

Exhibit: *Ratemaking Determinations*
Issue(s): *Rate Impact Study*
Witness: *Sarah L.K. Lange*
Sponsoring Party: *MoPSC Staff*
Type of Exhibit: *Surrebuttal Testimony*
Case No.: *EA-2025-0238*
Date Testimony Prepared: *January 16, 2026*

MISSOURI PUBLIC SERVICE COMMISSION
INDUSTRY ANALYSIS DIVISION
TARIFF/RATE DESIGN DEPARTMENT

SURREBUTTAL TESTIMONY

OF

SARAH L.K. LANGE

**UNION ELECTRIC COMPANY,
d/b/a Ameren Missouri**

CASE NO. EA-2025-0238

Jefferson City, Missouri
January 2026

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**SURREBUTTAL TESTIMONY
OF
SARAH L.K. LANGE
CASE NO. EA-2025-0238**

Q. Please state your name and business address.

A. My name is Sarah L.K. Lange, Missouri Public Service Commission, Madison St., Jefferson City, Missouri, 65101.

Q. Are you the same Sarah L.K. Lange who contributed to Staff's Rebuttal Report on December 12, 2025?

A. Yes.

SUMMARY

Q. What is the purpose of your surrebuttal testimony?

A. I will provide a correction to my portion of the Staff Rebuttal Report, and I will respond to the testimony of Dr. Geoff Marke of the Office of the Public Counsel (“OPC”).

CORRECTIONS

Q. Do you have a correction to your portion of Staff's Rebuttal Report?

A. Yes. On page 83, I erroneously included the statement that “For years in which new large load is modeled, Staff included that load in the allocator calculations used in the economic model.” However, Staff has not been able to complete its work on developing the model to reasonably incorporate new load, and no large load was included in the modeling provided in Staff’s Rebuttal Report.

1 **RESPONSE TO DR. MARKE REGARDING HIS FIRST RECOMMENDATION**

2 Q. Dr. Marke recommends that “Ameren Missouri provide positive affirmation that
3 the attendant costs of this application should be borne by the cost causer, in this case,
4 specifically, the hyperscale users that demand it.”¹ In light of Dr. Marke’s testimony,
5 what does Staff recommend?

6 A. Staff recommends:

7 1. That the question of whether or not the Big Hollow Combustion Turbine
8 Generator (“CTG Project”) and the Big Hollow Battery Energy Storage System
9 (“BESS Project”) are eligible for Plant in Service Accounting (“PISA”)
10 be reserved for the applicable future rate case;² and

11 2. That determination of the cost of service responsibility for the CTG and
12 BESS be made in the rate cases in which recovery for that cost of service is
13 sought. Not only is it premature to make cost allocation decisions concerning
14 unbuilt rate base at this time, but Staff is concerned that implementing
15 Dr. Marke’s recommendation at this time would result in unreasonable outcomes
16 under which (1) valuable transmission interconnection rights would be allocated
17 solely to large load customers, and (2) additional cost of service related to
18 serving large load customers, such as reliability, RES compliance,
19 and satisfaction of what Ameren Missouri characterizes as “energy need,”
20 would not be appropriately allocated to large load customers if the capacity

¹ Dr. Marke Rebuttal, page 2.

² Page 69 of the Staff Rebuttal Report addresses the PISA eligibility of the CTG. Pages 70-71 of the Staff Rebuttal Report addressed the PISA eligibility of the BESS. As discussed in the Surrebuttal testimony of Blair Hardin, in light of Dr. Marke’s testimony, Staff clarifies its statements regarding PISA eligibility of the CTG and the BESS to state that these facilities “may” be eligible for PISA recovery.

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1 needs of those customers is met or exceeded by the Big Hollow Energy Center
2 (“BHEC”). Finally, Dr. Marke’s recommendation will result in unreasonable
3 and possibly impossible administrative complexity.

4 Q. How do Staff’s recommendations on PISA eligibility and delaying
5 determination of cost of service responsibility interrelate?

6 A. Both recommendations are that the Commission refrain from making any
7 determinations in this case that are not necessary for the resolution of this CCN application.
8 Regarding PISA eligibility, the Commission will be asked in a future rate case the extent to
9 which the BESS Project and CTG Project are rate base additions that increase revenues by
10 allowing service to new customer premises. Regarding cost of service allocation,
11 the Commission will be asked in a future rate case the extent to which each customer class
12 should bear responsibility for the cost of service of the BESS Project and CTG Project, as well
13 as all other aspects of the Ameren Missouri total cost of service.

14 **PISA Eligibility**

15 Q. Does Dr. Marke raise a concern that the CTG Project and BESS Project are
16 rate base additions to allow service to new customers?³

17 A. Yes. While Staff acknowledges that it may be imprudent for Ameren Missouri
18 to effectively waste the Rush Island interconnection rights by not installing some form of power
19 plant at the Rush Island site prior to September 1, 2028, as stated in the Staff Rebuttal Report

³ Dr. Marke Rebuttal, page 2, recommending that “Ameren Missouri provide positive affirmation that the attendant costs of this application should be borne by the cost causer, in this case, specifically, the hyperscale users that demand it.”.

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1 within the section “Conclusions on Need,” “Staff concludes without these projects, or a viable
2 alternative, Ameren Missouri will face capacity shortfalls if new large loads are introduced.”⁴

3 Q. Are the CTG Project and the BESS Project eligible for PISA treatment in light
4 of the relationship of the need for capacity and the facilitation of service to new
5 large load customers?

6 A. Possibly; however, there may be a situation in which PISA would not be eligible
7 for the CTG Project and BESS Project.

8 Page 69 of the Staff Rebuttal Report addresses the PISA eligibility of the CTG Project.
9 Pages 70-71 of the Staff Rebuttal Report addresses the PISA eligibility of the BESS Project.
10 As discussed in the Surrebuttal testimony of Blair Hardin, in light of Dr. Marke’s testimony,
11 Staff clarifies its statements regarding PISA eligibility of the CTG Project and the BESS Project
12 to state that these facilities “may” be eligible for PISA recovery.⁵ Whether all or a portion of
13 the rate-base additions that result from any CCN authorized in this case are
14 “rate-base additions that increase revenues by allowing service to new customer premises,”
15 will be a question needing resolution in the rate cases in which recovery is sought.

⁴ Staff Rebuttal Report, page 32. This section further states that “Staff further acknowledges that:

- Failing to utilize the Rush Island interconnection rights would represent a missed opportunity.
- These projects would enhance system flexibility, particularly in the event of early retirements of existing coal-fired or peaking natural gas generation.
- These projects would help address anticipated capacity requirements in MISO Local Resource Zone 5, especially if additional load growth occurs.”

⁵ The statutory authority for PISA account treatment is set out at Section 393.1400, RSMo. The definition of “Qualifying electric plant,” within that statute is “all rate-base additions, except rate-base additions for new coal-fired generating units, new nuclear generating units, or rate-base additions that increase revenues by allowing service to new customer premises.”

1 **Determination of Cost of Service Responsibility**

2 Q. Could you summarize the facts related to the transmission interconnection rights
3 at Rush Island?

4 A. Yes. As discussed by Shawn Lange, PE, in the Staff Rebuttal Report at
5 pages 45 – 46, for the CCN in this case, Ameren Missouri is utilizing the Generating Facility
6 Replacement in Attachment X Generator Interconnection Procedures of the MISO Open Access
7 Transmission Tariff, which allows Ameren Missouri to utilize the existing interconnection
8 rights of the Rush Island steam units. As discussed by Malachi Bowman at pages 14 – 15 of
9 the Staff Rebuttal Report, there is a time limit of September 1, 2028, by which a replacement
10 power plant must be placed in service to use the existing interconnection rights.

11 Q. How does the transmission interconnection relate to Dr. Marke's concerns?

12 A. The Rush Island site presents a unique window for a low-cost transmission
13 interconnection opportunity, which would be lost without development of that site in the near
14 future, regardless of whether the specific generation built would or would not be needed at this
15 time but-for providing service of new large load customers. It would not be reasonable to assign
16 the capacity benefiting from these low cost transmission rights solely to large load customers,
17 as would be the result of Dr. Marke's recommendation.⁶ It also may be imprudent for
18 Ameren Missouri to effectively waste those interconnection rights by not installing some form
19 of power plant at the Rush Island site prior to September 1, 2028, which may be inconsistent
20 with a determination that the CCNs sought in this case would not be needed but-for the
21 facilitation of service to large load customers.⁷

⁶ Staff would be concerned if the low-cost interconnection at the Rush Island site is simply assigned to large load customers, and in the future other customers will bear the costs of expensive transmission interconnections for future capacity needs when another generation unit is built and brought online.

⁷ See also, Staff Rebuttal Report at page 15.

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1 Q. Why is it important that the Commission defer decisions regarding the allocation
2 of the cost of service of the BESS Project and CTG Project to a future rate case considering all
3 relevant factors?

4 A. The Commission can and should be cognizant of the rate impacts stemming from
5 its decisions in this case; however, the Commission should actually decide the allocation of the
6 cost of service of the CTG Project and BESS Project in the subsequent rate cases in which
7 recovery for those assets is sought in addition to considering all relevant factors in
8 place at that time.

9 Q. If the Commission were to decide in this case that the 1,200 MWs of the BHEC
10 should be allocated to large load customers in future rate cases, would it be inappropriate in
11 future rate cases to allocate other generating resource cost of service to 1,200 MW of
12 large load customers?

13 A. No, it would not be inappropriate to allocate the cost of service of other
14 generating resources to 1,200 MW of large load customers, even if the BHEC were fully
15 allocated to those customers. Additional generating resource cost of service will be reasonably
16 allocable to large loads even if large loads were allocated the entire cost of service of the BHEC.
17 The BHEC would not be expected to provide net kWh production that approaches the annual
18 kWh consumption of 1,200 MW of high-load factor usage, which would meet what
19 Ameren Missouri characterizes as its “energy needs.”⁸ Similarly, the BHEC, as these projects
20 are not renewable resources, will not provide the Renewable Energy Credits (RECs) that will
21 be required under the Missouri Renewable Energy Standard (RES) associated with new large

⁸ For example, in the Direct Testimony of Matt Michels in EA-2025-0239, concerning Ameren Missouri’s application for a CCN for the Reform solar project to be located in Callaway County, Missouri, Mr. Michels testifies at page 2 that, “The [Reform] Project will meet the energy needs of existing and new customers, including new large load customers (“LLC”), consistent with the Company’s preferred resource plan (“PRP”).”

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1 loads, or the RECs that would be required to be retired on behalf of large load customers to
2 qualify for a proportionate RES waiver.⁹ Further, MISO capacity requirements will consider
3 Ameren Missouri's entire load requirements and entire generation capability; large load
4 customers will benefit from the entire Ameren Missouri generation fleet, even if allocated
5 dedicated plants.

6 Q. Could you summarize this issue?

7 A. Yes. While the BHEC is necessary for Ameren Missouri to allow service to new
8 large load customers, serving 1,200 MW of new large load will also require reliance on existing
9 Ameren Missouri assets, and potentially additional increases to Ameren Missouri's cost of
10 service through the acquisition of additional assets. Therefore, it is most reasonable to
11 determine the allocation of the cost of service of all such assets in a general rate case in which
12 all relevant factors may be considered.

13 **Administrative Complexity**

14 Q. If the Commission ordered that the LLCS segment of the LPS class¹⁰ should bear
15 all costs of service associated with the BHEC and be assigned the cost of the Big Hollow power
16 plants, could Staff perform the calculations to fully reflect that assignment or allocation?¹¹

17 A. Probably not.

⁹ For example, in the Direct Testimony of Matt Michels in EA-2025-0239, concerning Ameren Missouri's application for a CCN for the Reform solar project to be located in Callaway County, Missouri, Mr. Michels testifies at page 3 that, "The [Reform] Project will provide renewable energy credits ("RECS") that are needed to meet the Company's Missouri Renewable Energy Standard ("RES") obligations[.]"

¹⁰ In ET-2025-0184, new tariff sheets were promulgated creating the Large Load Customer Service Rate ("LLCS") as a subclass of Ameren Missouri's Large Primary Service Rate ("LPS") class.

¹¹ This is Staff's understanding of the result Dr. Marke seeks when he recommends, "First, I recommend that Ameren Missouri provide positive affirmation that the attendant costs of this application should be borne by the cost causer, in this case, specifically, the hyperscale users that demand it." Dr. Marke testimony, page 2.

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1 Q. In EO-2025-0154, concerning the service for large loads by Evergy Missouri
2 Metro and Evergy Missouri West, Mr. Kevin Higgins filed testimony on behalf of the
3 Data Center Coalition. In his rebuttal testimony, Mr. Higgins testified on page 29 that
4 “I would have every expectation that there would be an essential interdependence between
5 resources developed in response to new load growth and the provision of service to Evergy’s
6 current customers, both from a planning and operational perspective. Any vintage pricing
7 regime would have to fairly assess the system benefits that would be provided by the acquisition
8 of new resources.”¹² Would you expect similar recommendations to be made by large load
9 customers if Dr. Marke’s recommendation to allocate the cost of service of Big Hollow to large
10 load customers were implemented by the Commission?

11 A. Yes.

12 Q. Would it be a simple matter to track the value of the revenue from energy
13 generated at Big Hollow and the value of the capacity of the BHEC?

14 Q. No. As a practical matter, it would be very complicated to do so consistently
15 over time. For example, the resultant allocation of MISO capacity revenues would be very
16 different under a last-in first-out rationale, a first-in first-out rationale, or under simple
17 proration. If Dr. Marke’s recommendation to allocate the cost of service of the BHEC to large
18 load customers were ordered, litigation should be anticipated around how capacity values
19 should be calculated.

20 Regarding MISO energy revenues, while it is fairly straightforward to multiply the
21 generation of the CTG Project and the BESS Project (and the charging load of the BESS Project)

¹² As stated in his rebuttal testimony at page 27, Mr. Higgins uses the term “vintage pricing,” to refer to “the regulatory practice of setting higher prices for newer service, i.e., allowing price discrimination based on vintage of service. The term was coined in the 1960s to refer to the decision by Federal regulatory authorities to allow higher prices for natural gas contracts, which were regulated at the time, entered after a certain date.”

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1 by the applicable LMPs, the Commission would likely be called upon to review the prudence
2 of the specific bidding strategy of Ameren Missouri in each rate case. For example, the position
3 of the BHEC CTG relative to the Castle Bluff CTG in Ameren Missouri's MISO energy market
4 bids will determine which unit will operate more frequently and receive more energy revenue.

5 Q. What would happen when any of the capacity of the BHEC is unavailable due
6 to maintenance or outage?

7 A. While I don't think this is Dr. Marke's intended result, direct allocation theories,
8 if taken to an extreme, could result in a need for redundant capacity, which would actually
9 increase the risks of stranded assets for non-large load ratepayers. As discussed above,
10 in reality, large load customers will rely on the Ameren Missouri generation fleet as a whole for
11 safe and adequate service.

12 Q. Would it be possible, in a future case, to implement what you understand to be
13 the spirit of Dr. Marke's recommendation?

14 A. While the Commission need not address the future rate design of large load
15 customers in this docket, in general, yes, it would be possible to implement the spirit of
16 Dr. Marke's recommendation in a manner that is less administratively complex and that
17 provides fewer opportunities for manipulation or litigation.¹³ For example, it may be reasonable
18 to use the most recently-constructed generation as a surrogate for the value of capacity in a
19 competitive market for design of rates for competitive load, such as those served on the LLCS
20 segment of Ameren Missouri's LPS class.

¹³ It is likely that rate design of large load customers will be contentious in every case in which the rate design of large load customers is at issue.

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1 In ET-2025-0184, concerning creation of service to the LLCS subclass of
2 Ameren Missouri's LPS class, Ameren Missouri has made multiple commitments concerning
3 reporting, through the *Amended Non-Unanimous Global Stipulation and Agreement*.
4 These include, at paragraph 37, that:

5 The Company and stakeholders, including OPC, Staff, and customers,
6 will meet to determine the contents and confidentiality of an annual
7 compliance report to be provided to the Commission. This report will
8 contain information regarding:

9 (i) the number of new or expanded customers that are taking LLCS and
10 (ii) the total estimated load taking LLCS. Any other reporting
11 requirements will be determined as a result of the Company and
12 stakeholder discussions. Energy usage information will be provided on a
13 confidential and anonymized basis. The Company commits to meeting
14 with Staff and OPC at least annually, and on a highly confidential basis,
15 to provide updates on LLCS with the agenda to be mutually agreed to by
16 Staff, OPC, and the Company.

17 And at paragraph 51:

18 Within 30 days after the execution of any agreement relating to LLCS
19 with a LLCS customer, the Company will provide to the Staff the
20 executed agreement(s) and the following information with a level of
21 confidentiality commensurate with the confidentiality provisions in
22 place in this docket:

23 a) An updated capacity and demand forecast without the new LLCS
24 customer.
25 b) An updated capacity and demand forecast with the new LLCS
26 customer.
27 c) The boundary of Ameren Missouri's facilities serving the LLCS
28 customer in a format supported by the State's geographic information
29 system (GIS) software.
30 d) Evidence that Ameren Missouri has completed all internal
31 engineering studies supporting the interconnection, a description of
32 all interconnection upgrades and interconnection facilities needed for
33 the LLCS customer, and a complete copy of the interconnection
34 study. The Company will also provide a copy of the construction
35 agreement documenting all estimated costs related to interconnection
36 of the LLCS customer and provide how those costs will be recorded
37 on Ameren Missouri's books and records.

e) To the extent known to Ameren Missouri, the LLCS customer's full corporate name and registration information, and that of any and all parent companies.

The information provided through the reporting required under paragraphs 37 and 51 of the *Amended Non-Unanimous Global Stipulation and Agreement* in ET-2025-0184 will also constitute relevant factors for purposes of allocating the cost of service of the BHEC.

DR. MARKE'S REQUEST FOR A RATE IMPACT STUDY

Q. What is Dr. Marke's recommendation concerning rate impact studies?

A. At page 3, of his Rebuttal testimony, Dr. Marke states "I request that Ameren Missouri file in surrebuttal testimony what more than \$16 billion in planned capital expenditures ("CAPEX") in five years will mean to their existing customers' rates in the near future (five to eight-year timeframe). Restated, what can existing customers reasonably expect the percentage bill increase from their current bill to be moving forward for however many rate cases Ameren Missouri believes it will need to file and how much load they hope (or will need) to attract to recover the investments that more than double its existing rate base in such a short time frame." He also states, "To the extent that Ameren Missouri rejects this request, I recommend that the Commission order Ameren Missouri to provide a reasonable range of answers so no one can be accused of being 'caught off guard' by future rate relief requests."

Q. Does Staff oppose Dr. Marke's requested study?

A. Staff does not oppose Dr. Marke's request; however, Staff is concerned with the presentation of this information by Ameren Missouri in its surrebuttal testimony (or later) in this case, as no party will have sufficient opportunity for thorough review or adequate time for multiple rounds of discovery. Staff believes rate impact estimates are important context for the Commission to be aware of when deciding whether, or under what conditions, to authorize new

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1 power plants, and Staff provided its own modeling of the annual revenue requirements and
2 estimated allocated rate impacts of the CTG Project beginning on page 79 of the Staff Rebuttal
3 Report. However, as noted in Staff's Rebuttal Report, assuming agreement on the inputs and
4 the model, rate impact modeling is not a prediction of future rate impacts in that
5 Ameren Missouri's managerial decisions, actual inflation levels, actual rate case timing,
6 future Commission determinations, and future energy and fuel costs cannot be exactly
7 predicted. Therefore, with the caveat that the Commission understand that any modeling
8 presented by Ameren Missouri at or after the filing of this testimony by Staff will not and cannot
9 be vetted by Staff, Staff does not object to Dr. Marke's recommendation that Ameren Missouri
10 provide a rate impact study.

11 **SUMMARY OF RECOMMENDATIONS**

12 Q. Does the Commission need to determine, in this CCN case whether there are
13 rate-base additions that increase revenues by allowing service to new customer premises?

14 A. No. That determination is not necessary at this time.

15 Q. Should the Commission determine, in this CCN case at this time, how the costs
16 of any generation that is authorized in this case be allocated in future rate cases?

17 A. No. That determination is not necessary at this time as a CCN case does not
18 determine ratemaking. Staff recommends that the Commission reserve for future rate case
19 decisions the questions of the extent of PISA eligibility for any authorized power plants,
20 and the appropriate ratemaking and cost of service allocation of any authorized power plants.

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1 Q. Should the Commission require Ameren Missouri to file rate impact
2 information?

3 A. Staff notes that rate impact modeling is not a prediction of future rate impacts,
4 in that Ameren Missouri's managerial decisions, actual inflation levels, actual rate case timing,
5 future commission determinations, and future energy and fuel costs cannot be exactly predicted.
6 Therefore, with the caveat that the Commission understand that any new modeling presented
7 by Ameren Missouri will not and cannot be vetted by Staff, Staff does not object to Dr. Marke's
8 recommendation that Ameren Missouri provide a rate impact study.

9 **CONCLUSION**

10 Q. Does this conclude your surrebuttal testimony?

11 A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

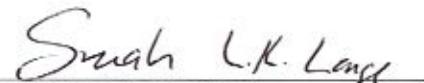
In the Matter of the Application of Union)
Electric Company d/b/a Ameren Missouri for)
Permission and Approval and Certificates of) Case No. EA-2025-0238
Public Convenience and Necessity Authorizing)
it to Construct a New Generation Facility and)
Battery Energy Storage System)

AFFIDAVIT OF SARAH L.K. LANGE

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW SARAH L.K. LANGE and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing *Surrebuttal Testimony of Sarah L.K. Lange*; and that the same is true and correct according to her best knowledge and belief.

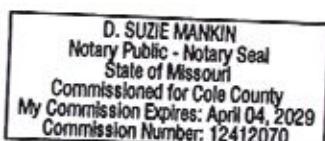
Further the Affiant sayeth not.



SARAH L.K. LANGE

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 14th day of January 2026.





Notary Public