

GIBSON DUNN



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## FERC Technical Conference Puts Challenges of Powering Data Centers at Center Stage

Federal and state regulators, utilities, generators, and data center developers convened to take on regulatory and technical obstacles to providing electricity to the expanding data center customer class.

Consistent with Gibson Dunn's focus on all aspects of the data center sector, please find a comprehensive summary of the Federal Energy Regulatory Commission's Technical Conference held last Friday. As described in more detail below, the conversations at the technical conference reflect that federal and state regulators, local utilities, grid operators, data centers, and large generators who would like to serve data centers have much work to do and many questions to answer as they navigate the expansion of the U.S. data center industry. Key issues identified for the energy and data center industries and their regulators to work to address include:

- Developing accurate energy demand forecasts to facilitate planning for generation and transmission infrastructure to serve the growing need for electricity to serve data centers;
- Ensuring there are adequate generation resources to serve both existing retail electricity customers and the expanding energy needs of data centers;
- Modernizing electricity market rules to ensure that energy customers, including data centers taking generation service directly from co-located generation, pay for the grid services that are necessary to deliver their electricity, and that there are appropriate

market mechanisms to incent generation facilities to come online when needed and stay online in the long term;

- Reforming the transmission planning and interconnection processes to more quickly and efficiently add new generation to the grid; and
- Which regulatory tools are appropriately available to state versus federal regulators as they monitor and oversee grid expansion, including what policy modifications regulators may make related to data center expansion.

On Friday, November 1, 2024, the Federal Energy Regulatory Commission (FERC) convened a commissioner-led technical [conference](#) on co-location of large energy users including data centers (referred to as “loads” in the electricity business) alongside power generating facilities. The impetus for this technical conference was the recent advent of data centers seeking to partner with large continuously operating power generators to directly supply data centers’ electricity needs, specifically embodied by a recent proposal by Talen Energy and PJM Interconnection (PJM) to employ 180 megawatts (MW) of an existing nuclear generator in Pennsylvania to directly serve a data center that would be located next to the nuclear power generating facility. Because FERC’s *ex parte* rules prevent FERC’s commissioners from speaking to stakeholders or the public about that specific proposal outside of that formal proceeding, the technical conference did not directly address the Talen Energy proposal and its related FERC filing by PJM. FERC instead convened this technical conference to discuss in a more general forum issues and policies related to the co-location of large loads including data centers at generating facilities.

The conference opened with FERC Chairman Willie Phillips acknowledging that two seemingly contradictory things can be true at once: data center growth and innovation is good for business and society, while that same innovation demands unprecedented amounts of electric energy, the need for which poses an unprecedented challenge to the U.S. electric grid. As data center developers continue to explore co-locating large loads including data centers at existing generating facilities, FERC’s members’ questions and statements at the conference suggest the agency wants to rise to the moment and address the issues, but currently lacks sufficient information and requires its many stakeholders, including state regulators, to educate and inform FERC of the interplay of issues, collaborate with FERC, and play their appropriate roles to accommodate data center expansion while continuing to serve existing retail customers reliably and at a reasonable cost. In furtherance of that need for collaboration, FERC gathered industry leaders and state government authorities to name the challenges, the players, and the potential roads ahead.

Chairman Phillips opened by framing data centers, artificial intelligence, and other information-related technologies as national resources with multi-generational significance, deserving nationwide stewardship and active coordination between FERC and state regulators. He highlighted the opportunity to keep data centers as a critical economic sector onshore, citing the 2020 CHIPS for America Act to emphasize the requisite cost and focus that onshoring requires. Offshoring, he warned, would invite national security concerns and economic stagnation alike. Chairman Phillips’s remarks closely echoed a recent [memorandum](#) from the

White House aimed at advancing the nation's commitment to leadership in artificial intelligence as a national security issue.

The rest of the commissioners provided their own opening remarks providing additional framing. Commissioner Mark Christie flagged concerns with grid reliability impacts of data center co-location, resource adequacy impacts, and rate fairness for all consumers. Commissioner David Rosner emphasized optimism on the issue, lauding opportunities to unlock efficiencies of the nation's infrastructure, get ahead, and get new rules right on co-location issues that fall within FERC's jurisdiction. Commissioner Lindsay See shared that she anticipates leveraging the panelists' expertise to untangle FERC and state jurisdictional issues. And Commissioner Judy Chang previewed questions about the impacts of a co-located load on the transmission system, and FERC's tools to ensure grid reliability, address rapid load demands, and respond to challenges of the existing tight reserve margin. The Commissioners and invited speakers from the industry and state government then explored these issues across three panel discussions led in turns by the five FERC commissioners.

**Panel 1 – Overview of Large Co-Located Load Issues.** Panelists included:

- **Howard Gugel**, Vice President Regulatory Oversight, North American Electric Reliability Corporation (NERC) | [Statement](#)
- **Stu Bresler**, EVP, Market Services and Strategy, PJM Interconnection, L.L.C. | [Statement](#)
- **Aubrey Johnson**, Vice-President, System & Resource Planning, Midcontinent Independent System Operator | [Statement](#)
- **Zachary G. Smith**, Senior Vice President, System & Resource Planning, New York Independent System Operator
- **Jason Davis**, Manager, Services Integration, Southwest Power Pool
- **Aaron Tinjum**, Director, Energy Policy and Regulatory Affairs, Data Center Coalition | [Statement](#)
- **Mike Kormos**, Independent Consultant | [Presentation](#) | [Graphics Slide](#)
- **Kent Chandler**, Resident Senior Fellow, R Street Institute | [Statement](#)
- **Vincent Duane**, Principal, Copper Monarch LLC | [Statement](#) | [Presentation](#)
- **Stacey Burbure**, Vice President, FERC and RTO Strategy and Policy, American Electric Power | [Statement](#)

The first panel of industry leaders including regional transmission organization (RTO) representatives summarized large load and generator co-location pressure points and alternatives. Although the discussion often focused on generation provided by large nuclear facilities, various speakers acknowledged that other types of generation have been co-located with load over the years and that natural gas-fired generators might serve as another appropriate power source for co-location projects. For their part, commissioners focused on challenges and

opportunities, including how each industry participant might adequately model and prepare for new large loads.

Representatives from RTOs and independent system operators (ISOs)—the nation's transmission grid and market operators—addressed issues related to forecasting large load demands and impacts. They emphasized the importance of communication and transparency to maximize equity and efficiency. For example, Zachary Smith of the New York Independent System Operator (NYISO) described how the NYISO engages all known, New York-based data center and crypto currency mining developers to understand where they anticipate increased energy needs to assist with state load forecasts. Aubrey Johnson of the Midcontinent Independent System Operator (MISO) described how MISO attempts to take on load planning at three levels—creating long-range transmission planning scenarios; conducting annual forecasting surveys; and understanding realities in consumer contract negotiations. Many panelists expressed concern regarding the adequacy and accuracy of transmission owners' forecasting. Due in part to the rapid pace of growth and expansion, data center and crypto currency mining operations often report their loads to more than one RTO or ISO, creating a risk of duplicate counting.

The large loads' magnitude is not their only risk, explained Howard Gugel of NERC. Unique characteristics of each load and co-location matter, too. According to Mr. Gugel, current models are inadequate to account for potential grid interruptions created by co-locating load and generation behind a utility meter. While not every method of co-location would take energy or services from the grid, panelists appeared to be in alignment that most will. Panelists further emphasized that, whatever the magnitude of the load forecast, connecting new large loads to the grid will require infrastructure that does not yet exist, and that without coordinated preparation, reliability and efficiency could be compromised.

Panelists agreed that co-location of new large loads presents novel, fact-specific issues. Commissioner Christie presented various scenarios and asked panelists to opine on rate and cost impacts. Among those scenarios, Commissioner Christie offered by way of example a data center arranging for a previously retired generating unit to return to the grid (such as will be the case for the recently announced Crane Clean Energy Center revamp of Three Mile Island's Unit 1 nuclear reactor), versus co-locating a large load behind the meter with an existing operating generating unit, which would effectively remove that generator from general grid participation. Most panelists agreed that merely matching supply and demand was not their greatest concern and was almost certainly feasible in the long term. Instead, they emphasized issues related to how co-located load would secure backup generation for critical operations relevant to national defense if their committed generator goes down for any reason, and what impact that might have on the grid and its service to other customers.

The panel emphasized customer advantages of co-location. Mike Kormos, an independent consultant and former Executive Vice President and Chief Operating Officer of PJM, emphasized customer agency, stating that co-location permits customers to make choices and take risks regarding generation sufficiency, monetizing a voluntary load-shedding and distribution scenario. Mr. Kormos emphasized that a behind-the-meter load configuration might use significantly fewer grid services in certain configurations, especially if the parties involved are content to forego profit on surplus energy. Kent Chandler, a former chair of the Kentucky Public Service Commission,

added that these new dynamics require addressing cost allocation and rate design alike. Mr. Chandler encouraged commissioners to seize an opportunity to shepherd improved rate design, seizing on improved metering technologies and minimizing inefficient cost bypass.

Commissioner See probed potential balancing between uniformity and innovation. She asked how FERC should think about optimal uniformity and variety for general guidance. MISO's Aubrey Johnson explained that each data center will be unique as a snowflake (a theme many other speakers would come back to throughout the day), counseling either narrowly tailored or broad, moldable FERC rules for justiciability's sake.

Similarly, Commissioner Chang asked about balancing co-location's short- and long-term concerns. Zachary Smith of NYISO countered that variance will be more than temporal. FERC will need to balance regional variation with consistent national structures, and how to support interconnectivity amidst those dynamics. In the short term, Mr. Smith suggested that FERC could clarify the load interconnection process itself, calling for consistency across RTOs and ISOs. For the long term, Mr. Smith raised concerns about the supply mix, grid reliability and adequacy, and impacts of today's informal, makeshift processes.

Commissioner Chang asked whether prior experience with co-generation can inform this new era. Panelist Howard Gugel of NERC answered: history's utility is limited because today's data centers work with unprecedented pace and energy demands. Connecting some new large loads to the grid could impact broader systems immediately. Data centers' cyber security concerns are unprecedented, too, and must be managed in new ways.

**Panel 2: Exploration of Issues Presented by Large Co-Located Loads.** Panelists included:

- **Joseph Bowring**, Independent Market Monitor for PJM
- **Pallas LeeVanSchaick**, Vice President, Potomac Economics
- **Karen Onaran**, President & CEO, Electricity Consumers Resource Council
- **Brian George**, US Federal Lead, Global Energy Market Development, Google
- **Kyle Hannah**, Director, Electric Transmission Strategic Initiatives, Dominion Energy [Statement](#)
- **Dave Weaver**, Vice President of Transmission Strategy, Exelon Utilities [Comments and Appendix](#)
- **Mason Emmett**, SVP, Public Policy, Constellation
- **Cole Muller**, Executive Vice President, Strategic Ventures, Talen Energy Corporation | [Statement](#)
- **J. Arnold Quinn**, Senior Vice President, Regulatory Policy, Vistra
- **Marjorie Rosenbluth Philips**, Sr. VP, Wholesale Market Policy, LS Power Development, LLC

The second panel addressed the development and operation of co-location of large loads at generating facilities. Panelists represented a cross-section of the electric industry, including

competitive power generators (Talen Energy, LS Power, Constellation), regulated utilities (Dominion and Exelon), market monitors (PJM IMM and Potomac Economics), advocates for large energy consumers (ELCON), and an industry participant.

The commissioners probed national security, economic development, reliability, cost allocation, and market efficiency issues. Commissioner Phillips and many panelists pointed to national security concerns associated with slow development, focusing on the need to act swiftly, while appreciating broader economic development opportunities.

Commissioners Rosner, See, and Chang requested input on how FERC should regulate both co-located behind-the-meter and grid-connected configurations, while addressing cost allocation, market improvements, and reliability. In response, many panelists requested clarity on state regulator versus FERC jurisdictional authority, while others sought better methods for transmitting price signals across markets. For its part, the data center industry market participant's representative emphasized the company's willingness to pay for grid services and costs it causes, its keen interest in utilizing grid-connected generation, and its position that it seeks to use co-located structures outside of traditional grid interconnection primarily because grid-connected generation is not coming online fast enough but would be eager to utilize and pay for grid services when and as grid-connected generation becomes available.

Commissioner Christie asked Dominion Energy, which serves more load from data centers than anywhere else in the world, on whether ratepayer-funded nuclear generation would serve data center demand. The IMM raised similar concerns, suggesting that with generation scarcity, data centers should finance and bring generation online with them, whether co-located or elsewhere on the grid.

Cost allocation and responsibility to pay for transmission charges and ancillary services brought the most excitement to this discussion. While all panelists agreed that fair compensation should be provided for grid services, they did not agree about the benefits of co-location, even behind the meter. Talen Energy's representative emphasized that co-located scenarios would be most likely to take ancillary services but less likely to need transmission service, and that ancillary services account for a fraction of costs compared to transmission charges, arguing that transmission charges should track what is drawn from the grid on a net basis.

Near the end of the panel, speakers began to coalesce their thoughts around the causes of co-location, with a sentiment that co-location arrangements are becoming more common now because generator interconnection to the grid is not happening fast enough. Generation developer representatives emphasized that once the market addresses the speed of interconnection challenge, the issue of serving data center load really comes down to a resource adequacy question. In many of the nation's largest energy regions, the region relies on a market construct called a "capacity market" to attract sufficient generation online to serve load even under times of stress, but the adequacy of these capacity markets to that task has been under challenge at FERC in recent years, with many stakeholders calling for reform to capacity markets even before the challenges of serving data center load came to the forefront. A common theme raised at Friday's technical conference, especially on the second panel, is that the trend toward co-location of large loads is a symptom of a larger problem: that the country's energy markets

are not responding quickly enough to recent (and rapidly accelerating) load growth from data centers, electric vehicles, and residential and commercial customer electrification.

**Panel 3: Roundtable with State Representatives.** Panelists included:

- **Katie Fry Hester**, Senator, Maryland State Senate | [Comments](#)
- **Emile C. Thompson**, Chairman, Public Service Commission of the District of Columbia
- **Sarah Moskowitz**, Executive Director, Citizens Utility Board of Illinois
- **Stephen M. DeFrank**, Chairman, Pennsylvania Public Utility Commission | [Statement](#) | [Opening Comments](#)
- **Sarah Freeman**, Commissioner, Indiana Utility Regulatory Commission

The third panel featured state-level regulators, policy makers and advocates from urban and rural, and traditionally regulated and deregulated energy market perspectives. These panelists addressed the policy considerations that arise from co-located load arrangements, including emphasizing that customer impacts on their mind included retail consumer energy availability, environmental effects, and financial impacts. They also addressed the interplay of state and federal regulation and FERC's potential impact on emerging issues, fielding pointed questions from the commissioners regarding what aspects of co-location of load with generation are subject to state retail jurisdiction. Panelists emphasized that the regulatory and market mechanisms available to state regulators vary widely depending on whether a state has adopted customer choice (i.e., electricity deregulation) or has maintained a traditional vertically-integrated utility framework.

State policy makers voiced concerns for local communities and ratepayers. From their perspective, removing generation from the grid would increase costs for ratepayers and would impose new costs related to building regional transmission and bringing replacement generation online. They invited FERC to collaborate with state policymakers to minimize co-location generation's environmental impacts on local communities. Senator Hester implored FERC to halt non-networked co-location in the PJM until FERC can provide a regulatory structure to mediate power resource development and detrimental customer impact.

Policymakers sought increased FERC guidance on co-location expectations and greater transparency for generation capacity that may be removed from the grid and converted, in whole or in part, to co-located generation arrangements.

### ***Closing Remarks***

The Commissioners closed with their appreciation for stakeholder input. They acknowledged that co-location's concerns do not exist in a vacuum—rather, they are intertwined with ongoing questions about adequate generation resource adequacy and transmission system capability.

They indicated that the Commission prioritizes bringing clarity to existing rules about resource adequacy and making clear the respective role of state and federal regulators in managing development of co-located loads.

### ***Takeaways***

Although the data center sector appears willing to pay the costs their projects cause to the grid, the grid—and the many entities that comprise it—has yet to find alignment on what those costs are or how they should be recovered in utility rate design. Reaching this alignment may prove to be the linchpin of the long-term prospects for U.S. data center growth to support the age of artificial intelligence. As Friday’s technical conference demonstrates, the work of accomplishing this task could call upon federal and state regulators, local utilities and RTOs and ISOs, and data centers and the generators who would like to serve them to, among other things, study and synthesize load growth trends and create accurate energy load forecasts, modernize longstanding market rules, and harmonize new market enhancements with recent reforms to transmission planning and interconnection processes, all within the complex and interrelated state and federal regulatory regimes that govern across U.S. jurisdictions.

Also on Friday, mere hours after the close of the technical conference, FERC issued an order rejecting PJM’s filing of the amended interconnection agreement for Talen Energy’s Pennsylvania data center co-location proposal, finding that PJM had failed to demonstrate the proposed deviations from its *pro forma* interconnection agreement was warranted in that case due to specific reliability concerns, novel legal issues, or other unique factors. While PJM could refile the amended interconnection agreement with additional justification, it is not clear whether they will do so or if they will seek rehearing of Friday’s FERC order.

Thus, while FERC has demonstrated enthusiasm for addressing data center-related issues to the extent they are within its jurisdictional purview, FERC and the entities it regulates have much work to do ensure market rules, regulations, and the transmission infrastructure itself is prepared to accommodate data centers, co-located loads, and load growth into the future.

*Gibson Dunn’s Data Center Task Force attorneys are available to assist clients by offering strategic advice; drafting comment letters to agencies; arranging and preparing for high-level executive branch and congressional meetings; and helping clients take advantage of potential opportunities emerging from the rapidly changing regulatory environment.*

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