Exhibit No. 451

Google LLC – Exhibit 451
Testimony of Dr. Carolyn A. Berry
Surrebuttal
Case No. ET-2025-0184

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MISSOURI PUBLIC SERVICE COMMISSION

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ET-2025-0184

SURREBUTTAL TESTIMONY

OF

DR. CAROLYN A. BERRY

ON BEHALF OF

GOOGLE LLC

November 3, 2025

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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Carolyn A. Berry. I work at Bates White Economic Consulting ("Bates White"). My business address is 2001 K Street NW, North Building, Suite 500, Washington, D.C. 20006.

Q. What is your position with Bates White?

A. I am a Partner.

Q. Are you the same Carolyn A. Berry that filed rebuttal testimony in this proceeding?

A. Yes.

Q. On whose behalf are you submitting this testimony?

A. I am submitting this testimony on behalf of Google LLC ("Google").

Q. What is the purpose of your testimony?

A. I respond to: (a) the Staff Recommendation filed by the Missouri Public Service Commission ("MPSC") Staff witnesses on September 5, 2025, to create a new alternative tariff for large load customers that is fundamentally different from Ameren's proposed new sub-tariff terms and conditions for large load customers taking service under the existing Service Classification 11M – Large Primary Service ("LPS"), (b) the Office of the Public Counsel witness, Dr. Geoff Marke, who recommends extensive pre- and post-construction studies and reporting for large load customers that include items that are not within the Commission's jurisdiction, (c) Staff's recommendation for annual reporting requirements of large load metrics, and (d) Evergy Missouri witness, Mr. Ryan Hledik, who presented a comparison between Ameren Missouri's and Evergy Missouri's large load tariffs.

Q. Are you sponsoring any schedules or exhibits as part of your direct testimony?

A. Yes, I am sponsoring the following exhibits/schedules:

- Schedule CB-2 – Public Impact Studies
- Schedule CB-3 – Referenced Staff Responses to Google Data Requests

A. SUMMARY OF RECOMMENDATIONS

Q. What do you recommend?

A. I recommend that the Commission:

- Reject Staff's large load tariff proposal in its entirety for the following reasons:
  - Staff's proposal is primarily a cost allocation and rate design proposal that does not adequately address the terms and conditions required for a large load tariff; is insufficiently supported; and is inappropriately offered and considered without the cost of service models and expertise that would be used in a rate case.
  - Staff's proposal is unduly discriminatory in its proposed treatment of each large load customer as a separate commercial pricing node and in imposing new charges on large load customers that are not imposed on other customers taking embedded cost service.
  - Staff's proposal is not based on costs to serve large load customers.
  - Staff's proposal creates unjustified rate instability for large load customers.
  - Staff's proposal does not address large load customer needs and is impractical to implement.
- Reject OPC's proposed pre-construction studies and post-construction reports. Instead, the Commission should order OPC, Ameren Missouri, large load customers, and interested stakeholders to find agreement on the metrics that already exist and

determine what metrics large load customers are able to reasonably calculate and make public.

- Adopt the reporting requirements for Ameren Missouri concerning large load customers that are provided herein.
- Allow the large load tariffs of Ameren Missouri and Evergy Missouri to contain different packages of provisions, given their differing circumstances, in order to provide the flexibility needed to attract large load customers and protect non-large load customers.

Q. Are there any elements of the Commission Staff proposal that you find acceptable?

A. Yes. I find the proposed 10-year contract term, starting after a ramping period of up to five years,[1] to be a reasonable element that provides long-term certainty for both the utility and large customers. However, this single point of agreement cannot justify a proposal that is otherwise unduly discriminatory, not cost-based, and inappropriately considered outside of a rate case. For these reasons, and as detailed in my testimony, I recommend rejecting the proposal in its entirety.

B. <u>DESCRIPTION OF STAFF'S PROPOSED LARGE LOAD TARIFF</u>

Q. Please describe Staff's proposal.

A. Staff proposes a rate plan for large load customers (defined as customers with peak demand of 25 MW or greater or taking service at 34 kV or greater)[2] that is fundamentally different

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[1] Staff Recommendation, Appendix 2, Schedule 1, p. 2, lines 36-37.
[2] Staff's proposed large load tariff is found in Staff's Recommendation in Appendix 2 – Schedule 1.

from the rate structure and design for existing large customers. Staff proposes new methods to compute all or almost all charges including base demand and energy charges. Additionally, Staff proposes a new set of charges that would apply only to large load customers such as the Variable Fixed Revenue Contribution, Stable Fixed Revenue Contribution, Demand Deviation, and Imbalance charges.[3] Staff's proposal would require the Company to register each large load customer with the Midwest Independent System Operator ("MISO") as a separate commercial pricing node to assign MISO charges that are currently determined and allocated on a system basis.[4] Overall, Staff's proposal would separate and treat large load customers under a completely distinct set of rules and conditions, with distinct pricing determinants and charges, than those that apply to other embedded cost customers.

Q. Does Staff support any part of Ameren's large load rate plan?

A. Staff recommends that the Commission reject Ameren's proposed tariffs and associated riders but agrees with a few points. For example, Staff states that it "appreciates Ameren Missouri's recognition of the necessity to track and defer the revenue from termination and capacity reduction fees;"[5] Staff agrees with the Company's notion that large load customers "pay entirely, in advance, for interconnection facilities, as well as upstream transmission upgrades that may be required"[6] to interconnect them to the bulk transmission system; and Staff agrees with the Company's position that large load customers be ineligible for Economic Development Discounts.[7]

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[3] *Id.* at Appendix 2, Schedule 1, p. 4.

[4] *Id.* at p. 24, ll. 3-6.

[5] *Id.* at p. 29, ll. 12-13.

[6] *Id.* at p. 28, ll. 16-17.

[7] *Id.* at p. 30, ll. 7-8.

Q. What is your overall assessment of Staff's proposal?

A. Staff's proposal lacks balance and disproportionately centers on cost allocation and rate design instead of the broader terms and conditions that are needed to address the risks associated with large loads. It imposes new costs and requirements on large load customers with little acknowledgment of the significant benefits they contribute to the broader system. Under the proposed framework, large load customers face charges disconnected from actual costs and are denied any viable pathway to achieving their clean energy goals. If enacted, this proposal would deprive ratepayers of the substantial advantages large load customers bring, as it risks diminishing the incentive for them to invest in and locate in Missouri. From an electrical infrastructure perspective, these advantages include benefits that enhance reliability, improve efficiency, and prepare the utility for a sustainable energy future.

Q. Please summarize how your testimony leads to the conclusion that this proposal should be rejected.

A. My testimony highlights the key flaws and deficiencies in the Staff's proposal. While the Staff proposal ostensibly aims to protect non-large load customers, it ultimately falls short of adhering to core regulatory principles and thus is ineffective in achieving that objective. I have structured my testimony to demonstrate these shortcomings by focusing on the proposal's deviation from emerging industry standards, its development without sufficient input from large customers and the Company, and its failure to prevent undue discrimination, align with cost causation, and ensure equitable treatment, rate stability, and practical implementation. Rather than addressing every flawed provision of the proposal individually, my testimony focuses on these broader critical flaws to demonstrate that the proposal, in its entirety, is not consistent with core regulatory principles and should therefore be rejected.

II. Shortcomings in Staff's Proposal

A. Staff's Proposal Deviates From Emerging Industry Standards For Large Load Tariffs and From Sound Regulatory Process

Q. Please describe the key changes in Staff's proposal.

A. Staff has proposed a complete redesign of virtually all existing rates for large load customers, including demand, energy, customer, and facilities charges. Additionally, they are introducing new rates for fixed revenue contributions, demand deviations, MISO charges, and MISO capacity shortfalls.

Q. Did Staff base its proposal on a comprehensive analysis of emerging practice for large load tariffs?

A. No. While Staff is generally aware of other enacted large load tariffs, it did not consult with any large load customer or utility, or conduct a detailed comparison of other large load tariffs to inform or validate their approach.[8] In other words, Staff's proposal was developed without the benefit of a comprehensive engagement process or a thorough analysis of comparable tariffs from other jurisdictions.

Q. Is Staff's proposal substantially different from the emerging industry standard?

A. Yes. Staff's proposal is fundamentally different because it focuses on a redesign of rates, while the emerging industry standard prioritizes the establishment of terms and conditions to ensure large load customers contribute their fair share of costs and minimize risk to other customers.

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[8] Schedule CB-3 at 2, Staff Response to DR 0063.

Indeed, Staff's proposal presents a redesign of all or almost all charges for large load customers by attempting to separate out costs attributable to large loads using new rate determinants. In doing so, Staff assumes, without good justification or supporting analysis, that the current rate-making framework and methods for cost allocation for large load customers will not work and will not result in an allocation based on cost causation.[9]

Meanwhile, the emerging industry standard prioritizes the establishment of terms and conditions that ensure large load customers contribute their fair share of costs while minimizing the risk to other customers if anticipated large load growth fails to materialize after the Company has made significant investments to serve them. Common terms and conditions adopted in emerging tariffs include contract term, a threshold size for applicability, minimum demand or bill charges, collateral requirements, provisions for reducing contract capacity and exiting, and options for clean energy. Changes in rate design are generally minor. As a package these terms and conditions ensure, to an acceptably high degree, that the rates paid by large load customers reflect their representative share of costs. In my opinion as an economist, a package of terms and conditions such as these would satisfy the requirements of Senate Bill 4.

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[9] For example, *see* Schedule CB-3 at 6, Staff Response to DR 0067, (Q. Does the current method of flowing each of these expenses through the FAC result in a reasonable allocation of costs? A. The Commission has authorized the current FAC treatments as contained in the active FAC tariffs for Ameren Missouri. The concerns Staff raises with regard to LLCS customers is that the scale of LLCS customers will differ significantly for current customers such that differing treatment is appropriate.).

Q. Does Staff's proposal include all of the key provisions in the emerging industry standard?

A. No. While the proposal does include an eligibility threshold, a contract term, and a collateral requirement,[10] it notably fails to include minimum demand or bill charges, options to reduce contract capacity, or options to secure renewable or clean energy, which are all key components of the emerging standard.

Q. What is the basis for Staff's conclusion that the current rate making and cost allocation framework will not work for large load customers?

A. Staff provides little evidence to support this conclusion. When asked why the current cost allocation methodology is insufficient, Staff was non-responsive, reiterating its proposal to create a new cost allocation structure for large load customers that will break out tariff components and create numerous discrete charges.[11] Staff has not identified deficiencies in the current framework that would provide a basis for proposed changes nor have they done a comparison to its proposed methodologies to demonstrate their superiority. Moreover, Staff has not vetted its proposal to evaluate the impact on the rates of non-large load customers, ensure there is no over-recovery of costs, or verify that the rates charged to large load customers will reasonably reflect cost causation, such that large load customers pay their representative share of costs.

Q. Is a complete overhaul of rates outside of a rate case appropriate?

A. No, it is not appropriate. A complete overhaul of this kind should only occur within a formal rate case. Staff does not have the tools or data required to determine if such a major

[10] Staff also outlines the conditions under which a large load customer would be required to pay termination charges.
[11] Schedule CB-3 at 8, Staff Response to DR 0068(a).

change is needed, or how it would be best implemented outside of that established regulatory process.

Q. What do you recommend?

A. I recommend that the Commission reject Staff's proposal. It is a flawed proposal that is primarily a cost allocation and rate design proposal, and fails to adequately address the full scope of terms and conditions required for a large load tariff. It is also insufficiently supported and was inappropriately offered and considered, as this process lacks the necessary cost of service models and expert rate design analysis that a rate case would provide.

B. STAFF'S PROPOSAL IS UNDULY DISCRIMINATORY

Q. Is Staff's proposed cost allocation and rate design for large load customers unduly discriminatory?

A. Yes. Staff proposes to separate large load customers from all other customers and then allocate costs and design rates for them using completely different methods. Staff proposes new charges for large load customers that other customers will not have to pay. Such a complete departure from the existing rate structure and methodology for current large customers is unduly discriminatory.

Q. Can you provide some examples of undue discrimination?

A. Yes. One example is Staff's proposal to require the Company to register each large load customer with MISO as a separate commercial pricing node[12] and then assign charges based on that pricing node. As Ameren is a vertically integrated utility that does not offer retail choice,

[12] Staff Recommendation, p. 21, ll. 25-26.

no Ameren customer pays an electric price based on an individual commercial pricing node.[13] Utilities like Ameren utilize a pricing approach that aggregates and averages nodal prices to reduce price volatility for individual customers. Under Staff's proposal, large load customers would not be afforded the same protection from price volatility. Moreover, as noted by Ameren, large load customers typically have higher load factors which make their loads more predictable and including them into the same commercial pricing node as the rest of Ameren Missouri's system can reduce average forecast variance and create benefits for customers by reducing average forecast deviation costs.[14]

Q. What is Staff's justification for requiring registration of each large load customer as a separate commercial pricing node?

A. Staff's main argument is that large load customers are so significant in size that there could be shifting of MISO costs to other customers and that separate commercial pricing nodes would keep MISO costs separate. Specifically, Staff contends that separate pricing nodes should be required because "absent this treatment, it is difficult to isolate the expenses caused by LLCS customers that would otherwise be flowed through the FAC [Fuel Adjustment Charge] and which may cause unreasonable impacts on captive ratepayers."[15]

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[13] In MISO's market design, the prices from each elemental pricing node (eNode) are aggregated into a one or more weighted average pricing nodes (pNodes). Where retail choice is allowed, customers have the option to work with their energy suppliers to take direct exposure to settlement prices at these pNodes if they so choose.

[14] Surrebuttal Testimony of Steven M. Wills on Behalf of Union Electric Company d/b/a Ameren Missouri, File No. EO-2025-0154, September 12, 2025, p. 17, ll. 2-11.

[15] Staff Recommendation, p. 23, ll. 21-23.

Q. Has Staff presented any evidence that expenses at the MISO nodal level caused by large load customers would have unreasonable impacts on other ratepayers?

A. No. Staff speculates that this might be possible, but has not performed any analysis or even provided a plausible example to establish the likelihood or importance of this issue.

Q. Are you aware of any other utility that has created a separate commercial pricing node and assigned Regional Transmission Organization ("RTO")-level charges based on that node to each large load customer in a large load tariff?

A. No.

Q. Are there other examples of undue discrimination in Staff's proposal?

A. Yes. Staff proposes a set of new charges that would apply to large load customers but not to other customers taking service under embedded cost rates. There is no basis for this discriminatory treatment. The additional charges for large load customers are:

- Capacity Shortfall Rate
- Demand Deviation Charge
- Imbalance Charge
- Stable Fixed Revenue Contribution
- Variable Fixed Revenue Contribution

Q. In addition to being unduly discriminatory, do these five charges violate other regulatory principles?

A. Yes. All of these additional charges lack a cost foundation; they are not tied to the cost of serving large load customers. I will address one of these charges, the Capacity Shortfall

Rate in this section focusing primarily on discrimination and the remaining four charges in the next section focusing on the lack of a cost basis for those charges.

Q. What is the Capacity Shortfall Rate and why is it unduly discriminatory?

A. Staff proposes this rate "for the potential recovery of revenue associated with any MISO action through which Ameren Missouri ratepayers become responsible for payments associated with MISO capacity deficiency charges."[16] Staff would make large load customers liable for capacity deficiency charges associated with the Company's management of the system-wide capacity position. A capacity shortfall, if it occurs, would be due to system capacity requirements relative to measured system capacity, not to any individual customer load. Charging a single class for costs that are attributable to all classes is unduly discriminatory.

Q. What do you recommend?

A. I recommend that the Commission reject Staff's proposal as unduly discriminatory in its treatment of large load customers as a separate commercial pricing node and assigning charges based on that node, and imposing additional new charges on large load customers that are not imposed on other customers taking embedded cost service.

C. STAFF'S PROPOSAL IS NOT COST-BASED

Q. In the previous section you identified four discriminatory charges (Demand Deviation Charge, Imbalance Charge, Variable Fixed Revenue Contribution, and Stable

[16] Staff Recommendation, p. 59, l. 31 – p. 60, l. 2.

Fixed Revenue Contribution) developed by Staff which are also not based on costs. Please explain these charges.

A. The charges fall into two categories: those related to demand deviations and those related to fixed revenue contributions.

- Demand Deviation Charges: The charges include the Demand Deviation Charge and the Imbalance Charge. Based on my understanding of Staff's proposal, these charges penalize a large load customer when their actual or contract demand differs from their forecasted demand. The Demand Deviation Charge penalizes a large load customer if its annual forecasted demand (referred to as current-year updated contract demand) is different from its initial contract demand. The Imbalance Charge penalizes the customer if its actual monthly demand is different from its forecasted monthly demand (the monthly forecast is done annually and is also referred to as the current-year updated contract demand).[17]
- Fixed Revenue Contributions: The Fixed Revenue Contribution Charges include the Variable Fixed Revenue Contribution and the Stable Fixed Revenue Contribution. Both charges are expressed as percentages and are calculated by applying those percentages to the kW and kWh charges on a large load customer's bill. The purpose of these charges is to collect a contribution toward fixed costs.[18]

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[17] *Id*. at p. 60, ll. 8-28.

[18] *Id*. at p. 59, ll. 9-21; p. 67, ll. 1-2.

Q. Please elaborate on the Demand Deviation Charge.

A. This charge would apply to differences between the initial contract demand and the current year updated (forecasted) contract demand.[19] My interpretation of this is that a large load customer will forecast its yearly demand (kW), and if it is different (higher or lower) than its initial contract demand (kW), then it will pay a Demand Deviation Charge ($/kW) times the difference in quantities (kW) for deviations greater than +/- 5% of the initial contract demand. Staff proposes a Demand Deviation Charge of $136.17/kW-year or $11.3475/kW-month based on the current MISO Cost of New Entry ("CONE") for Missouri.[20] CONE represents the annualized capital cost of building a new combustion turbine ("CT") peaking power plant.[21]

Q. Why is Staff's proposed Demand Deviation Charge problematic?

A. The implications of this charge have not been fully vetted and could result in suboptimal forecasts or other inefficiencies. A full evaluation is not possible because many details, such as how the load forecasts are developed, are missing. Setting the charge at CONE is also problematic. CONE factors into the price for actual capacity deficiencies in MISO; it is not used for forecasts.

Q. Do you have any other concerns with Staff's Demand Deviation Charge proposal?

A. Yes. It is excessively stringent and unnecessarily complicated. Penalties would kick in for any annual forecast demand level less than 95% (or greater than 105%) of initial

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[19] *Id.* at p. 60, 14-15.

[20] *Id.* at p. 50, ll. 23-26.

[21] *See*, MISO Cost of New Entry (CONE) and Net CONE Calculation for Planning Year 2025/2026, p. 4, available at https://cdn.misoenergy.org/20240923%20RASC%20Item%2003%20CONE%20and%20Net%20CONE%20Update649247.pdf

contract demand. This provides very little flexibility to large load customers who must manage business risk and are subject to market fluctuations that affect actual demand. Demand Deviation Charges ($/kW) would presumably be reset from year to year, creating more risk for large load customers and increasing regulatory burden. Moreover, no other customer is held accountable for deviations in forecast demand. It is the utility's responsibility to forecast annual demand for all its customers. A minimum demand charge, not the deviation framework proposed by Staff, is a superior way to guarantee a revenue stream that would protect non-large load customers from the risk of stranded costs.

Q. Please elaborate on the Imbalance Charge.

A. This charge would apply to the difference between a monthly demand forecast (made as far as a year out) and actual monthly demand.[22]

Q. What is the basis for this charge?

A. Staff explains that the Imbalance Charge "accounts for differences in realized demand during peak periods compared to the contracted demand for that year providing the LLCS customer a financial incentive to operate consistent with the contracted demand."[23] Staff proposes to set this charge at the lesser of $11.3475/kW or the current year MISO Planning Resource Auction price for the specified season.[24]

Q. How do you respond?

A. Staff's proposed Imbalance Charge would penalize a large load customer for not forecasting monthly load exactly, holding a large load customer to an unrealistic standard and one

[22] Staff Recommendation, p. 60, ll. 24-26.

[23] *Id.* at p. 60, ll. 33-35.

[24] *Id.* at p. 60, ll. 26-28.

that is applicable to no other customer. This is unduly discriminatory, inequitable and unreasonable. Moreover, differences between forecasted and actual monthly peaks for an individual large load customer have not been shown to be a problem that needs to be solved.

Staff's proposed charge is based on MISO's CONE for Missouri or, if lower, MISO's Planning Resource Auction price.[25] These prices have nothing to do with monthly deviations of demand from forecasted amounts of a single customer. Staff has provided no explanation or cost foundation for these prices.

Staff's focus on short-term imbalances reflects a fundamental misunderstanding of large load tariffs. These tariffs are designed with a broader purpose: to establish long-term protections for the recovery of infrastructure costs and ensure large load customers pay their fair share.

Q. Turning now to the fixed revenue charges, please elaborate on the Variable Fixed Revenue Contribution Charge.

A. It is a charge equal to 23.40% times the following charges on the monthly bill: (1) Customer Charge; (2) Facilities Charge; (3) Wholesale Energy Charge; and the, (4) RES Compliance Charge.[26]

Q. Please elaborate on the Stable Fixed Revenue Contribution Charge.

A. It is a monthly charge for Generation equal to 23.40% times the (1) monthly Generation Capacity Charge or the Generation Capacity Charge based on the updated contract demand, whichever is greater, and for Transmission equal to 23.40% times the (2) monthly

[25] *Id.* at p. 60, ll. 26-28.

[26] *Id.* at p. 61. ll. 28-31; p. 67, ll. 1-2.

Transmission Capacity Charge or the Transmission Capacity Charge based on the updated contract demand, whichever is greater.[27]

Q. Do these charges, in effect,[28] scale up a large load customer's entire bill by 23.40%?

A. Yes.

Q. Why is Staff proposing to scale up almost a large load customer's entire bill by 23.40%?

A. Staff proposes that these additional charges be required as contributions to fixed cost recovery.

Q. What is the cost basis for these charges?

A. There is no cost basis. Staff's recommendation is that the large load rate "be set to collect 120% of the cost of service that varies with the addition of a new LLCS customer."[29] Staff states that this is essentially the floor established by Section 393.1640, RSMo,[30] and that Staff is using this statute as guidance for a minimal level of fixed cost of service contribution from a new customer.[31] Given how Staff is applying the charges, it appears that Staff views almost all of the large load customer's bill as "the cost of service that varies with the addition of a new LLCS

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[27] *Id.* at p. 61, ll. 31-38; p. 67, ll. 1-2.

[28] Staff does not propose to scale up the Low Income Pilot Program Charge or the Reactive Demand Charge, for example.

[29] Staff Recommendation, p. 47, ll. 6-7.

[30] *Id.* at p. 47, ll. 4-5.

[31] Schedule CB-3 at 12-13, Staff Response to DR 0070 (a).

customer."[32] To account for income tax, as Staff explains, "the bill components actually need to be multiplied by 23.40% to accomplish a 20% contribution to fixed costs."[33]

Staff has done no analysis to determine if the "fixed costs" that it proposes to collect through the Variable and Stable Fixed Revenue Contribution Charges will even change with the addition of large load customers.[34] When asked if Staff verified that large load rates set to recover 120% of the cost of service correctly captures costs incurred on behalf of large load customers, Staff replied that the 20% mark-up is, "*deemed* to be the representative share of what is often termed "fixed cost,"[35] confirming that Staff has no cost basis to support its proposal. Since a large load customer's existing bill already includes charges that recover fixed costs, scaling up the bill by an arbitrary 23.40% is highly likely to result in an over-recovery of those fixed costs.

Q. Does your testimony's focus on certain charges imply support for others you did not address?

A. No. My testimony focuses on the critical flaws in the Staff's proposal, and I have chosen to provide detailed examples of specific charges to demonstrate the fundamental issues with the overall approach. While I do not explicitly testify on every single charge, a lack of testimony should not be interpreted as support for those charges. I do not support the other charges proposed by Staff as they also contribute to the overall discriminatory nature of the Staff's proposal.

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[32] Staff Recommendation, p. 47, ll. 6-7.

[33] *Id.* at p. 59, ll. 6-8.

[34] Schedule CB-3 at 10, Staff Response to DR 0069(b).

[35] Schedule CB-3 at 12-14, Staff Response to DR 0070(d).

Q. What do you recommend?

A. I recommend that the Commission reject Staff's proposal because it is not based on costs to serve large load customers.

D. <u>Staff's Proposal Creates Rate Instability</u>

Q. What does Staff propose to charge large load customers for energy?

A. With respect to energy pricing, Staff recommends that large load customers be charged MISO nodal energy prices. They argue that "[e]very kWh of energy required by an LLCS customer will cause Ameren Missouri to purchase an additional kWh of energy in the interval in which it is needed, at the price of the Locational Marginal Price (LMP) at the interconnection node."[36] This is technically true under the rules governing the operation of the MISO market, but the purchases do not reflect the cost of energy for Ameren's customers. As Staff acknowledges, "[e]ach day, generators owned by its market participants, including Ameren Missouri, are bid into the market, and MISO chooses which ones to dispatch to serve its system-wide load on a least-cost basis."[37] Additionally, Ameren bids its load into the market. As a result of being on both sides of the market, Ameren's exposure to nodal prices is largely hedged because revenues from sales and costs of purchases will net against each other. What remains are Ameren's generation costs and those are, for the most part, the costs that Ameren's customers will pay. For vertically integrated utilities in MISO, the cost of energy to serve their load is driven predominantly by their fuel costs, not MISO nodal prices. Consequently, the energy cost to serve large load customers primarily consists of fuel costs, with only a minor portion influenced by MISO nodal prices.

[36] Staff Recommendation, p. 22, l. 22 - p. 23, l. 3.

[37] *Id.* at fn. 43.

Q. Do nodal prices reflect the actual cost of service for large load customers who are taking service under an embedded cost tariff?

A. No. This is another example of charging large load customer rates that are not cost based. It is also another example of undue discrimination. Large load customers should be afforded the same rate treatment as other embedded cost customers.

Q. Does Staff's proposal to charge nodal prices create rate instability for large load customers?

A. Yes. The proposal can introduce significant rate instability for large load customers. Staff admits that nodal prices can fluctuate significantly and unpredictably due to changes in local supply and demand.[38] However, Staff did not conduct any analysis of potential price volatility that could be introduced by creating separate commercial pricing nodes for large load customers to assess the impact on these customers.[39] This treatment of large load customers is not equitable.

Q. What do you recommend?

A. I recommend that the Commission reject Staff's proposal to charge nodal energy prices to large load customers because it would result in undue discrimination, it lacks a cost basis, and it creates unjustified rate instability for large load customers.

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[38] Schedule CB-3 at 4, Staff Response to DR 0065(b).

[39] *Id.* at (a).

E. STAFF'S PROPOSAL DOES NOT ADDRESS LARGE LOAD CUSTOMER NEEDS AND IS IMPRACTICAL TO IMPLEMENT

Q. Does Staff's proposal address the needs of large load customers?

A. No. As the Company explained in its Direct Testimony, "Many large load users have clean energy goals that are among the most aggressive and sophisticated of any energy consumers in the world."[40] As such, the Company has proposed four optional renewable or carbon-free riders. In my experience, I too have found that large load customers have ambitious clean energy goals, and as I proposed in my Rebuttal Testimony, the Company should go even further and offer a Clean Transition Tariff. Staff has recommended that the Commission reject the Company's optional renewable and carbon-free riders[41] and proposes no replacement riders or other clean energy alternatives. Offering renewable and clean options is a good way to attract and retain large load. Yet, Staff's proposal fails to address the renewable/clean energy needs of large load customers, diminishing its value to them.

Q. Would Staff's proposal be impractical to implement?

A. Yes. Staff has proposed a sweeping set of changes to rate design and cost allocation. It would be imprudent to implement such changes with no assessment of the need or impact of these changes. Spending time and resources to vet changes that do not resolve a known problem would be wasteful and impractical.

Q. What do you recommend?

A. I recommend that the Commission reject Staff's proposal as non-responsive to large load customer needs and as impractical to implement.

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[40] Direct Testimony of Steven M. Wills at p. 21, ll. 13-14.

[41] Staff Recommendation at p. 70, ll. 12-17 (regarding the Nuclear Energy Credit Program); p. 72, l. 21 - p. 73, l. 9 (regarding the Renewable Solutions Program); p. 74, ll. 7-12 (regarding Clean Capacity Advancement Program); and p. 83, l. 14 (regarding Clean Energy Choice Program).

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III. OPC's Information and Study Requests are Excessive and Outside the Commission's Jurisdiction

Q. What information and studies does OPC recommend for large load customers?

A. OPC recommends that large load customers perform pre-construction studies and submit post-construction reports to Ameren Missouri addressing Power Usage Effectiveness ("PUE"), Water Usage Effectiveness ("WUE") and Total Harmonic Distortion. Ameren Missouri would then file annual public reports to the Commission based on the post-construction reports.

Q. What would be included in the pre-construction study for PUE?

A. This pre-construction study for PUE "would investigate (at a minimum) the cooling systems, power distribution, hardware efficiency, airflow management, the option of employing modular design for expansion," and "how demand response capability can be incorporated into the customer's operations."[42]

Q. What would be included in the pre-construction study for WUE?

A. This pre-construction water usage study "would determine pre-construction water availability, analyze historical and projected weather patterns, assess the continued rise in demand from data center customers, and identify potential shortfalls."[43] It would also include "considerations for on-site water treatment and sustainable management practices,"[44] and "feedback from the Missouri Department of Natural Resources and relevant water authorities for input on current and future adequacy levels under a range of assumptions."[45]

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[42] Direct Testimony of Geoff Marke at p. 37, ll. 10-15.
[43] *Id*. at p. 39, ll. 15-17.
[44] *Id*. at p. 39, ll. 17-18.
[45] *Id*. at p. 39, ll. 21-23.

Q. What would be included in the pre-construction study for Total Harmonic Distortion?

A. This pre-construction study for Total Harmonic Distortion would measure the existing distribution system to take a baseline measurement by identifying “any existing harmonic sources such as nearby industrial facilities or legacy infrastructure with nonlinear loads.” Then, the impact of future large load customers on the distribution system would be simulated by Ameren Missouri and the customer.”[46]

Q. Are these pre-construction studies reasonable?

A. No. The studies are too wide-ranging in scope, too intrusive into a customer’s operational practices, and would duplicate many analyses that are already done. They would require the involvement of Ameren Missouri, and outside state agencies and authorities which may not agree to participate in such studies. The studies would delve inappropriately into the measurement of proprietary commercial information which could damage market competition and individual competitors. Moreover, it is likely that the Commission does not have the authority to order such studies that address topics such as data system design or water management practices, which are well outside its jurisdiction.

Q. What generally would be included in the post-construction reports submitted to Ameren?

A. As I understand it, the pre-construction studies would determine baseline values for company-specific PUE, WUE, and total harmonic distortion and the post-construction reports would contain post-construction benchmarking scores for these metrics.

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[46] *Id.* at, p. 37, ll. 10-15.

Q. Is information on PUE, WUE, and total harmonic distortion already publicly available?

A. Yes, in part. Google releases to the public impact studies that report PUE and water usage at its data centers. I have attached examples of these impact studies for Nebraska, Iowa, Ohio, and Virginia in Exhibit CB-2. Information about harmonic distortion is something that Ameren Missouri would have, not large loads. Thus, it would not be appropriate—or may not even be possible—for large load customers to measure and report harmonic distortion as proposed by Dr. Marke. Instead, large loads could report their compliance with applicable industry-accepted standards for power quality to satisfy OPC's concerns.

Q. What do you conclude?

A. The Commission should reject OPC's proposed pre-construction studies for large load customers as excessively broad, excessively intrusive into a customer's operational practices and proprietary information, duplicative, infeasibly involving third parties, potentially damaging to competitive markets, and outside the Commission's jurisdiction. The Commission should also reject OPC's post-construction reports and instead, order OPC, Ameren Missouri, large load customers, and interested stakeholders to find agreement on the metrics that already exist and determine what metrics large load customers are able to reasonably calculate and make public to satisfy OPC's concerns.

IV. Reporting Requirements

Q. Does Staff recommend large load-related annual reporting requirements for Ameren Missouri?

A. Yes. Staff states in its section "Customer Approval Process" that Ameren Missouri should file "proposed annual reporting requirements for Ameren Missouri to report to the Commission and the public on the proposed customer."[47]

Q. Did Staff specify the actual reporting requirements that would apply?

A. No, not to my knowledge.

Q. Do you have suggestions for the actual reporting requirements that would provide information of interest to the public?

A. Yes. I recommend that Ameren submit an annual report to the Commission that contains the following information:

1. the number of executed electric service agreements ("ESAs"),
2. the total number of new or expanded large load customers that have enrolled in Schedule LPS,
3. the aggregate estimated large load customer MW enrolled under Schedule LPS,
4. the sector that each large load customer is in, and
5. the estimated number of new or retained jobs associated with each new or expanded large load customer (to the extent available).

Q. Are these reporting requirements consistent with large load tariffs filed by utilities other than Ameren Missouri?

[47] Staff Recommendation, p. 31, ll. 32-33.

A. Yes. The unanimous Evergy Kansas settlement contains four reporting requirements that are the same as requirements 2, 3, 4, and 5 above. The list above adds another requirement (1) that will provide additional information.

Q. Will these reporting requirements provide sufficient information to the public?

A. Yes. These requirements, together with information about large load customers already available to the public, will keep the Commission and the public adequately informed about large load developments in the state.

V. EVERGY MISSOURI'S PROPOSED LLPS TARIFF HAS CHANGED DEMONSTRATING THAT THERE IS NO BEST SET OF TARIFF PROVISIONS

Q. Did Evergy Missouri propose modifications to its LLPS tariff subsequent to filing the rebuttal testimony of Mr. Ryan Hledik?[48]

A. Yes. After Mr. Hledik's testimony was filed, Evergy Missouri reached a Non-Unanimous Global Stipulation and Agreement ("Evergy Missouri Settlement") with numerous parties in its own large load tariff docket that contains modifications to some of the tariff provisions.[49]

Q. What tariff provisions have changed?

A. The most salient changes are the following:

1. <u>Minimum contract term</u>. In Mr. Hledik's testimony the minimum contract term is 15 years, whereas in the Evergy Missouri Settlement the minimum contract term is 12 years.

[48] Rebuttal Testimony of Ryan Hledik ("Hledik Rebuttal").
[49] Non-Unanimous Global Stipulation and Agreement, File No. EO-2025-0154, September 25, 2025.

2. Contract Reduction Restrictions. In Mr. Hledik's testimony there is a one-time reduction of 20% allowed with no penalty, whereas in the Evergy Missouri Settlement there is a one-time reduction of 10% or up to 25 MW (whichever MW figure is lower) allowed with no penalty.

3. System Support Rider/Cost Stabilization Rider. The System Support Rider described in Mr. Hledik's testimony was removed as a result of the Evergy Missouri Settlement and replaced with the Cost Stabilization Rider. The Cost Stabilization Rider is one component of the former System Support Rider. The other component, the Acceleration Charge, was removed from the LLPS Tariff as a result of the Evergy Missouri Settlement.

4. Proposed Rates. The Demand Charges in Mr. Hledik's testimony are lower than the Demand Charges in the Evergy Missouri Settlement.

Q. What do these tariff changes illustrate?

A. These changes illustrate that different combinations of tariff provisions can work for one utility, and as in the case of Ameren Missouri and Evergy Missouri, different combinations of tariffs can work for different utilities. However, the basic structure (contract term, a threshold size for applicability, minimum demand or bill charges, collateral requirements, provisions for reducing contract capacity and exiting, and options for clean energy) remains consistent.

Q. Please elaborate on why tariff provisions may differ among utilities.

A. In the case of different utilities, we would expect different packages of tariff provisions because each utility will have different resource portfolios, grid configurations, market rules, local laws, land availability, communications networks, etc., and each utility will need to tailor its large load tariff to be competitive in the large load market while ensuring that other non-large load customers are protected. One critically important difference between Ameren Missouri and Evergy Missouri is the fact that these utilities are members of, and operate their business in, two different Regional Transmission Organizations ("RTOs"), with Ameren Missouri operating in MISO while Evergy Missouri operates in the Southwest Power Pool ("SPP"). MISO and SPP have distinct and different energy markets, capacity markets, resource adequacy programs, demand response / load modifying resource tariffs, interconnection queues, and transmission plans, among myriad other differences. One particularly important distinction is the differentiation in capacity markets. SPP (including Evergy) does not have a centralized auction capacity market through which capacity can be traded with other market participants. In contrast, MISO has an annual capacity market called the Planning Reserve Auction, whereby any excess generation capacity Ameren has in subsequent years can be easily sold and monetized for the benefit of all customers.

Q. Do you still support the terms for Ameren's large load customer tariff that you laid out in your rebuttal testimony?

A. Yes. I support a contract terms of 10 to 12 years with an optional load ramping period of up to 4 years; a minimum demand charge of 70%; an allowed reduction in capacity of up to 20% with no charge, and further reductions subject to a Capacity Reduction Charge; and, the acceptance of Ameren's proposed clean energy riders with the addition of another rider similar to the CTT.

Q. What do you conclude?

A. The comparison of the large load tariffs of Ameren Missouri and Evergy Missouri, as updated by the Evergy Missouri Settlement, show that different packages of tariff provisions (while following the same general structure) can both achieve the results of encouraging large load customers to locate in the respective service territories while still protecting non-large load customers.

VI. SUMMARY OF RECOMMENDATIONS

Q. What do you recommend?

A. I am aware of no precedent for creating a separate rate structure that singles out one class of embedded cost customers as Staff proposes for large load customers. There are more appropriate means of addressing the requirements of Senate Bill 4 that do not require a complete redesign of rates or suffer from the flaws in Staff's proposal. Large load tariffs in other jurisdictions have been addressed through balanced contractual protections, not through discriminatory redesign of fundamental rate structures. Therefore, I recommend that the Commission:

- Reject Staff's large load tariff proposal in its entirely for the following reasons:
  - Staff's proposal is primarily a cost allocation and rate design proposal that does not adequately address the terms and conditions required for a large load tariff; is insufficiently supported; and is inappropriately offered and considered without the cost of service models and expertise that would be used in a rate case.
  - Staff's proposal is unduly discriminatory in its proposed treatment of each large load customer as a separate commercial pricing node and in imposing new charges on large load customers that are not imposed on other customers taking embedded cost service.
  - Staff's proposal is not based on costs to serve large load customers.
  - Staff's proposal creates unjustified rate instability for large load customers.

- Staff's proposal does not address large load customer needs and is impractical to implement.

- Reject OPC's proposed pre-construction studies and post-construction reports. The Commission should order OPC, Ameren Missouri, large load customers, and interested stakeholders to find agreement on the metrics that already exist and determine what metrics large load customers are able to reasonably calculate and make public.
- Adopt the reporting requirements for Ameren Missouri concerning large load customers that are provided herein.
- Allow the large load tariffs of Ameren Missouri and Evergy Missouri to contain different packages of provisions in order to provide the flexibility needed to attract large load customers and protect non-large load customers given their differing circumstances.

Q. Does this conclude your testimony?

A. Yes, it does. Thank you.

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BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Approval of New Modified Tariffs for Service to Large Load Customers	))))	File No. ET-2025-0184

AFFIDAVIT OF CAROLYN A. BERRY

1. My name is Carolyn A. Berry, and I am a Partner at Bates White Economic Consulting. My business address is 2001 K Street NW, North Building, Suite 500, Washington, D.C. 20006.

2. I have read the above and foregoing Testimony and the statements contained therein are true and correct to the best of my information, knowledge, and belief.

3. Under penalty of perjury, I declare that the foregoing is true and correct to the best of my knowledge and belief.

Carolyn A. Berry
Carolyn A. Berry
Partner
Bates White Economic Consulting

Date: 11-3-2025