

Virginia Data Center Load Technical Conference

December 16, 2024

Case No. PUR-2024-00144

Submit Comments to the State Corporation Commission

The Virginia State Corporation Commission (SCC) is seeking public comments regarding challenges associated with providing electric service to large-scale, hyperscale customers. As a supporter of Stop MPRP, this is your opportunity to voice concerns and advocate for fair, community-focused policies.

Public comments are due no later than January 17, 2025.

You may submit your comments online here:

<https://www.scc.virginia.gov/case-information/submit-public-comments/cases/pur-2024-00144.html>

Or you may mail your written comments to:

Clerk of the Commission
c/o Document Control Center
P.O. Box 2118

Key Takeaways

Overview: The conference addressed the challenges of providing reliable electric service to hyperscale customers, such as data centers, with public comments invited by January 17, 2025 (Case No. PUR-2024-00144).

Data Center Growth Challenges:

- NOVEC and Dominion Energy highlighted exponential growth in data center energy demand, with projections exceeding 10,000 MW by 2035, necessitating significant infrastructure investment.
- Panelists emphasized fair cost allocation to ensure hyperscale users bear their share of infrastructure costs, protecting residential and small business ratepayers.
- Dominion, NOVEC, and others stressed the importance of rigorous load forecasting, demand-side management, and collaboration among stakeholders to meet growing energy demands while maintaining reliability.

Economic and Environmental Impacts:

- Panelists claimed data centers contribute to GDP, job creation, and tax revenue but admitted they pose challenges to meeting renewable energy goals and managing grid stress due to rapid growth.

- Clean Virginia and others noted environmental concerns, such as increased CO₂ emissions and the need to balance growth with sustainability targets.

Proposed Solutions:

- Advocates called for tariff reforms, tailored rate classes, and financial commitments from data centers to fund necessary infrastructure and minimize cost-shifting to other ratepayers.
- Proposals included incentivizing co-location, accelerating infrastructure deployment, and improving interconnection processes to address growth effectively.

Local and Regional Coordination:

- Localities like Loudoun County raised concerns about limited authority over infrastructure placement and urged the SCC to involve local stakeholders in planning processes.
- Broader collaboration across utilities, regulators, and developers was emphasized to ensure balanced, equitable, and efficient solutions.

Future Outlook: Participants underscored the urgency of regulatory and policy updates to address these challenges, ensuring Virginia remains a leader in technological and economic development while safeguarding ratepayer interests.

Conference Summary

On December 16, 2024, the Virginia State Corporation Commission held a public technical conference to address the challenges of providing electric service to large-scale hyperscale customers. The Commission has invited public comments in response to the conference discussions, which must be submitted by January 17, 2025, referencing Case No. PUR-2024-00144, either online or via mail.

Welcome and Opening Remarks

- **Gilbert D. Jaramillo, Northern Virginia Electric Cooperative.** NOVEC's data center load has grown rapidly, with 2024 peak demand at 2072 MW and projections exceeding 10,500 MW by 2035. To meet this, NOVEC has standardized processes and invested heavily in infrastructure, with data centers comprising over 65% of energy sales. NOVEC highlighted concerns about rising transmission costs, reliance on non-dispatchable generation, and underused backup generation at data centers. They propose collaborative solutions like demand management programs to address these challenges while balancing impacts on all ratepayers.

Panel 1 — The problem statement

- **John D. Hewa, CEO of Rappahannock Electric Cooperative (REC),** emphasized REC's commitment to serving over 180,000 members across 22 Virginia counties while managing the growing energy demands of data centers. REC has developed innovative solutions, including a

Hyperscale Energy affiliate structure, to meet large-scale data center needs while safeguarding existing members from financial risks. With data center energy demand projected to reach 16,700 MW by 2040, REC advocates for fair cost allocation, financial protections, and tailored energy solutions to balance the needs of large users and the cooperative's broader membership. REC supports collaboration among stakeholders to ensure sustainable, reliable energy access while fostering community and economic growth.

- **Stan Blackwell, Director of Dominion Energy's Data Center Practice**, highlighted Dominion Energy's experience in serving the rapidly growing data center industry, which has positioned Northern Virginia as the "Data Center Capital of the World." Dominion forecasts a doubling of energy usage across its service territory in less than 15 years, driven largely by data center growth. The company employs a five-step process for connecting new data centers, which safeguards against speculative projects through detailed engineering assessments and binding customer agreements. Dominion uses a robust forecasting methodology incorporating a decade of metered data, customer intelligence, and market insights, validated against signed contracts and customer load ramp expectations. This process ensures accurate transmission and generation planning in collaboration with PJM to support the steady energy demands of data centers while balancing renewable and traditional energy sources. Blackwell emphasized the importance of transparent forecasting, rigorous validation, and strategic generation planning to manage the challenges and opportunities presented by data center growth.
- **Aaron Tinjun, Data Center Coalition, Director, Energy Policy and Regulatory Affairs**, highlighted the growing role of data centers in Virginia's economy, supporting digital infrastructure and contributing to GDP, job creation, and tax revenue. He emphasized the industry's commitment to clean energy, efficiency, and paying its fair share of infrastructure costs. Tinjun advocated for sound ratemaking principles, fair cost allocation, and transparency in planning for load growth while underscoring data centers' role in driving technological advancements and sustainability. DCC expressed its commitment to collaboration with regulators, utilities, and stakeholders to develop innovative, reliable, and sustainable energy solutions that meet increasing electricity demand.
- **Marc Chupka, representing Clean Virginia**, highlighted the significant impact of data center (DC) growth on Virginia's electricity system, environmental goals, and customer rates. Dominion Energy projects that data centers will drive 87% of its load growth through 2039, requiring over \$23 billion in new generation and transmission investments, including natural gas, nuclear, wind, and storage resources. This expansion could result in 2.5 million metric tons of CO₂ emissions annually by 2039, challenging Dominion's ability to meet Virginia's renewable energy targets. Chupka emphasized the need for policies ensuring data center customers bear their fair share of costs to prevent unfair rate increases for other customers and safeguard environmental commitments.
- **Gaurav Karandikar, Director at SERC Reliability Corporation**, highlighted the challenges posed by rapid, nontraditional load growth on the reliability of the Bulk Power System (BPS). With SERC overseeing a significant portion of U.S. electricity demand, load growth—driven by data centers, EV adoption, and manufacturing expansion—has risen sharply, creating new risks to resource adequacy and transmission systems. The shift toward renewable energy,

coupled with accelerated retirements of traditional generation sources, adds to planning and operational challenges. Karandikar emphasized the need for a diverse resource mix, careful management of generation retirements, and collaborative efforts among stakeholders to ensure electric reliability and mitigate risks associated with this transformative energy landscape.

Panel 2 — Characteristics of new forecasted load and implications for cost allocation

- **Scott Gaskill, Vice President of Regulatory Affairs at Dominion Energy Virginia,** emphasized the importance of fair cost allocation and risk management in addressing the rapid growth of large energy loads, particularly data centers. Dominion's current cost allocation methodologies aim to ensure all customer classes pay their fair share, with large customers contributing proportionally more as their energy demand grows. Mechanisms like the Contract Dollar Minimum and minimum demand provisions help mitigate cost risks by ensuring large customers cover the infrastructure investments needed to serve them. While Dominion believes its current approach is effective, it recognizes the need for ongoing review and potential adjustments to customer class definitions, cost allocation methods, and contracting terms to address unprecedented load growth and ensure equitable cost distribution. These issues will be central in Dominion's upcoming 2025 biennial review.
- **Brian George, Google, LLC, Global Energy Market Development and Policy, US Federal Lead,** emphasized the company's commitment to clean energy and sustainable growth while addressing challenges posed by rapid load growth, particularly from data centers. Google supports equitable cost allocation policies, advocating for large load customers to cover their share of infrastructure costs while enabling economic development and clean energy deployment. Highlighting innovative partnerships and projects like 24/7 carbon-free energy goals, Google stressed the importance of demand-side management, efficiency, and advanced technologies to reduce costs and enhance grid reliability. George urged for robust regulatory frameworks to mitigate investment risks, ensure accurate load forecasting, and promote fair and transparent rate design, citing Indiana's settlement as a model. Google remains committed to collaborating with stakeholders to meet Virginia's energy needs responsibly.
- **James Wilson, Wilson Energy Economics, Principal, Economist and Consultant,** emphasized the challenges posed by the rapid and uncertain growth of data center (DC) loads, particularly in Virginia, which have created substantial demands on transmission and generation infrastructure. This unprecedented growth, driven by factors like the rise of AI applications, risks burdening existing customers with increased costs and potential stranded investments if data center loads do not materialize as projected. Wilson advocates for a new regulatory approach, treating data centers as a distinct customer class, requiring financial commitments or self-reliance for reliability, and ensuring costs align with those driving the demand. Improved load forecasting and planning methods, incorporating multiple scenarios and better transparency, are also essential to manage these loads efficiently and equitably, minimizing risks to existing ratepayers and supporting resource adequacy and reliability.
- **Cliona Robb, representing the Virginia Manufacturers Association (VMA),** emphasized the critical importance of cost allocation and rate design for Virginia's industrial customers, who

account for approximately 239,000 jobs and have historically been the largest electricity consumers in the state. VMA supports the current approach to cost allocation, which assigns on-premises facility costs to specific customers while socializing off-premises generation and transmission costs. However, Robb acknowledged that the rapid addition of large loads, such as data centers, poses challenges to this model, as it increases costs spread across all ratepayers. While VMA does not advocate for drastic changes, Robb cautioned against creating ultra-high load factor rate classes (e.g., GS-5) that could inadvertently include established industrial customers, potentially undermining economic development. She urged the State Corporation Commission to carefully consider factors like job creation when exploring refinements to rate structures to ensure fairness and economic sustainability.

- **Jack Robb, representing Old Dominion Electric Cooperative (ODEC)**, highlighted ODEC's role as a not-for-profit wholesale power supplier serving 11 member cooperatives across Virginia, Maryland, and Delaware. He emphasized the significant economic benefits and challenges posed by large-use customers like data centers, including risks related to cost recovery and infrastructure development. ODEC supports market-based rates (MBRs) to ensure large users bear the full financial responsibility for their energy demands without burdening traditional cooperative members. Robb outlined risk management tools, including shorter billing cycles, security requirements, and mechanisms to address disputes and emergencies, to maintain reliability and financial stability. ODEC remains committed to balancing the needs of large users with the cooperative's member-focused mission.
- **Joseph Kroboth, III, Deputy County Administrator of Loudoun County, Virginia**, highlighted challenges posed by hyperscale electric customers, such as data centers, on electric utility infrastructure, land use, and ratepayer costs. He urges the State Corporation Commission (SCC) to consider reallocating infrastructure costs more equitably, ensuring high-usage customers bear a greater share of expenses. He emphasizes the exponential energy demands of data centers driven by technologies like AI, which strain the grid and necessitate significant infrastructure expansion. Kroboth also critiques the limited authority of localities in influencing transmission line placement and advocates for tariff reforms, similar to proposals in Ohio, to require hyperscale users to contribute more proportionately to grid costs. Without such measures, he warns of escalating utility rates for residential customers and adverse impacts on local communities and aesthetics.

Panel 3 — Other tools to address challenges

- **Alex Vaughan, representing Appalachian Power Company (APCO)**, emphasized the need for thoughtful policies to manage the rapid growth of large energy loads, such as data centers, in APCO's service territory, which could more than double peak demand. He advocated for enhanced tariff provisions, including longer contract terms, higher minimum billing demands, increased collateral requirements, and flexible capacity reduction options, to protect existing customers and ensure financial stability. Vaughan also highlighted concerns about cost allocation, the impact of renewable portfolio standards, and co-location of generation, proposing regulatory frameworks to balance risks, promote fairness, and maintain reliability during this transformative period of energy demand growth.

- **Brian George, representing Google**, emphasized the company's commitment to clean energy and sustainable growth while addressing challenges posed by rapid load growth, particularly from data centers. Google supports equitable cost allocation policies, advocating for large load customers to cover their share of infrastructure costs while enabling economic development and clean energy deployment. Highlighting innovative partnerships and projects like 24/7 carbon-free energy goals, Google stressed the importance of demand-side management, efficiency, and advanced technologies to reduce costs and enhance grid reliability. George urged for robust regulatory frameworks to mitigate investment risks, ensure accurate load forecasting, and promote fair and transparent rate design, citing Indiana's settlement as a model. Google remains committed to collaborating with stakeholders to meet Virginia's energy needs responsibly.
- **Brandon Smith, VP of Utility Development at Tract Capital Management**, highlighted the company's role in developing master-planned data center parks, including a 2.4 GW campus in Virginia, to meet growing digital infrastructure demand. Smith emphasized challenges like slow infrastructure development, conservative load forecasting, and regulatory hurdles, which risk delaying economic growth and technological leadership. He advocated for proactive planning, equitable cost allocation, accelerated infrastructure deployment, co-location incentives, and streamlined interconnection processes. Stressing collaboration among utilities, regulators, and developers, Smith underscored the importance of balancing rapid infrastructure growth with fairness and efficiency to maintain the U.S.'s competitive edge and ensure Virginia remains a leader in innovation and economic development.
- **Walter Crenshaw, Senior Director of Origination at AES Corporation**, emphasized the company's leadership in renewable energy, with a portfolio of over 580 clean energy projects nationwide, including the largest solar facility east of the Rocky Mountains. He discussed the significant load growth driven by data centers and highlighted AES's role in addressing infrastructure demands and supporting renewable energy goals. Crenshaw noted that while Virginia has embraced renewable energy, political opposition to facility siting at the local level remains a key challenge. He advocated for better regulatory frameworks at the local level to facilitate utility-scale solar development, ensuring energy demand is met while maintaining land use control.