DATA CENTER CONTRACT STRUCTURE:
Who's Footing the Bill?

Miller/Howard supports initiatives devised to have data centers pay their own way.

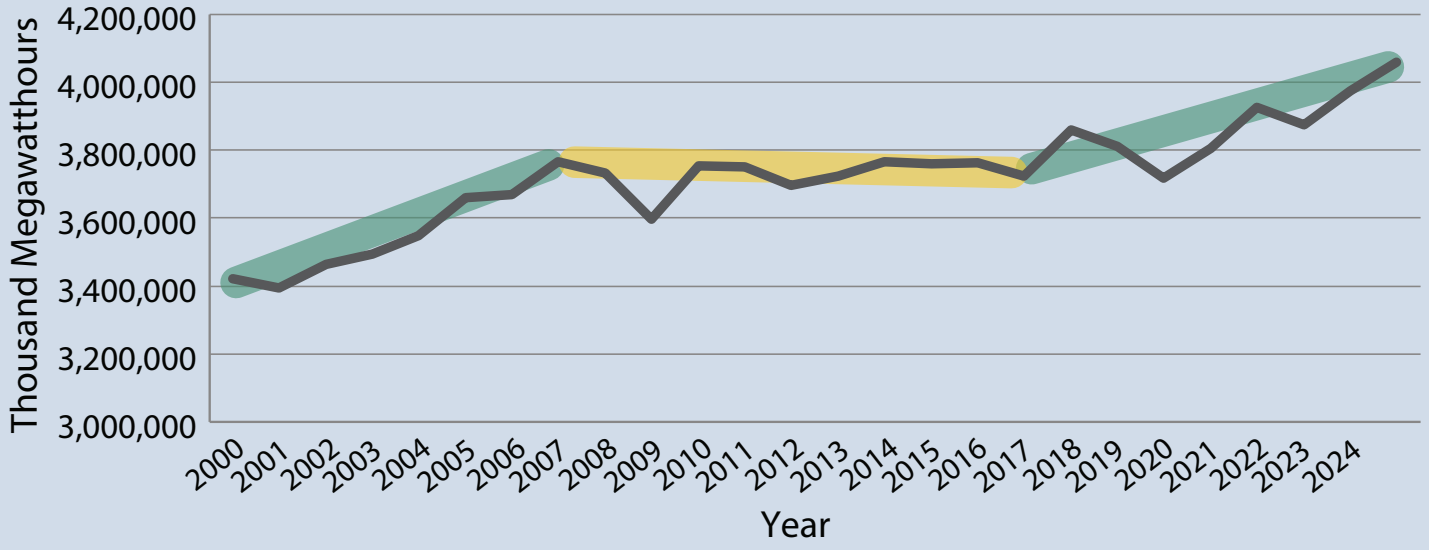
While approaches differ by utility market structure, we think there are real, attainable paths to accomplishing this objective.

AFTER PLATEAUING FOR ROUGHLY 10 years, US electricity demand has begun to inflect higher. Beginning in the late 90s, US electricity demand grew largely in step with the economy for 10 years before GDP and electricity use decoupled due to efficiency gains. Over the last five years, US electricity demand has returned to growth, recording a 1.8% compound annual growth rate (CAGR), driven in large part by AI and data center development. US Energy Information Administration (EIA) forecasts suggest demand growth could have a long runway, with its Annual Energy Outlook forecasting annual growth of over 1% through 2050. This forecast could prove conservative in the near term as many analysts are calling for much higher levels of annual growth through the end of the decade.

Electricity demand growth will necessitate a material buildout of the power grid, and Miller/Howard has not been shy in pointing out how this is a tailwind for utilities and midstream energy companies. However, as this buildout has attracted heightened media coverage, it has also attracted rising opposition to continued development.

US Electricity Demand Returned to Growth

US Total Retail Electricity Sales (2000-2025)



As of June 30, 2026. Sources: U.S. Energy Information Administration, Annual Energy Review, Table 8.9, "Electricity End Use" (1990-2011), continued as Monthly Energy Review, Table 7.6 (2012-2024). 2025 figure from EIA's electricity-in-the-US summary (energyexplained), preliminary/estimated pending finalization in Electric Power Annual 2025 (expected October 2026).

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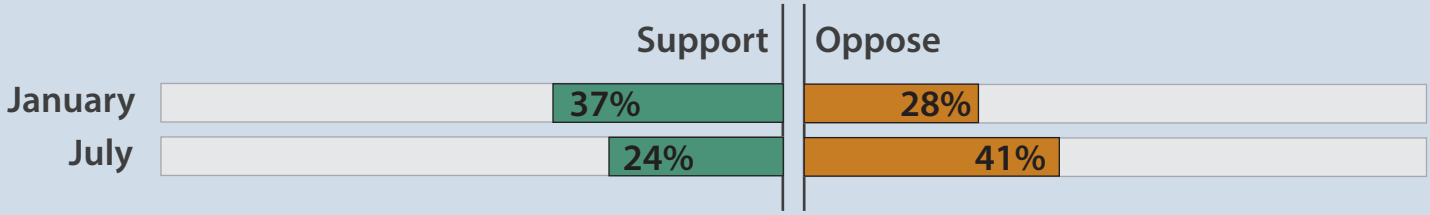
Miller/Howard INVESTMENTS

Share of American Adults Who Support or Oppose Building a Data Center within Three Miles of Where They Live



Those who said they would neither support or oppose a new data center being built in their local area, or who said they don't know, are not shown. The first wave of POLITICO Poll was conducted by Public First from Jan. 16 to Jan. 19, surveying 2,093 US adults online. Results were weighted by age, race, gender, geography and educational attainment. The overall margin of sampling error is ±2 percentage points. The second wave was conducted from July 12 to July 15, surveying 2,061 US adults online. The overall margining for error is ±2.16 percentage points. Smaller subgroups have higher margins of error. Numbers may not add to 100 percent due to rounding. Source: The POLITICO Poll with Public First.

Navigating Public Opinion

According to a POLITICO poll, support for building a data center within three miles of one's home has rapidly shifted over the first half of 2026. In January, 37% of adults supported new data center development while 28% opposed it (the remainder neither supported nor opposed). By July, support had dropped to 24% while opposition increased to 41%. While public opinion is based on many factors and concerns —including environmental and ethical considerations —the shift appears to be largely influenced by concerns that data center development will increase electricity costs.

The shift appears to be largely influenced by concerns that data center development will increase electricity costs. In a Pew Research poll,* in March 2026, three-quarters of US adults said their home energy costs have gone up in recent years, including 42% who say that costs have increased "a lot." Of those who said that their bills had gone up, 66% cited data centers using more energy as a contributing factor, with 43% suggesting it was a major issue. Given the partisan nature of most issues in the US, it is interesting to note that a similar share of both parties said data centers using more electricity was a driver behind bill pressure.

The shift in sentiment is unsurprising given the failure to adequately explain the associated opportunities and risks to the public. The potential benefits for local communities from data center development may include increased economic activity, infrastructure development, and tax revenue. Initial data center construction can provide a boost to the region due to the significant construction activity. These temporary jobs are then replaced by a smaller number of permanent jobs. The community may continue to benefit from additional property tax revenue (and a low cost-to-revenue ratio), which in some cases, can even be used to lower residents' property tax (as seen in Loudoun County, Virginia). Data centers have also tried to ingratiate themselves with the community through gestures like providing the local fire departments with new equipment. All of this may be particularly attractive in under-invested service areas that are unable to compete for manufacturing or other high-employment developments.

*"Many Americans hold utility companies responsible for their rising home energy bills" Pew Research Center article, dated May 6, 2026, based on a survey conducted March 16-22, 2026 among 3,524 US adults. Pew Research's website: Short-reads; Many Americans Hold Utilities Companies Responsible for their Rising Home Energy Bills.

Utilities See Both Opportunities and Risks

As one utility explained to us, "Data centers have changed the game." The characteristics of these developments are different than the large loads utilities have dealt with in the past and carry with them new risks. The sheer scale of new developments often necessitates new infrastructure. Proper planning and the correct sizing of this infrastructure is crucial for system reliability. The long-term power demands of data centers are also more uncertain than traditional large loads because they layer on the changing nature of technology to standard business risks. AI adoption rates, efficiency gains or losses, equipment replacement cycles, and the relative mobility of AI operations (vs. manufacturing) could all have material implications for the demand for the data centers within a utility's jurisdiction.

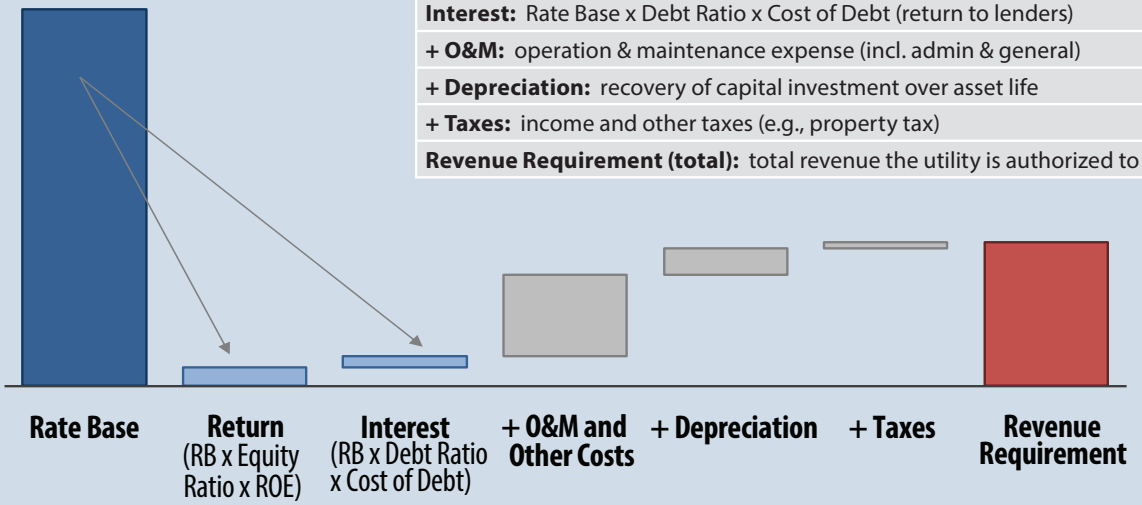
Key among these stated opportunities and risks is the impact on customer bills. Reports that data center development has driven customer bills higher AND lower correctly highlight the incredible complexity of the issue. The core tension comes down to whether the data center pays for the infrastructure or if some of the costs slip into other customers' bills. The ultimate impact a data center has on the region's electricity costs and its consumers is dependent on the market and contract structure.

Regulated Utilities

Traditionally, US utilities operate within a regulated business model. Since utilities are granted monopolies, their capital structure and returns are regulated through a cost-of-service (COS) model to prevent them from earning excessive returns. Within this structure, a utility can earn an allowed return on the equity portion of its rate base which can simplistically be thought of as the capital deployed. The utility can add its expenses (COS) to this return to derive its revenue requirement. The revenue requirement is then allocated across customers based on cost causation to determine their respective rates.

Regulated Utilities' Cost-of-Service Revenue Requirement Build Up

Rate base (RB): utility's net investment in plant used to serve customers
Return: Rate Base x Equity Ratio x allowed ROE (return to shareholders)
Interest: Rate Base x Debt Ratio x Cost of Debt (return to lenders)
+ O&M: operation & maintenance expense (incl. admin & general)
+ Depreciation: recovery of capital investment over asset life
+ Taxes: income and other taxes (e.g., property tax)
Revenue Requirement (total): total revenue the utility is authorized to collect



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In a COS model, each customer class (e.g. residential, commercial, industrial) is expected to pay for its costs and allowed return leading to different pricing between consumer classes. This is somewhat intuitive when one considers that a utility's cost to serve can vary between customers, and it can often cost less to service large industrial customers per kilowatt hour (kWh) due to a more constant load, fewer customer costs, and the ability to take power at a higher voltage. Utilities also have the ability to sign special contracts with customers that set unique parameters. While this provides increased latitude, the contracts should follow the principles of the COS model and, generally, need to be approved by the public utility commission (PUC).

In theory, no consumer class should be subsidizing another class, whether it is through special contracts or more traditional rate making. Critics often argue that, in practice, this is not always the case, and at times, can be driven by special contracts that are not appropriately vetted by the public utility commission.

The addition of a data center into a regulated market can have a positive or negative impact on customer bills. Data centers can lower prices for other consumers if additional infrastructure (e.g. generation, transmission, etc.) is not required or if the development is structured to more-than-cover fixed costs. When additional infrastructure is not required due to spare capacity within the system, fixed costs (within the revenue requirement) can be spread over a larger denominator, thus decreasing rates. If additional infrastructure is required, data centers can still lower customer bills if they cover all their variable costs and are a net payer into the fixed cost base.

When data centers increase prices for other customers, the explanation is simple. If a data center necessitates additional infrastructure and the cost of service does not cover these additional costs, the costs bleed into other consumer groups.

Given the range of possible outcomes and rising levels of opposition to development, an increasing emphasis has, rightfully, been placed on creating the proper structure for data center developments. Utilities across the country have worked to develop large load structures (typically for anything over 75-100 megawatt/MW) that can be implemented for future development. The structures are often developed at the jurisdictional level resulting in many variations across the country. That said, the structures are coalescing around several key components:

- **Cost allocation:** Costs associated with the generation/transmission built for the data center are directly assigned to the data center versus spread across the general rate base. In some cases, incremental costs need to be paid for upfront.
- **Long-term contracts:** Contracts are often 10 to 20 years, covering a material portion of the asset life of required infrastructure.
- **Minimum revenue requirements:** Structured like midstream energy take-or-pay contracts in which the customer must pay for a high percentage of capacity whether it is used or not. Some utilities have disclosed revenue requirements of 80% or more of the contracted capacity.
- **Exit fees:** Penalties for early termination of a contract.
- **Collateral commitments or credit requirements:** Utilities are requiring minimum credit ratings and/or posted collateral. This is thought to protect the integrity of the cost allocation, minimum revenue requirement, and exit fee policies.
- **Additional protections:** Other provisions are often aimed at the same goals. Customer class protection charges provide an opportunity for the utility to run an analysis on the COS with and without the large loads in future rate cases. If costs have shifted over time, a charge can be added to eliminate this creep. Customer affordability charges are also being implemented that will go towards lowering the bills of residential customers.

Conceptually, these components aim to allocate all incremental costs to the data centers, while insulating existing customers from the increased risk profiles of these loads. More specifically, this means protecting customers from future demand changes and stranded-asset risk (e.g. canceled project or contract). Within these structures, residential customers stand to benefit from the costs of existing infrastructure being spread across a larger base. Data centers' ability to play a constructive role in mitigating bill pressure has largely remained outside media attention.

Competitive Markets

In the 1990s, legislation opened the door for electricity generation to be operated in a competitive market environment. In competitive wholesale markets, generation can be owned by independent power producers (IPPs) who do not operate under the same regulated business model that we just discussed. In these markets, generation facilities sell their electricity into competitive power markets which are generally overseen by Independent System Operators (ISOs) or Regional Transmission Organizations (RTOs). The ISO/RTO secures the electricity required to meet demand, matching orders from the lowest- to highest-priced seller. Generators then receive the market clearing price, which is the last, most expensive bid. In some markets, generators also participate in capacity markets which are geared to ensure long-term grid reliability by securing the appropriate amount of power needed to meet projected demand in the future. Capacity revenues are then paid to generators in return for having electricity available when needed.

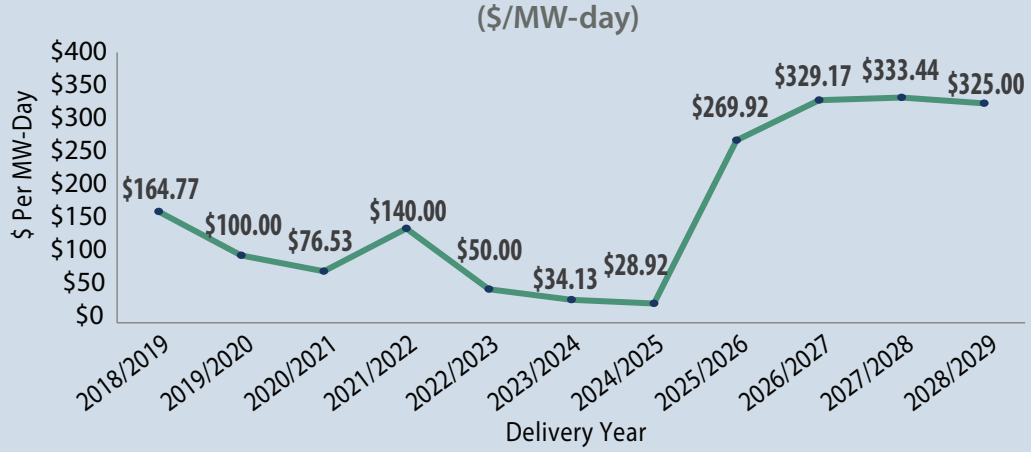
Utilities that provide transmission and distribution (T&D) services (i.e. the wires) in competitive wholesale markets still operate within a regulated COS model. The electricity costs from the competitive wholesale market are passed through to consumers without the regulated utility earning a return on power procurement.

Data center development within competitive wholesale markets has – perhaps counterintuitively —proven to be a more complex riddle to solve. Unlike vertically integrated regulated markets where data center developments have had both positive and negative impacts on bill pressure, data center developments within competitive wholesale markets (like PJM) have generally put upward pressure on bills. A key reason for the discrepancy is that in competitive wholesale markets, demand can be added without corresponding supply. This contrasts with regulated markets that typically have more centralized planning that coordinates the addition of supply and demand. In a scenario where a data center is added to a competitive market without a corresponding increase in supply, the incremental demand puts upward pressure on pricing in both the real-time and capacity markets. This is particularly true as excess capacity dissipates in a tight market, and the ISO/RTO has to rely on progressively more expensive generation. Since electricity prices are passed through to consumers from the regulated T&D utility, the price increase impacts every customer in the zone.

This dynamic is arguably most apparent within PJM*, the largest RTO in the United States. PJM's Independent Market Monitor has pointed to data centers for the increase in wholesale electricity prices and stated, "Load growth from data centers is already increasing scarcity in the energy market." In 2025, energy prices increased over 50% from 2024. This trend has continued into 2026 with energy costs for the 1H26 increasing nearly 50% over 1H25.

The move in PJM capacity market prices has been even more pronounced. PJM's capacity price went from $28.92/MW-day for the 2024/2025 delivery

PJM RTO Capacity Auction Clearing Price



As of September 30, 2026. Sources: PJM Interconnection Base Residual Auction press releases and reports. Note: 2025/2026 through 2028/2029 delivery years were subject to a FERC-approved price cap/floor (the 'Agreement VRR curve'), which held prices below what an unconstrained auction would have produced.

*The PJM Interconnection serves 13 states and the District of Columbia (Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia and West Virginia).

year to $269.92 in 2025/2026. PJM's independent market monitor attributed 63% of the price increase to data center load growth. Subsequently, capacity prices hit the price cap for the next three delivery years at $329, $333, and $325, respectively. Capacity prices represent a roughly tenfold increase from 2024/2025.

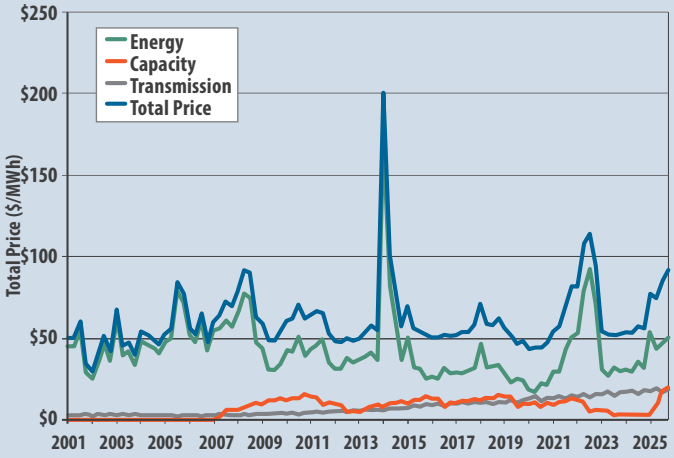
Given their meteoric rise, it is somewhat unsurprising that the monthly cost of capacity exceeded the monthly cost of transmission in 2H25 for the first time since 2019. PJM wholesale power costs were roughly 55% energy costs, 22% capacity costs, and 21% transmission costs. As energy prices rose in 2026 and capacity prices stayed relatively consistent, PJM wholesale power costs shifted to roughly 64% energy costs, 17% capacity costs, and 17% transmission costs. Despite the recent increases, it is worth noting that energy costs were relatively flat over the last 25 years. Over this longer period, transmission and capacity prices have seen the most notable increases.

Pricing is starting to send a signal that more supply is needed. However, that signal is relatively short-dated to a developer looking to underwrite a 20- or 30-year investment in new generation. The less certain cash flow profile inherent in competitive markets (vs. the regulated model) requires new projects to clear a high bar. This bar is made higher still when political intervention amid price spikes further obscures revenue certainty (e.g. capacity price being capped). It is worth noting that IPPs have gone out of business in the past, and there is likely a certain amount of scar tissue and hesitancy remaining from adding supply in past booms.

Supply bottlenecks for dispatchable energy further complicate getting incremental generation across the finish line. Lead times for gas turbines continue to lengthen, with combined-cycle gas turbines sold out through 2030. Projects securing equipment today likely won't see power deployment for roughly five years (development in regulated markets faces the same obstacle). This also creates a dynamic in which even if a developer thought capacity prices justified a new build, it likely would be unable to complete the project until after the auction year (typically three years forward in PJM). As PJM noted in its Powering Reliability Through Market Design report, "The market's forward signal and the physical reality of construction are no longer aligned." IPPs and data centers can enter into bilateral agreements through the grid, although these have also been hampered by interconnection queues and turbine constraints. Particularly frustrating is the fact that proposed new builds with long-term contracted generation were often stuck behind more speculative proposals in the interconnection queue that never got built. PJM has tried to address this issue with its 2026 queue reform. The study process itself is now expected to take one to two years to complete, a significant reduction from the pre-reform wait time.

To the extent that new generation can be built, energy prices should be pushed lower, which would benefit all customers. If new load with matching generation is brought into the market, it can also serve to put downward pressure on consumer prices. Up until now, our analysis has focused on the wholesale power market. However, this doesn't include distribution costs which can make up a roughly one-third of residential customer bills. Similarly to regulated markets, if consumers are not burdened by incremental energy costs, then the fixed costs related to shared infrastructure in the system can be spread across a larger base. In this way, data centers also have an ability to play a constructive role in mitigating bill pressure in competitive markets.

PJM Transmission and Capacity Prices Have Seen Notable Increases



Based on the 2025 "State of the Market Report for PJM" by Monitoring Analytics (the independent market monitor for PJM), dated March 12, 2026. Based on the contributions of the energy, capacity, and transmission service components of the total cost of wholesale power in the PJM Interconnection for each quarter since 2001.

Behind the Meter

Another key variable in structuring data center development revolves around grid interconnection architecture. Behind the meter (BTM) provides another option for servicing load outside of simply adding generation directly to the grid (within a regulated or competitive market, as discussed in previous sections). At the highest level, BTM refers to generation that is connected to a large load on the customer's side of the utility meter. This means that the generation can deliver power to the customer without using the transmission system. BTM generation is, therefore, inherently co-located, meaning it is physically adjacent or on-site. The reverse is not always true. Generation can be co-located without being BTM if it is separately metered. While often used interchangeably, some RTOs have more specific and technical definitions of BTM and colocation. BTM generation can take two main forms: connected to the grid and islanded.

BTM generation that is connected to the grid shares many of the same characteristics we discussed within the competitive market section. If new generation is added BTM, the development could theoretically put upward or downward pressure on energy prices in competitive wholesale markets depending on the sizing of the generation versus the sizing of the load. In scenarios where existing generation was pulled BTM, it would put upward pressure on energy prices due to an increase in demand without a corresponding increase in supply. With that said, RTOs are trying to finalize the regulatory structure for BTM load, and its resolution will have implications for shared infrastructure and bill pressure.

"Islanded" BTM generation simply means that there is no connection to the grid. Building off grid allows the developer to sidestep interconnection queues and much of the RTO regulatory uncertainty (although they remain exposed to the same bottlenecks in obtaining gas turbines). It can also be used as a bridge solution until the load can be connected to the grid. The key drawback is resilience. Downtime is problematic for data centers, which is a major reason why most hyperscalers prefer to have a grid connection for backup. Operating without this backup requires overbuilding capacity so they can retain reliability during maintenance and unplanned outages. If new generation is built for a new islanded load, there is no impact on bills. However, if existing generation is pulled off the grid to service an islanded load, the reduction in supply to the grid will put upward pressure on competitive wholesale prices.

Policy Initiatives

The need to address development structure is readily acknowledged. Nowhere has this been more publicly and explicitly stated than in the Rate Payer Protection Pledge. In March, the White House called on hyperscalers "to build, bring, or buy all of the energy needed for building and operating data centers, paying the full cost of their energy and infrastructure, no matter what." While more symbolic—utility policy is generally enforced at the PUC, state, RTO, or FERC level—seven leading technology companies initially accepted the terms.

More applicably, many of the large load tariff structures being formed are philosophically aligned with the agreement. Much of the recent regulatory decisions and those still in progress are almost universally geared toward ensuring reliability and protecting consumers. Key items to watch going forward are FERC co-location, Connect and Manage/IRAS, and the Reliability Backstop Procurement (RBP).

- **FERC's co-location** proceeding aims to solidify how generation paired with large loads is treated. In early 2025, the FERC opened a proceeding questioning whether PJM's tariff was just and reasonable in relation to co-location (versus selling purely into the wholesale market). FERC ultimately determined the tariff lacked clear and consistent rules and ordered PJM to fix it. The key issue is around the treatment of netting. The proceeding seeks to determine to what degree co-located generation can be used to offset or net out the load to ultimately determine the load's capacity obligation and how much the load must pay for transmission service. Friction occurs because making the data center pay based on the gross load may be punitive, while not paying for any transmission puts additional costs onto other consumers. The structural fight also has implications for RTO reliability and service. While we have focused on PJM for illustrative purposes, there are similar tracks advancing in other jurisdictions (ERCOT in Texas) that also aim to address these issues.
- **Interim Resource Adequacy Service (IRAS)** is a mechanism PJM is trying to implement to help discourage load from being added to the grid without corresponding generation. Starting June 1, 2027, large loads that don't bring their own new capacity will be served on

a non-firm basis meaning they will be the first to be curtailed in the event of an emergency. The mechanism adds real risk to the easy path of a load simply connecting into the grid without generation. IRAS load for beyond the 2028/2029 auction period will be excluded from future base auctions which should put downward pressure on capacity prices. The order is still pending FERC approval. Again, while we have focused on PJM for illustrative purposes, there are similar tracks advancing in other jurisdictions.

- **The Reliability Backstop Procurement (RBP)** is a one-time, transitional mechanism—not a permanent solution —designed to address the resource adequacy shortfall from the 2028/2029 capacity auction. Bilateral agreements are encouraged during the process and would be used to reduce the 6.8 GW target. Unlike standard capacity auctions that are for delivery within a single year, the RBP offers contracts for up to 15 years providing the required revenue certainty we previously discussed. However, the auction has a $555/MW-day limit that critics have pointed out is below the cost of new builds. Recently, the FERC found parts of the filing just and reasonable with other parts needing to be addressed. The RBP has been delayed by five months until the end of February 2027.

Procedural friction is no friend to the underlying supply-demand imbalance, which seems more likely to get worse with time unless adequately addressed. To the extent that these issues linger without resolution, we expect data center development to become clustered in areas that have less regulatory uncertainty and are more receptive to development.

Where To Go from Here

Data centers have changed the game, stressing existing systems and structures and, at times, creating some less-than-desirable outcomes. Yet the truth about consumer electricity bills is more complex and nuanced than the court of public opinion suggests. As we have discussed, development can also provide the opportunity to participate in a number of benefits. We feel that the rise of proposed development moratoriums, which can allow time for studying the impacts, may risk ceding the United States' leadership position in AI development. Instead, we argue in favor of responsible development and cost structuring.

Miller/Howard supports initiatives devised to have data centers pay their own way, and we think there are real, attainable paths to accomplishing this objective. In regulated utility markets, this includes large load structures that identify cost causation and stranded asset risk. In competitive wholesale markets, regulatory clarity would go a long way toward ultimately providing the required generation. New builds require creating a durable investment signal, potentially accomplished through prioritizing load bringing its own long-term contracted supply. Speeding up the interconnection queue would also help alleviate the timing differences of new demand and supply. Off-grid BTM generation could provide a final solution for responsible growth.

Our recent conversations lead us to believe that most utilities and stakeholders are trying—in earnest—to protect other rate payers. We remain optimistic the industry can and will find the necessary solutions to enable development while protecting utility customers.

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