



*Data Centers and AI Closely Linked to
Our Energy Future: The Impact on Your
Business*

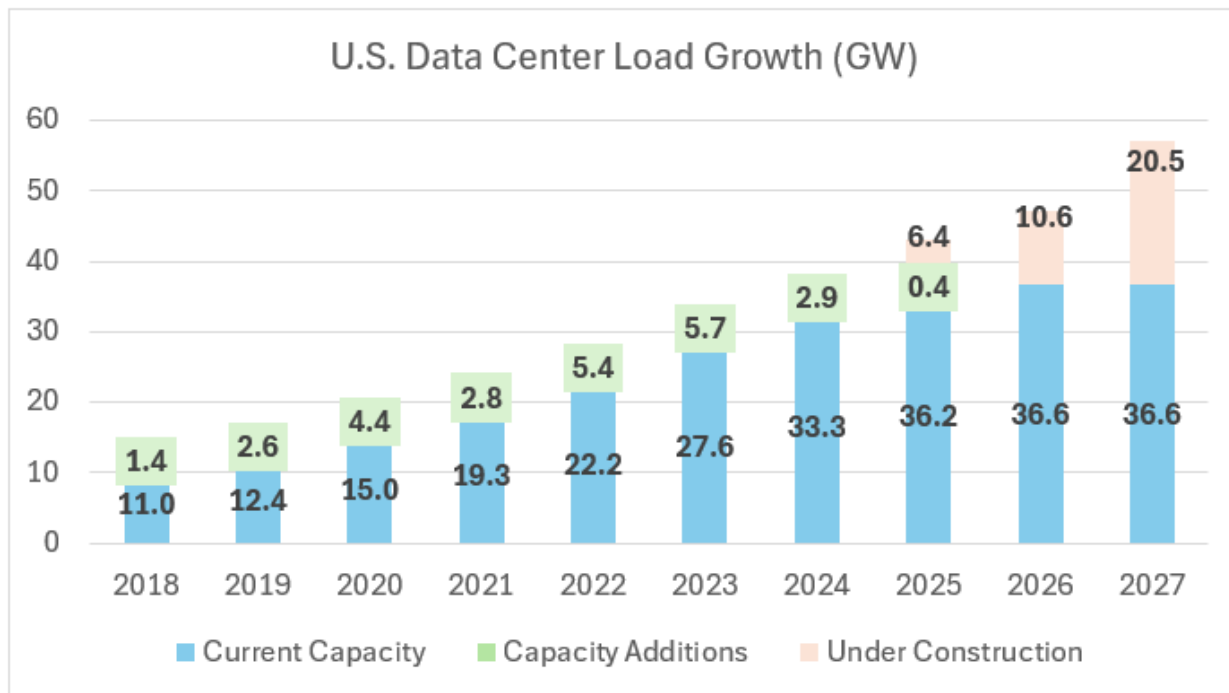
*Data Centers and AI Closely Linked to Our Energy Future: The
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*By Brendan Boyle, Director, Market Intelligence, [Transparent Energy](#), October
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Across the energy industry, there has been persistent dialogue focused on one recurring theme: the AI revolution is coming, and it will take an enormous amount of energy to support the movement. And that, in turn, could dramatically impact the energy budget of your company. According to the International Energy Agency, by 2030 the U.S. economy will consume **more electricity for processing data than producing all aluminum, steel, cement and chemicals combined**. A recent survey from Foundry revealed that machine learning and AI are the top technology initiatives in 2025 among CIOs, ahead of security, and data analytics. The volume and complexity of data being harnessed by generative AI models continues to increase exponentially, which requires more and more power.

Inside every data center are racks of servers which create immense amounts of heat as they process increasingly elaborate data sets. Running the servers and keeping them cool are the main drivers of electricity consumption for AI. It's nearly impossible to calculate just how much energy is involved in each AI interaction due to ever-evolving parameters and closely guarded industry secrets. We can say with certainty that power requirements continue to grow with each new iteration, and the demand curve is trending sharply upwards.





Source: Yes Energy LLC

Data centers are commonly clustered near each other to benefit from cloud interconnection, cooling capabilities, compliance, and security requirements. In 2024, the U.S. accounted for 45% of global data center electricity consumption globally, with most facilities concentrated in California, Texas, and the Mid-Atlantic states.

At the start of the decade, a typical data center would consume around 20-30 MW, or the equivalent of powering 25,000 homes. Today, the largest data centers under development are more than 250x that size in terms of power intensity. The growth in demand from data centers is projected to be the equivalent of powering 40 million new homes according to data from Morningstar Equity Research. The pace of innovation is happening quickly, and AI adoption is happening across industries.

When we think of Artificial Intelligence, the names Google, Meta, and Amazon often come to mind (tech majors are [spending billions](#) on AI), but the application of this innovative technology is nearly universal. Walmart deployed a hybrid cloud/edge AI system to analyze every purchase and customer interaction. Formula 1 teams are processing real-time vehicle performance data to help inform in-race decisions. Autonomous cars and industrial robots are taking in millions of data points and making instantaneous adjustments to optimize performance. Deloitte estimates that by 2026, more than 40% of all personal computers will be AI-enabled.

Again, that's a lot of new power demand. In response, utilities across the country are being forced to establish new tariffs and build out the infrastructure needed to meet anticipated expansion. The Trump administration is working to overhaul U.S. energy policy, slashing incentives for renewable energy projects, and removing hurdles to fossil fuel developments. The goal is to increase investment in natural gas-fired generation, keeping older coal plants operating, and supporting investment in new nuclear power plants. In addition to new generating capacity,



significant investment will be required in electric transmission infrastructure to upgrade grid capacity and reliability.

Tech giants are now treating energy as a fundamental asset. Commercial and industrial end-users should plan to act similarly. **If forecasts hold, electric demand is anticipated to outpace supply sometime in 2026 or 2027. This leaves price (\$ per kWh) as the primary mechanism to incentivize new generation and discourage energy consumption.** This means higher electricity prices for end-users across the country. Looking ahead, significant uncertainties remain; however, one thing that is clear is that the technology and energy sectors are intertwined more than ever before. Businesses can and must prepare for this rapid transformation, one that is unfolding on what seems a daily basis, by taking one simple step: **talk to an expert.**

How to Approach Energy Procurement Amid Unprecedented Growth?

As businesses develop their energy buying strategies, they should consider hybrid alternatives to all-in fixed prices, balancing factors such as seasonality and time-of-day rates, and *understanding all available terms and product structures*. It's also worth noting that the same AI technology that strains the grid could soon help your business utilize energy more efficiently in the future. And **it's imperative to make sure your energy contract allows for unforeseen operational changes without penalty.** Working with a Transparent Energy expert will allow you to apply these insights and develop your energy management strategy – and its *execution* -- for the AI age to safeguard your business and accomplish your near- and long-term goals.

