits of Reducing Fossil Fuel Use Outweigh the Costs of the Clean Energy Transition

Replacing electricity generation from fossil fuel combustion with clean electricity resources yields important public health benefits. It decreases emissions of the harmful air pollutants, such as nitrogen oxides (NO_x) and sulfur dioxide (SO₂), that contribute to respiratory ailments, heart attacks, other illnesses, and even mortalities (Lelieveld et al. 2023) (Figure 7).

The transition also results in a significant reduction in the heat-trapping emissions that drive climate change, which yields towering economic benefits by reducing future damages from climate impacts (EPA 2022). Between 2020 and 2024, the United States experienced 115 extreme weather and climate disaster events, each with losses exceeding \$1 billion and causing more than \$746 billion in total damages (NOAA 2025). Without action to curb emissions, these costs will continue to grow as the severity and frequency of extreme weather and climate disasters increase.

The increases in air pollution and heat-trapping emissions that result from using fossil fuels to power data centers also results in tens of billions of dollars of health costs and trillions of dollars in climate damages under Current Policies (Table 4 and Figure 8). Adopting clean energy policies as reflected in the Low-Carbon Policy scenario would result in much lower costs compared with Current Policies.

Clean Energy Policies Save Lives and Lower Health Costs

- Reducing emissions of NO_x and SO₂ avoids thousands of premature deaths and saves billions of dollars due to avoided mortalities. This underscores the importance of a rapid clean energy transition to reduce the public health harms resulting from fossil fuel-fired electricity generation.

Avoiding Climate Impacts Significantly Boosts Overall Benefits

Unlike public health damages, for which the impacts are more local, the damages from climate change are global, affecting the United States and other countries. These impacts include, but are not limited to, property damage, changes in agricultural productivity, and disrupted energy systems resulting from extreme heat, drought, wildfires, flooding, extreme weather, and other impacts. Using the social cost of carbon (EPA 2022), the Restored Tax Credits and Low-Carbon Policy cases deliver \$8.3 trillion to \$13.1 trillion in avoided climate damages when compared with Current Policies (Table 5).

Without Stronger Policies, High Data Center Demand Results in Additional Emissions and Costs

Without stronger policies, high growth of data center demand results in greater reliance on fossil fuels, higher emissions, and additional costs. Under the Current Policies, High Demand Growth scenario:

- Generation from gas and coal** is 11 percent higher by 2035 and 15 percent higher by 2050 than the Mid Demand Growth scenario.
- Power plant CO₂ emissions** from data centers are 342 MMT in 2035 and 416 MMT in 2050, which is 50 to 72 percent higher than the Mid Demand Growth scenario.
- Electricity system costs** that can be attributed to this higher data center demand exceed \$1.6 trillion, cumulatively, from 2026 to 2050. This is 73 percent higher than the Mid Demand Growth scenario costs of \$924 billion.

Adopting Clean Energy Policies Limits Emissions and Cost Increases from High Data Center Demand Growth

Under the Restored Tax Credits, High Demand Growth scenario, wind and solar generation meet most of the increased demand while the share of gas and coal generation gradually declines. Power plant CO₂ emissions are 44 percent (690 MMT) lower in 2050 than in the Current Policies, High Demand Growth scenario; electricity system costs are \$292 billion (4 percent) lower.

Recommendations for Policymakers, Regulators, Utilities, and Big Tech Companies

The UCS modeling illustrates that clean energy can meet the challenge of increased demand caused by data centers even as the electricity sector simultaneously transitions away from fossil fuels. Our recommendations provide a starting point for ensuring that primarily clean, affordable, and healthy energy sources power new load growth from data centers and electrification, rather than meet new demand by increasing the nation's reliance on dirty and outdated fossil fuels. This outcome will require action at both the state and federal levels. State Public Utility Commissions (PUCs) have jurisdiction over retail electricity sales and rates; the Federal Energy Regulatory Commission (FERC) has jurisdiction over interstate transmission, wholesale electricity markets and rates, and the setting of reliability standards.

The UCS recommendations are broad in scope, drawing not only on insights from our modeling but also from on-the-ground advocacy, best practices emerging at the state and regional levels, and other policy and regulatory changes needed to accelerate the clean energy transition.

Require Data Centers to Pay for Additional Electricity Costs

State PUCs should require data centers and other large electricity customers (such as manufacturing facilities) to pay a fair share of any incremental costs for generation, transmission, grid upgrades, and operations, ensuring that these costs do not fall on other ratepayers. In our analysis, the cumulative costs of meeting data center electricity demand could be more than \$900 billion by 2050, representing more than 18 percent of total US electricity system costs. Minimum revenue obligations, as well as prepayments or letters of credit for those costs, should be conditions for utilities to serve data center customers.

Regulators must hold utilities accountable for developing new electricity supplies required by data centers, basing accountability on firm commitments with financial backing from data center customers. The Federal Energy Regulatory Commission should also require utilities to utilize rate-setting processes to track transmission costs caused by specific customers. States must then require data center customers and other large loads to pay the costs of direct transmission connection. State PUCs should require utilities to recognize these costs in retail-cost-of-service studies so that costs can be allocated appropriately (Jacobs 2025).

State PUCs should require utilities to develop tariffs and other rate structures that lead data centers to acquire 24/7 carbon-free electricity (CFE) and protect other customers from rate increases; such requirements should build off current examples from leading states (Linvill et al. 2024; Fisher et al. 2024). The requirements should include mandates to procure additional, deliverable, and time-matched clean energy.

“Bring your own capacity and energy” is another 24/7 CFE model that enables data centers to identify resources that meet their own needs while the utility serves as purchaser, schedules the delivery of power, and passes costs and benefits to the buyer. Data centers and other large customers can also directly procure 24/7 CFE from suppliers through power purchase agreements.

Require Utilities to Conduct Long-Term Planning for Data Center Load Growth

State PUCs and legislatures should require utilities to develop long-range integrated resource plans that include transparent reporting of projected increases in electricity demand from data centers, other large loads, and electrification. The UCS analysis highlights the importance of detailed scenario modeling that projects the sources of electricity generation needed to meet this demand and fulfill state climate and clean energy requirements. Requiring utilities to publicly disclose their assumptions and bases for load and generation forecasts will improve planning and help avoid overbuilding the electricity system.

Due to the uncertainty in forecasting load growth due to data centers, utilities should model multiple scenarios that identify a range of generation, storage, transmission, and demand-side solutions. This would help minimize the risks of over- or underinvesting. Scenarios and iterative planning cycles also enable utilities to adjust as better information becomes available.

Adopt Fair Interconnection and Transmission Rules That Reduce Barriers to Deploying Clean Energy

As the UCS analysis shows, adopting policies to decarbonize the power sector by 2050 could nearly triple wind and solar generation by 2035; by 2050, wind and solar generation would increase five-fold and replace coal and gas. This would require a significant increase in energy storage and transmission capacity. FERC should require regional grid operators to reform generator interconnection processes to ensure that they treat all resources fairly. That can be accomplished largely through the timely implementation of FERC Order 2023; initially issued in 2023, its implementation has been slow.

Utilities and regional grid operators should increase transmission capacity to enable the delivery of power from new resources to consumers. This progress starts with smart, forward-looking investments identified through robust planning processes envisioned in FERC Order 1920, issued in 2024. In recent years, the Mid-Continent System Operator's Long Range Transmission Planning process—a good example of such planning—has produced two project portfolios that represent more than 40 individual investments designed to enable new resource additions and address forecasts of load growth, including from data centers (MISO 2024b).

Utilities and regional grid operators should consider other cost-effective solutions and strategies as well. Examples include grid-enhancing technologies, non-wires alternatives, virtual power plants, the reconductoring of existing lines, and demand flexibility.

Require Generation for Data Centers to Be Additional and Carbon-Free

State PUCs and legislatures should require utilities to meet the growth in electricity demand from data centers with new low-carbon or zero-carbon generation. States with renewable or clean electricity standards should require data centers and other large loads to contribute financially to ensuring the standards can be met cost effectively and to avoid imposing additional costs on other customers.

In addition, state PUCs should not allow co-location of data centers with existing power plants being used to meet electricity demand from existing customers. Replacing this existing generation with other sources of generation could increase emissions and costs for other customers.

On the other hand, co-locating data centers with new wind, solar, and storage projects that are sized to meet the load and located near existing generators with excess capacity and approved interconnection could allow for faster approval processes. At the same time, this type of co-location would reduce emissions, help maintain reliability, and lower costs (Engel, Varadarajan, and Posner 2025).

To reduce emissions and public health impacts on local communities, data centers and other large loads should use energy storage instead of diesel or gas generation for back-up power.

Increase Transparency and Accountability

The UCS analysis highlights the importance of tracking and publicly reporting air pollution and heat-trapping emissions to protect public health and meet climate goals. State and federal policymakers should require data center companies and

utilities to negotiate power purchase agreements and grid interconnection terms in public proceedings rather than behind closed doors and non-disclosure agreements.

Policymakers should also require data center companies and utilities to publicly report power needs, onsite and induced emissions, water use, and other data—and to do so with enough advance notice for communities to make informed decisions. State legislatures should direct environmental and utility regulators to hold data center companies accountable for avoiding, minimizing, or mitigating any negative reliability, environmental, or public health impacts.

Adopt Stronger Climate and Clean Energy Policies

The UCS analysis shows the need for stronger policies to accelerate the clean energy transition and provide important economic, climate, and public health benefits. State and federal policymakers should adopt policies that require utilities to meet a growing share of overall electricity demand with renewable energy and other carbon-free electricity sources, combined with investments in storage, new transmission capacity, energy efficiency, and demand-flexibility.

Policy changes include, but are not limited to, restoring federal clean energy tax credits, establishing binding emission reduction targets and carbon-free electricity standards, adopting strong power plant carbon standards, and providing incentives to increase transmission capacity. Policies supporting the development of data centers should include standards and guardrails that protect public health while reducing emissions, energy and water use, and other environmental impacts (NAACP 2025; Dulani and Zaidi 2025)

Setting a Proper Course

The path that states and the nation choose on how to power data centers has wide-ranging implications for energy affordability, reliability, public health, the climate, and the economy as a whole.

Alarming, the federal government is moving in the wrong direction. Recent congressional rollbacks of federal clean energy tax credits and incentives, combined with regulatory and executive actions favoring fossil fuels, repealing power plant carbon standards, undermining climate science, and attacking renewable energy and environmental, social, and governance (ESG) policies are dramatically heightening the risks to people and the environment. Limiting cost-effective clean energy solutions like solar, wind, and energy storage that can be deployed quickly and at scale to meet data center load growth could lead to electricity shortages, higher prices, and greater climate and public health impacts. It also undermines the nation's ability to compete as a global leader on clean energy innovation.

Despite the compelling economic and societal benefits of investing in clean energy, they will not be fully realized without stronger policies at the state and national levels. Already, states and local communities across the country are facing proposals to build power-hungry data centers with uncertain trajectories for development and concerns about costs and benefits.

Strong leadership from Congress, future administrations, and the states can get the United States back on track. Such efforts can build on the foresight of leading states that have adopted carbon-free electricity standards and targets to achieve deep reductions in heat-trapping emissions. Utilities and big tech companies must follow through on their commitments to power data centers with carbon-free electricity and achieve net zero emissions across their operations and supply chains. And achieving science-based climate goals will require stronger policies to clean up other sectors of the economy, including by replacing fossil fuels with carbon-free electricity.

Throughout, it is critical to monitor and prioritize energy affordability. This includes requiring data centers to pay a fair share of any additional costs they impose on the system. Increased investments in energy efficiency and demand flexibility will also help limit future increases in demand and lower consumer energy bills.

Better planning, regulatory reforms, and increased transparency and accountability will be needed to make informed decisions that enable the responsible growth of electricity demand from AI and avoid overbuilding the electricity system. Only bold action will ensure that the nation meets electricity demand growth with clean energy, achieves its climate goals, and protects consumers from added costs brought on by the growth of data centers. The path for the United States to achieve these benefits is clear.

Authors

The Union of Concerned Scientists report author team includes **Steve Clemmer**, director of energy research in the Climate and Energy Program; **Maria Chavez**, energy analyst in the program; **Samuel Dotson**, energy modeler in the program; **James Gignac**, Midwest policy director in the program; **Sandra Sattler**, senior energy modeler in the program; and **Lee Shaver**, senior energy analyst in the program.

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Organizational affiliations are listed for identification purposes only. The opinions expressed herein do not necessarily reflect those of the organizations that funded the work or the individuals who reviewed it. The Union of Concerned Scientists bears sole responsibility for the report's contents.

Notes

1 Data center flexibility refers to the ability of data centers to reduce demand during periods of high demand or high stress on the grid (e.g., during extreme weather). While data center flexibility is not currently being deployed, big tech companies have initiated several pilot projects with utilities (Terrell 2025). It has the potential to significantly reduce peak demand and the need for new generation while lowering overall costs (Norris et al. 2025; Knittel, Senga, and Wang 2025; Cox, Schwartz, and Stenclik 2025).

2 On December 1, 2025, the US Department of Energy announced that the National Renewable Energy Laboratory (NREL) would be renamed the National Laboratory of the Rockies. In our report and supporting materials, we have chosen to use the original name for clarity.

3 As electrification of other sectors grows, the share of electricity demand growth from data centers falls to 27 percent by 2050 under our Mid Demand Growth scenario and 55 percent under our High Demand Growth scenario. However, UCS based our electricity demand projections for other sectors on data from Evolved Energy Research that only included modest increases in electrification. Using EER projections for a high-electrification scenario that would be necessary for the United States to reach economy-wide net zero emissions by 2050, the data center share of total demand growth would fall to 17 to 29 percent by 2050 under the Mid and High Demand Growth cases (Jones et al. 2024).

4 In updated guidance issued on August 15, 2025, the Internal Revenue Service (IRS) revised beginning-of-construction and safe-harbor tax credit eligibility requirements for wind and solar projects. Construction is considered to have started if projects can demonstrate that physical work of a significant nature has begun onsite or offsite of the energy facility property. Previous IRS "safe harbor" guidance also allowed projects that incurred 5 percent or more of total costs to be eligible. The updated IRS guidance only allows smaller solar projects with a nameplate capacity of less than 1.5 MW (AC) to qualify. Wind and solar projects meeting these requirements before July 4, 2026, have up to four years to be placed in service to qualify for the tax credits. If they do not meet these requirements, projects must be placed in service by December 31, 2027 (Sweeney, Hanlon, and Kaercher 2025). For our modeling, we assumed that

larger wind and solar projects could meet these requirements and receive tax credits until July 4, 2030. See the technical appendix for more details.

Figures and tables for this report are available in the full report PDF, [available here](#).

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Bill Conklin <supervisorhayestownshipmi@gmail.com>

Fwd: Email for Joe Gorney

2 messages

Leslie Cunningham <[REDACTED]> Sun, Mar 8, 2026 at 1:47 PM
 To: Matt Cunningham <trustee2@hayestownshipmi.gov>, Hayes Treasurer <treasurerhayestownshipmi@gmail.com>, Deputy Clerk Email <deputyclerkhayes@gmail.com>, Roy Griffiths <rwgriffits3@verizon.net>, Hayes supervisor <supervisorhayestownshipmi@gmail.com>, trustee1@hayestownship.gov

Here is some solid thinking about data centers, and they admit their bias from the beginning, However it is based upon science and evidence. Joe would be willing to meet with you either formally or informally at any time. Let me know if you need me to host a coffee hour at my house!

Les

----- Forwarded message -----

From: Ann Gorney <[REDACTED]>
 Date: Sun, Mar 8, 2026 at 1:29 PM
 Subject: Email for Joe Gorney
 To: Leslie Lyons Cunningham <[REDACTED]>, Cunningham Leslie Lyons <[REDACTED]>

Here is my brother's email, and a link to begin looking into Data Centers. I have read a lot of material he has sent me. I still do not believe a Data Center up here is a good thing. There are too many variables and things that can go wrong. To me, it's like they are building the ship while already sailing it.

Ann

Begin forwarded message:

From: "Gorney, Joseph" <Joseph.Gorney@fairfaxcounty.gov>
 Subject: RE: [EXTERNAL]Join us on March 31 for a Conservation Cafe on Nuclear Deregulation!
 Date: March 4, 2026 at 11:40:47 AM EST
 To: Ann Gorney <[REDACTED]>

Annie,

You can give him my contact information. There's a lot of information I could pass along. The Piedmont Environmental Council website would be a good place to start ([Data Centers & Energy Demand - The Piedmont Environmental Council](#)). Fairfax County is doing some land use compatibility regulations, but we don't address the full range of issues that must be considered. I also plan to investigate what Frederick County, Maryland is doing via their (CDI?) Zoning Overlay and various regulatory standards for pretreatment of effluent and reporting. Whatever you do, do not agree to non-disclosure agreements. Otherwise, there's no accountability.

More to come.

Joe

Joseph C. Gorney, AICP, Chief, Planning & Policy Section
 Department of Public Works & Environmental Services - Stormwater Planning Division
 Fairfax County, Virginia
 ISA Certified Arborist, MA-7095A

Bill Conklin <supervisorhayestownshipmi@gmail.com>

Sun, Mar 8, 2026 at 3:38 PM

To: Leslie Cunningham [redacted]

Thank you for passing this along. I will be reviewing the materials.

Bill Conklin

[redacted]

[Quoted text hidden]



Bill Conklin <supervisorhayestownshipmi@gmail.com>

Follow-up questions after last night's BOC meeting

3 messages

Sheri McWhirter <[REDACTED]>

Tue, Mar 10, 2026 at 2:23 PM

To: "supervisorhayestownshipmi@gmail.com" <supervisorhayestownshipmi@gmail.com>

Cc: "acurley-pc@gmail.com" <acurley-pc@gmail.com>

Hi Bill,

I'm following up with you after watching last night's Board of Trustees meeting for Hayes Township.

I want to double check with you that the data center proposal moratorium was extended from six months to 12 months. And that the board added back in the wording about aggrieved property owners' ability to seek a hearing to argue the moratorium has blocked a viable economic use.

Is that all accurate?

Also, what are your thoughts regarding objections to the township's data center committee including Planning Commission member Alexander Curley, who is employed by Holtec?

Has any legal counsel advised against having Mr. Curley on that committee?

How will the township respond to this concern over conflict of interest voiced by the public last night?

I'm going to copy Mr. Curley on this email so that he can join the conversation.

Also, I read in the supervisor's report about Mr. Curley and BOC Treasurer Julie Collard working with several community members on the Data Center Committee, expected to meet over the next six to nine months. I simply wanted to confirm that info was also accurate, since you didn't speak about it during last night's session.

Thanks for your help,

Sheri McWhirter

Environment reporter

MLive/Grand Rapids Press

[REDACTED]

[REDACTED]

0183

Bill Conklin <supervisorhayestownshipmi@gmail.com>
To: Sheri McWhirter <[REDACTED]>
Bcc: Kristin Baranski Clerk <clerk@hayestownshipmi.gov>

Tue, Mar 10, 2026 at 10:19 PM

Hello Sheri -

Sorry for the tardy response as I was in Board of Review all day.

In response: Yes your first paragraph is true - we extended the Moratorium for 12 months by an Amended Resolution.

The Planning Commission appointed Alexander Curley to the Data Center Advisory Committee; he is employed in the Maintenance Dept by Holtec at the former Big Rock site, as I was told. In February a resident raised her objections since Alex Curley was employed by Holtec. Last night's objections [with the Website from Holtec] raised a significant issue last night, to wit: July 31, 2025 "Holtec International announces HI-CLOUD, a new initiative focused on converting decommissioned nuclear power plant sites into secure, utility-ready data center campuses..." I think that this quote, allegedly outlined on their website, raises some issues, which must be researched.

The evidence submitted last night about Holtecs needs further study re: Mr. Curley's appointment to the Committee. I am not certain of the standard in determining whether there is a conflict simply by his employment with Holtec. Although he is employed by Holtec, does that fact, in and of itself, require a recusal to serve or a finding of a conflict? I am not certain, although the "appearance" of a conflict seems evident. Lawyers are required to avoid the appearance of impropriety, but lay individuals are not held to that standard. Therefore, I need to do some research and discuss the matter with the township attorney.

The Advisory Committee was appointed to investigate and study the various methods to address Data Centers and if an Ordinance is required then what conditions, safeguards, etc can be required to protect the environment and the community, if or when an entity makes application for a Data Center in Hayes Township.

Yes, the Township Board referred the investigation and study about a Data Center Ordinance to the Planning Commission who appointed Alexander Curley to the Committee and Julie Collard, Treasurer volunteered from the Board of Trustees to be on that Committee. The Committee has not been formed, however, a number of individuals have submitted their applications to be named to the 5-7 member Committee. Yes, we expect that Committee to submit their recommendations to the Board of Trustees within the next 6-9 months. That will give the Board a few months to study their recommendations and make a decision.

Thank you for your inquiry - please feel free call me if you have any questions.

Bill Conklin
[REDACTED]

[Quoted text hidden]

Bill Conklin <supervisorhayestownshipmi@gmail.com>
To: Melvin Czechowski <[REDACTED]>

Wed, Mar 11, 2026 at 3:22 PM

FYI.....letter from last night.

[Quoted text hidden]

[REDACTED]

[REDACTED]

[REDACTED]



Bill Conklin <supervisorhayestownshipmi@gmail.com>

Hayes Twp Board on data centers

2 messages

Susan Vandeventer [REDACTED] Mon, Mar 9, 2026 at 4:30 PM

To: kristin baranski <clerk@hayestownshipmi.gov>, Hayes supervisor <supervisorhayestownshipmi@gmail.com>, Matt Cunningham <trustee2@hayestownshipmi.gov>, Doug Kuebler <hayestrustee5@gmail.com>, Treasurer Julie Collard <treasurer@hayestownshipmi.gov>

Good Afternoon

I don't live in Charlevoix County but I believe that data centers will have an impact on our entire State which make decisions made in Charlevoix pertinent to all of us.

I'm asking the Board to please enact an ordinance to uphold a moratorium on the construction of data centers until more time has been spent studying their potential impacts - both positive and negative - on our communities and our Great Lakes. And to consider alternatives to data centers such as cloud computing which are less known but could be equally effective.

There seems to be a rush across Michigan to build these data centers based on misleading or even deceptive information. We would be wise to proceed with caution instead of finding ourselves in the situation of "closing the barn door after the horse has bolted."

Respectfully,

Susan VanDeventer
Petoskey, MI

Bill Conklin <supervisorhayestownshipmi@gmail.com>

Wed, Mar 11, 2026 at 4:19 PM

To: Susan Vandeventer [REDACTED]

Cc: kristin baranski <clerk@hayestownshipmi.gov>, Treasurer Julie Collard <treasurer@hayestownshipmi.gov>

Hello Susan Vandeventer,

Thank you for your e-mail communication outlining your concerns and suggestions, which mirror those shared by the Hayes Township Board of Trustees. Yes, on Monday evening, the Board did pass an amended Resolution to extend our Moratorium for a period of twelve months, during which much study, research and investigation will be undertaken by ourselves and the Advisory Committee. Proceeding with caution while reading what has occurred in other communities and in other states will help us in making wise and prudent decisions about this issue, including alternatives and safeguards.

We appreciate that you shared your ideas with us. We look forward to any further information which you might want to share with us.

All the best,

Bill Conklin

[REDACTED]

[Quoted text hidden]



[REDACTED]



[REDACTED]



[REDACTED]



Bill Conklin <supervisorhayestownshipmi@gmail.com>

Data Center Advisory Board

5 messages

Melvin Czechowski <[REDACTED]>
 To: Bill Conklin <supervisor@hayestownshipmi.gov>

Wed, Mar 11, 2026 at 10:50 AM

Bill,

I raised the issue of Mr Alex Curley representing the township as a lead member of the data center advisory board because of his work association with Holtec International, which is involved in converting decommissioned nuclear power plants into data center campuses.

I mentioned that his work with Holtec puts Mr. Curley in a conflict of interest and could compromise his objective views as an data center advisory member to determine pros and cons of data centers on the Big Rock site.

What is happening? Have members been selected for the board, and if possible, who are they and their background?

Regards,

Mel

Melvin H. Czechowski, Ph.D.

Bill Conklin <supervisorhayestownshipmi@gmail.com>
 To: Melvin Czechowski <[REDACTED]>

Wed, Mar 11, 2026 at 3:20 PM

Thank you Mel for your inquiry and for bringing up to the Board on Monday night the information in their Website.

M-Live Shirley McWhirter asked me about my position and I will forward my response to you. Nonetheless, the Committee members have not been formed to my knowledge; I will be requesting an Opinion from Todd Millar as it appears that he has an inherent conflict due to his employment, although he may have a different opinion. He could be valuable to assist as a member of the public. But again, I have one vote and the Planning Commission Chair appointed him - it may come to a discussion in April at the Board meeting. As I have been told, there are two scientists/engineers who have experience with the issues who may be appointed to be on the Committee.

We are just appointing members of the Short Term Rental on Friday or over the weekend - our first meeting will probably be the last week in March by sending the members copies of many sets of Ordinances.

Bill Conklin

[REDACTED]

[Quoted text hidden]

Melvin Czechowski <[REDACTED]>
 To: Bill Conklin <supervisorhayestownshipmi@gmail.com>

Thu, Mar 12, 2026 at 4:13 PM

0188

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Bill,

Thank-you for your response, and the cc me on the letter to Ms. McWhiter.

I was a little confused with your response to Ms. McWhiter. Your comments are in black and mine in red.

He (I assume you mean Mr. Curley?) **could be valuable to assist as a member of the public** (advisory member or general public?). Yes, as a general member of the public that may be the case, but, in addition to being a member of the advisory group, he is also a Planning Commission member. Mr. Curley is an employee of Holtec, and we know that Holtec is interested in converting decommission nuclear plants into Data Centers.

Mr. Curley in his townships positions will/can have more influence than all others on the final Data center report. As a member of both the advisory committee and the Planning commission he would be susceptible to extreme pressure from Holtec to push for a data center at the Big Rock Site (all positive aspects and minimizing negative aspects). If he were not a member of the Planning commission but only a member of the advisory group his Holtec employment would be less of an concern. In fact, it would be better if he was just a member of the public who is interested in how data centers would affect our township.

I am sure by now he has told his employer that he is a member of the advisory committee involved in discussions on data centers. At the least, he is a conduit of information to his employer, who would then know what the advisory group is doing. Remember, that the area most likely to be proposed as a data center is the area owned by Holtec and Consumers Power.

In your response to Ms. McWhiter on her question of extending the moratorium from 6 to 12 months, and about aggrieved property owner. You answered that the moratorium is extended to 12 months, but you did not answer about aggrieved property owners. I believe the property owners most aggrieved would be Holtec and Consumers Power, as their property is a very good site for a data center. The township should be expecting to hear from them soon.

You do not need to respond.

I appreciate how your are conducting the BOD meetings, far superior than the former supervisor.

Mel

[Quoted text hidden]

Melvin Czechowski <[redacted]>
o: Bill Conklin <supervisor@hayestownshipmi.gov>

Thu, Mar 12, 2026 at 4:14 PM

[Quoted text hidden]

Bill Conklin <supervisorhayestownshipmi@gmail.com>

Thu, Mar 12, 2026 at 8:46 PM

4/23/26, 12:56 PM

Gmail - Data Center Advisory Board

To: Melvin Czechowski m12czechow@dcab.com

Thank you Mel -- points well taken.

Bill

[Quoted text hidden]



Bill Conklin <supervisorhayestownshipmi@gmail.com>

Data Centers and Alexander Curley -

5 messages

Bill Conklin <supervisorhayestownshipmi@gmail.com>

Mon, Mar 16, 2026 at 8:29 PM

To: Roy Griffiths <rwgriffitts3@gmail.com>, Kristin Baranski Clerk <clerk@hayestownshipmi.gov>

Cc: Todd Millar <tmillar@parkerharvey.com>

Hello Roy and Kistin --

I talked with Todd and received his analysis and thoughts that since Alexander was on the Committee which is advisory only, he did not see a conflict of interest.

I understand what he is saying technically and probably from a legal perspective, I do not agree since the Advisory Committee will be gathering information, investigation, research and we all know that such efforts can be skewed to support a position - I will probably be criticized on the STR for having a perspective about enforcement -

I just do not think that the Township should open itself to undue criticism based on his employment relationship with a company that is fostering a partnership with data centers - the appearance will damage the Township, in my opinion.

I have talked with 5 people who are business people 8+ years in the township who have never attended a Board meeting and 3 outside supervisors and they all said that it was not a good idea as Alexander could be influenced not openly but by an internal mechanism which is subtle and not apparent - that opens the door for suspicion.

I am not taking a Hayes Voters for Change perspective as I have not talked to any of them, this is my gut feeling based on my view that all government must be above reproach in their dealings with all matters --

I think Roy should be chair and if Alexander is on the Committee then LuAnne should also be on the Committee to balance out the appearance of partiality - I know this idea will hit the moon - but it's best that I offer an alternative than a blanket no - (and I am not stuck on LuAnn being on the Committee, either), but it appears to be a viable option given her involvement in Marshall and Saline - she does research issues.

I will explain my position in my Supervisor's Report or at the next meeting, just so I can cover myself that I addressed the issue, offered my opinion and whatever is decided, is decided and I can move on. I do want the record to be clear however.

Please know that I am not being opposed to Alexander or either of you, it is what appears right to me and nothing else. I hope you can trust that. Lawyers are trained over time to separate personal from what the law requires or what seems right apart from personality or position.

Thanks for understanding my position,

Bill

Roy Griffiths <rwgriffitts3@gmail.com>

Thu, Mar 19, 2026 at 8:02 AM

To: Bill Conklin <supervisorhayestownshipmi@gmail.com>

Cc: Kristin Baranski Clerk <clerk@hayestownshipmi.gov>, Todd Millar <tmillar@parkerharvey.com>

Good morning all,

Bill, thank you for speaking with Todd on this. While I do not think it is necessarily in the long term best interest of the township to eliminate good people from serving us in the many challenges we face, I do understand that we have been pushed into a complex public corner by the actions of one individual.

If our overriding goal is to best manage the potential impact of hyper-scale data centers should an entity seek to develop one in the township, then I reluctantly agree that whatever we end up with must be accepted by the public. Last night's ridiculous display demonstrates how far detached from common sense the township has been dragged. We cannot afford to have that happen with this issue. To that end, I suspect the well has been poisoned enough with Alex's role as workgroup leader that he and I will need to switch roles on the committee.

0192

In order to do this in a manner that respects his work and role in the community I believe that you and I need to meet with him privately to explain the concerns you have outlined and talk with him about what's best for the township. The timing of the change and the rationale behind it for public consumption can be fleshed out.

If you are available on this Friday perhaps we can reach out to Alex and meet him at the hall? Please feel free to call me to discuss this if you have any concerns.

Roy

[Quoted text hidden]

Bill Conklin <supervisorhayestownshipmi@gmail.com>

Thu, Mar 19, 2026 at 10:06 AM

To: Roy Griffiths <rwgriffitts3@gmail.com>

Cc: Kristin Baranski Clerk <clerk@hayestownshipmi.gov>, Todd Millar <tmillar@parkerharvey.com>

I understand your explanation about the sensitivity of the issue and my concerns. I am available on Friday whenever it works best.

Thanks for your perspective as well - but it has nothing to do with one person poisoning my well, as I felt that it was not good when you first mentioned Alex as leader. Their website corroborated my initial thoughts.

Bill

[Quoted text hidden]

Roy Griffiths <rwgriffitts3@gmail.com>

Thu, Mar 19, 2026 at 11:15 AM

To: Bill Conklin <supervisorhayestownshipmi@gmail.com>

I did not mean your well or opinion, rather the well of public opinion. Sorry if it came across that way.

[Quoted text hidden]

Jill Conklin <supervisorhayestownshipmi@gmail.com>

Thu, Mar 19, 2026 at 1:01 PM

To: Roy Griffiths <rwgriffitts3@gmail.com>

all good -- no issue.

[Quoted text hidden]



Bill Conklin <supervisorhayestownshipmi@gmail.com>

data center work group request

4 messages

Roy Griffiths <rwgriffitts3@gmail.com>

Mon, Mar 23, 2026 at 9:32 AM

To: Donald Gregory <[REDACTED]>

Cc: Treasurer Julie Collard <treasurer@hayestownshipmi.gov>, Hayes supervisor <supervisorhayestownshipmi@gmail.com>

Good Morning Donald,

Following up on our previous email regarding the work group's membership, we would like to request your contribution to the process.

Given your demonstrated interest in data center legislative actions and the related messaging in the upcoming election cycle, we could use your assistance in monitoring and reporting on these developments across the state.

If you could provide a monthly analysis—or updates whenever significant actions occur—it would be greatly appreciated. I am happy to discuss this further if you have any questions.

Best Regards,

Roy Griffiths
Julie Collard

Donald Gregory <[REDACTED]>

Mon, Mar 23, 2026 at 1:10 PM

To: Roy Griffiths <rwgriffitts3@gmail.com>

Cc: Treasurer Julie Collard <treasurer@hayestownshipmi.gov>, Hayes supervisor <supervisorhayestownshipmi@gmail.com>

Hi Roy, Does this mean I'm on the subcommittee? I got a communication earlier today that I wasn't. Cuidate

[Quoted text hidden]

--

Donald Gregory
[REDACTED]

On two occasions I have been asked by members of Parliament, 'Pray, Mr. Babbage, if you put into the machine wrong figures, will the right answers come out?' I am not able rightly to apprehend the kind of confusion of ideas that could provoke such a question. - Charles Babbage

Roy Griffiths <rwgriffitts3@gmail.com>

Mon, Mar 23, 2026 at 5:50 PM

To: Donald Gregory <[REDACTED]>

Cc: Treasurer Julie Collard <treasurer@hayestownshipmi.gov>, Hayes supervisor <supervisorhayestownshipmi@gmail.com>

Good afternoon Donald,

The work group proper consists of 5 members. These five will have the duty of preparing the recommendations to the PC. We have the ability to ask certain individuals to assist us in areas of particular importance. The goal of this is have more help from people while we work to compile information.

We have asked you first, given your interest and your involvement in the area. Your contribution will be greatly appreciated and incorporated as appropriate in the groups recommendations. As the task of the work group is primarily gathering information and distilling it into a usable package of information for near future use by the PC and the Board to insure that the township is well positioned to respond to any potential data center project, should one ever come to pass. Keeping track of the rapidly changing political environment is vital.

I hope this clarifies the importance of the ask.

Best regards,

Roy

0194

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[Quoted text hidden]

Donald Gregory <dgregorympe@gmail.com>

Tue, Mar 24, 2026 at 4:41 PM

To: Roy Griffiths <rwgriffitts3@gmail.com>

Cc: Treasurer Julie Collard <treasurer@hayestownshipmi.gov>, Hayes supervisor <supervisorhayestownshipmi@gmail.com>

Hi Roy, Who is on the Data Center Committee?

[Quoted text hidden]



Bill Conklin <supervisorhayestownshipmi@gmail.com>

Data Centers

3 messages

Roger <[REDACTED]@gmail.com>

Tue, Mar 24, 2026 at 5:31 PM

To: Bill Conklin <supervisorhayestownshipmi@gmail.com>

As promised Bill, here is my recommendation to our board. I'll send you our STR ordinance tomorrow.

Roger

 **Data Center Ordinance Considerations.pdf**
110K

Bill Conklin <supervisorhayestownshipmi@gmail.com>

Wed, Mar 25, 2026 at 2:26 PM

To: Roy Griffiths <rwgriffitts3@gmail.com>

I met Roger Soldano while getting a haircut in town and he called asking about our Data Center issue - afterwards he stated that Norwood has started the process, asked for his info and advised about our STR - he passed along their Ordinance as well.

So I pass it along -- Bill

[Quoted text hidden]

 **Data Center Ordinance Considerations.pdf**
110K

Roy Griffiths <rwgriffitts3@gmail.com>

Wed, Mar 25, 2026 at 6:51 PM

To: Bill Conklin <supervisorhayestownshipmi@gmail.com>

Thanks, this is quite helpful.

[Quoted text hidden]

NORWOOD TOWNSHIP BOARD BRIEFING

Zoning Controls for Data Centers / High-Intensity Computing Facilities

Purpose

To provide the Township Board with a clear, legally sound approach to managing potential data center development in a way that protects township infrastructure, residents, and long-term financial interests.

Why This Issue Requires Immediate Attention

Data centers are increasingly targeting rural communities due to land availability and lower costs. While often presented as low-impact, these facilities can place significant demands on local systems:

- **Electrical Load:** Extremely high demand, often requiring new substations or grid upgrades
- **Noise:** Continuous operation of cooling systems and periodic generator testing
- **Traffic:** Heavy truck traffic during construction and ongoing maintenance
- **Backup Power:** Large diesel generator arrays and on-site fuel storage
- **Limited Local Benefit:** Minimal permanent employment relative to land use

Without proper zoning in place before a proposal is submitted, the Township may have limited ability to control these impacts.

What Michigan Law Allows

Under Michigan zoning law:

- A township cannot completely prohibit a legitimate land use everywhere
- However, a township can control where and how that use occurs

This includes the ability to:

- Restrict the use to specific zoning districts
- Require Special Land Use approval
- Require site plan review
- Impose reasonable conditions to protect public health, safety, and welfare

Key Principle:

The Township regulates impact—not simply the use itself.

Recommended Zoning Strategy

1. Restrict Location

- Allow data centers only in the most restrictive industrial district
- Prohibit in residential, agricultural, and commercial zones

2. Require Special Land Use Approval

- No by-right approval

- Township retains discretion based on compatibility and impact

3. Require Proof of Infrastructure Capacity

Applicant must demonstrate:

- Electrical system can support demand without affecting existing users
- Local roads can handle construction and operational traffic
- Fire and emergency services can adequately respond

4. Establish Performance Standards

- Strict noise limits at property lines
- Large setbacks and buffering from neighboring properties
- Controls on generator placement and testing
- Lighting limits to prevent spillover
- Stormwater and environmental protections

5. Require Decommissioning Assurance

- Site restoration plan required
 - Financial guarantee (bond or escrow) to protect the Township
-

Why This Works

- Legally defensible under Michigan law
 - Ensures developers address impacts before approval
 - Protects township taxpayers from infrastructure costs
 - Maintains rural character and land-use compatibility
-

Immediate Action Option

If development pressure is anticipated, the Township may adopt an:

Interim Zoning Ordinance

- Takes effect quickly
 - Temporarily regulates or pauses development
 - Provides time to adopt permanent standards
-

Bottom Line

This is not about stopping development.

It is about ensuring that any development pays its own way and does not burden the Township.

If a project is appropriate, it will meet the standards.

If it cannot, it does not belong here.

Case law governing Zoning:

The main statute is MCL 125.3207, which says a zoning ordinance or zoning decision cannot have the effect of totally prohibiting a land use within the local unit if there is a demonstrated need for that use in the local unit or surrounding area, unless there is no place where it may be appropriately located or the use is unlawful. That is the rule you have to design around.

The most useful Michigan Supreme Court case is *Kyser v Kasson Township*, 486 Mich 514 (2010). *Kyser* explains that Michigan's exclusionary-zoning statute, now MCL 125.3207, is the governing framework for these claims, and it also reinforces that zoning ordinances are generally presumed valid. In other words, a township has room to regulate, but it should avoid writing an ordinance that looks like a disguised total ban.

Another useful case is *Hendee LLC v Meridian Township*, which the search results identify as addressing ripeness under MCL 125.3207. The takeaway is that an exclusionary-zoning challenge often is not ripe until there has been an actual zoning request or application process sufficient to frame whether the use is truly excluded in that community. That matters because a township is usually on firmer ground if it has a real ordinance with standards and a real review process, rather than an ad hoc "no."

For the "demonstrated need" piece, *Houdek v Centerville Township* is helpful. The Court of Appeals there rejected an exclusionary-zoning claim because the plaintiffs had not shown a total prohibition and had not shown a demonstrated need for the use. That case supports the point that the challenger carries real burdens under the statute.

A more recent case that matters for ordinance drafting and administration is *JS Beck Rd LLC v Charter Township of Northville*. It is not about data centers, but it is very relevant to any use you place under special land use review. The Court of Appeals held that the planning commission had to adequately articulate the basis for denial and comply with MCL 125.3502(4) by incorporating findings or conclusions supporting the decision. So if a township uses special land use review for data centers, the ordinance should contain clear standards, and the township must make specific factual findings when approving or denying an application.

There's no Michigan case yet that deals specifically with data centers that I'm aware of, but the law we'd be operating under is already well established. Michigan courts have made it clear, most notably in *Kyser v Kasson Township*, that a township can't completely prohibit a legitimate land use if there's a demonstrated need for it, but it can control where and how that use occurs. The statute that governs this, MCL 125.3207, is really the guardrail. The practical takeaway is that we don't try to ban something outright; we define it as a specific use, limit it to a narrow zoning district, and require special land-use approval with clear standards. Courts have consistently upheld that approach, as long as the township ties its decisions to real impacts like infrastructure capacity, noise, traffic, and public services, and makes clear findings if something is denied. In other words, the safest path isn't saying "no," it's saying "show us you won't overwhelm the township."



Bill Conklin <supervisorhayestownshipmi@gmail.com>

Checking back in with you

2 messages

Sheri McWhirter <[redacted]>
To: Bill Conklin <supervisorhayestownshipmi@gmail.com>

Fri, Mar 27, 2026 at 9:24 AM

Hi Bill,

I hope you are doing well and managed to dig out of that last blizzard OK. Here in Traverse City, we managed to get two full feet in our yard!

I wanted to follow up and find out if you have any update on members of the township's advisory committee on data center issues?

Thanks so much,

Sheri McWhirter

Environment reporter

MLive/Grand Rapids Press

[redacted]
[redacted] 5

Bill Conklin <supervisorhayestownshipmi@gmail.com>
To: Sheri McWhirter <[redacted]>

Fri, Mar 27, 2026 at 12:28 PM

Hello Sheri --

Yes, the Data Center Work Group has been formed. It is attached and was posted on the website. Mr. Curley decided it was best for the township if he declined to serve.

We had 30-36" in our yard and 4-5' drifts around the garage - oh my, but spring hopefully will appear soon.

All the best,

Bill Conklin
[Quoted text hidden]

Data-Center-Work-Group_Hayes Twp.docx
14K

[REDACTED]

[REDACTED]
[REDACTED]

[REDACTED]



Bill Conklin <supervisorhayestownshipmi@gmail.com>

data center work group support

3 messages

Roy Griffitts <rwgriffitts3@gmail.com>

Mon, Mar 23, 2026 at 9:37 AM

To: LuAnne Kozma <luannekozma@gmail.com>

Cc: Hayes Treasurer <treasurerhayestownshipmi@gmail.com>, Hayes supervisor <supervisorhayestownshipmi@gmail.com>

Good Morning LuAnne,

Following up on our previous email regarding the work group's membership, we would like to request your contribution to the process.

Given your demonstrated interest in data center actions in court and lawsuits on applications for data centers in other areas of the State, we could use your assistance in monitoring and reporting on these actions, specifically an analysis of what arguments were made by the two sides and the rationale for any legal decisions.

If you could provide a monthly analysis—or updates whenever significant actions occur—it would be greatly appreciated. I am happy to discuss this further if you have any questions.

Best Regards,

Roy Griffitts
Julies Collard

LuAnne Kozma <luannekozma@gmail.com>

Fri, Mar 27, 2026 at 1:18 PM

To: Roy Griffitts <rwgriffitts3@gmail.com>

Cc: Hayes Treasurer <treasurerhayestownshipmi@gmail.com>, Hayes supervisor <supervisorhayestownshipmi@gmail.com>

No, sorry, can't do that.

LuAnne

[Quoted text hidden]

Roy Griffitts <rwgriffitts3@gmail.com>

Mon, Mar 30, 2026 at 8:30 AM

To: LuAnne Kozma <luannekozma@gmail.com>

Cc: Hayes Treasurer <treasurerhayestownshipmi@gmail.com>, Hayes supervisor <supervisorhayestownshipmi@gmail.com>

Thank you for the reply.

[Quoted text hidden]

~~CONFIDENTIAL - SECURITY INFORMATION~~

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Bill Conklin <supervisorhayestownshipmi@gmail.com>

Addressing Rumors Regarding Data Center

3 messages

Roy Griffitts <rwgriffitts3@gmail.com>
To: Bill Conklin <supervisorhayestownshipmi@gmail.com>

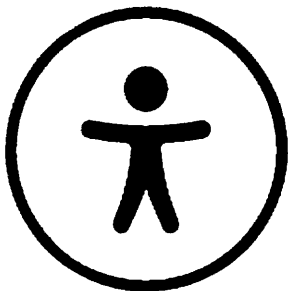
Wed, Apr 8, 2026 at 1:21 PM

FYI

https://www.emmetcounty.org/news_detail_T13_R220.php

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[Message clipped] [View entire message](#)

16 attachments



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5K

location.png
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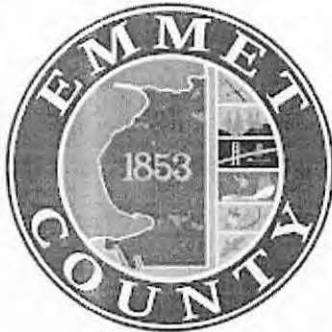
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Bill Conklin <supervisorhayestownshipmi@gmail.com>
o: Roy Griffitts <rwgriffitts3@gmail.com>

Wed, Apr 8, 2026 at 5:28 PM

Proposed Response -- basically took their information and tweaked it to fit us --

I think this is what I will read and have as a hand-out for 4/13 BOT -- what do you think?

0208

Bill

On Wed, Apr 8, 2026 at 1:21 PM Roy Griffitts <rwgriffitts3@gmail.com> wrote:
FYI

https://www.emmetcounty.org/news_detail_T13_R220.php

 **Data Centers_Address Rumors 4-13-26.docx**
17K

Roy Griffitts <rwgriffitts3@gmail.com>
To: Bill Conklin <supervisorhayestownshipmi@gmail.com>

Wed, Apr 8, 2026 at 5:30 PM

Looks reasonable to me. It can only help. I appreciate the support.

Roy
[Quoted text hidden]

DATA CENTER CLUSTERING

Impact on Regional Energy Costs

An Evidence-Based Analysis of How Data Center Concentration Drives
Electricity Rate Increases for Residential Consumers

Special Focus: Michigan

PROJECTED NATIONAL IMPACT BY 2030
8% Average Electricity Bill Increase Nationwide
25%+ Increase in High-Density Data Center Regions
350% Growth in Data Center Electricity Demand

How Data Center Clustering Drives Up Energy Costs

When data centers cluster in a region, they create unprecedented strain on local electricity infrastructure through multiple interconnected mechanisms:

- **Massive Infrastructure Upgrades Required**

A single 100-megawatt data center requires between **\$446.5 million and \$496 million** in utility infrastructure investments, including new power generation (\$400M) and transmission grid connections (\$46.5M-\$96M). These costs are typically passed to residential consumers through rate increases.

Source: Detroit News - Michigan Data Centers Could Hike Power Bill (2025) [QR3]

- **Grid Capacity Constraints**

Data center clusters consume 20-40% of regional electricity supply (e.g., Virginia: 26%, North Dakota: 15%, Nebraska: 12%). This concentration strains grid capacity, forcing utilities to invest in costly upgrades that cannot accommodate the surge without substantial infrastructure expansion requiring 5-10 years for completion.

Source: Pew Research Center - U.S. Data Centers' Energy Use (2025) [QR4]

- **Preferential Rate Agreements**

Data centers frequently negotiate confidential Power Purchase Agreements (PPAs) with lower bulk rates, while residential customers pay standard rates. This cost-shifting dynamic leaves communities bearing higher utility prices without reaping economic benefits. Many agreements remain confidential, preventing public scrutiny of cost allocation.

Source: Harvard Law School - How Data Centers May Lead to Higher Electricity Bills (2025) [QR5]

- **Fossil Fuel Plant Extensions**

Rapid data center growth prevents retirement of aging coal and gas plants. Over **25 GW of coal plants** scheduled for retirement will continue operating primarily to meet data center demand, increasing emissions and prolonging reliance on expensive, inefficient generation sources that drive up costs.

Source: Carnegie Mellon University - Electricity Grid Impacts Report (2025) [QR6]



QR3



QR4



QR5



QR6

MICHIGAN: Current Situation & Projected Impacts

Michigan is experiencing rapid data center expansion with multiple facilities under development in Washtenaw, Livingston, and Kent Counties. The University of Michigan's Ford School of Public Policy conducted comprehensive research on local impacts.

University of Michigan Ford School Study (July 2025)

- **Key Finding:** Data centers increase local utility costs passed to residential consumers while securing long-term power deals at preferential rates
- **Infrastructure Impact:** High energy consumption (up to 2 MWh - equivalent to 2,000 homes) strains local resources
- **Tax Revenue Loss:** Tax breaks reduce local revenues while shifting financial burdens to communities and schools
- **Climate Impact:** Data centers prolong fossil fuel plant operation, undermining Michigan's renewable energy goals

Source: U of M Ford School - What Happens When Data Centers Come to Town? (July 2025) [QR10]

Major Michigan Data Center Projects:

Location	Developer	Investment	Status
Ypsilanti Township (Washtenaw)	U of M / Los Alamos National Lab	\$1.25 billion	Planned
Saline Township (Washtenaw)	Related Digital	Not disclosed	Approved (after lawsuit)
Howell Township (Livingston)	Undisclosed	Not disclosed	Under review
Grand Rapids (Kent)	Switch / DigitalBridge	200 MW expansion	Operating + Expansion (2025)

Source: Planet Detroit - Michigan Data Centers Could Hike Power Bill (2025) [QR11]



QR10



QR11

Michigan Regulatory Response & Policy Context

Michigan policymakers and regulators are grappling with how to manage data center growth while protecting residential ratepayers. Recent legislative and regulatory actions include:

Public Act 207 of 2024 - Data Center Tax Exemptions

- Grants tax exemptions for data center equipment on brownfield sites through 2050-2065
- Requirements: \$250M minimum investment + 30 jobs at 150% regional median wage
- Criticism: 25-40 year exemptions exceed typical data center lifespan (15-20 years)
- Impact: Reduces state revenue while providing minimal employment benefits

Source: Michigan Legislature HB 4906 / Public Act 207 of 2024 [QR16]

Consumers Energy MPSC Proposal (February 2025)

- 15-year minimum contracts for data centers (critics say insufficient vs 30-year infrastructure costs)
- 80% minimum electricity usage requirement
- Early termination fees to protect against stranded costs
- Advocacy groups argue: scope too narrow to prevent cost-shifting to ratepayers

Source: Planet Detroit - Consumers Energy case analysis (October 2025) [QR17]

Clean Energy Compliance Concerns

Michigan's 2023 climate law mandates 60% renewable energy by 2035 and 100% clean energy by 2040. However, the law includes "off-ramp" provisions allowing continued fossil fuel generation if renewable capacity is insufficient. Advocacy groups warn that data center load growth could trigger these off-ramps, undermining state climate goals while increasing costs.

Source: Union of Concerned Scientists - Michigan Data Center Debate (July 2025) [QR18]



QR16



QR17



QR18

Study: Data center cost allocation and rate-setting analysis

Authors: Ari Peskoe (Director, Electricity Law Initiative), Eliza Martin

Date: 2025

Key Findings:

- Confidential utility contracts obscure true cost allocation
- Special data center rates not subject to public rate case proceedings
- Infrastructure costs often shifted to general ratepayer base
- Lack of transparency prevents verification of 'cost causation' principle
- Regulatory reform needed to protect residential consumers

Harvard Law Today Article **[QR21]**

Full Report via Floodlight News **[QR22]**



QR21



QR22

Analysis of how concentrated data center water consumption (135B gallons annually US-wide) can account for 25% of town consumption in cluster regions

Access: <https://www.aceee.org/sites/default/files/pdfs/Turning%20Data%20Centers%20into%20Grid%20and%20Regional%20Assets%20-%20Considerations%20and%20Recommendations%20for%20the%20Federal%20Government,%20State%20Policymakers,%20and%20Utility%20Regulators.pdf> [QR27]



QR27

Complete Reference List with QR Codes

All sources cited in this brochure (hyperlinks + QR code references):

QR1: <https://arxiv.org/html/2509.07218v2>

QR2: <https://www.visualcapitalist.com/map-network-powering-us-data-centers/>

QR3: <https://www.detroitnews.com/story/news/local/michigan/2025/10/19/appetite-for-data-centers-fuels-fear-of-high-electric-demand-rate-hikes/86203188007/>

QR4: <https://www.pewresearch.org/short-reads/2025/10/24/what-we-know-about-energy-use-at-us-data-centers-amid-the-ai-boom/>

QR5: <https://hls.harvard.edu/today/how-data-centers-may-lead-to-higher-electricity-bills/>

QR6:

https://energy.cmu.edu/_files/documents/electricity-grid-impacts-of-rising-demand-from-data-centers-and-cryptocurrency-mining-operations.pdf

QR7: <https://www.cmu.edu/work-that-matters/energy-innovation/data-center-growth-could-increase-electricity-bills>

QR8: <https://www.cnn.com/2025/11/14/climate/virginia-data-centers-ai-maryland-electricity-bill-increase>

QR9: <https://www.cmu.edu/work-that-matters/energy-innovation/data-center-growth-could-increase-electricity-bills>

QR10: <https://stpp.fordschool.umich.edu/sites/stpp/files/2025-07/stpp-data-centers-2025.pdf>

QR11: <https://planetdetroit.org/2025/10/data-centers-michigan-power-costs/>

QR12: <https://stpp.fordschool.umich.edu/sites/stpp/files/2025-07/stpp-data-centers-2025.pdf>

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QR14: <https://planetdetroit.org/2025/10/data-centers-michigan-power-costs/>

QR15: <https://planetdetroit.org/2025/10/data-centers-michigan-power-costs/>

QR16: <https://legislature.mi.gov/Bills/Bill?ObjectName=2023-HB-4906>

QR17: <https://planetdetroit.org/2025/10/data-centers-michigan-power-costs/>

QR18: <https://blog.ucs.org/lee-shaver/powering-the-future-why-michigans-data-center-debate-is-critical-for-clean-energy-and-your-wallet/>