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Case No. ER-2026-0143

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MISSOURI PUBLIC SERVICE COMMISSION

INDUSTRY ANALYSIS DIVISION

TARIFF / RATE DESIGN DEPARTMENT

CONFORMING DIRECT TESTIMONY
REVENUE REQUIREMENT

OF

SARAH L.K. LANGE

EVERGY METRO, INC., d/b/a Evergy MISSOURI METRO

CASE NO. ER-2026-0143

Jefferson City, Missouri
October 2026

*** Denotes Highly Confidential Information ***

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SARAH L.K. LANGE

EVERGY METRO, INC., d/b/a EVERGY MISSOURI METRO

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CONFORMING DIRECT TESTIMONY

OF

SARAH L.K. LANGE

EVERGY METRO, INC., d/b/a EVERGY MISSOURI METRO

CASE NO. ER-2026-0143

Q. Please state your name and business address.

A. My name is Sarah L.K. Lange, Economist in the Tariff/Rate Design Department of the Industry Analysis Division, Staff of the Missouri Public Service Commission, 200 Madison St., Jefferson City, Missouri 65101.

Q. Have you previously filed testimony before this Commission?

A. Yes. My case experience and credentials are attached to this testimony as Schedule SLKL-d1.

SUMMARY

Q. What is the purpose of this revenue requirement direct testimony?

A. In this testimony, I will:

- Provide an explanation of the status of Evergy Missouri Metro's (EMM) large load customers.
- Explain the calculation of Staff's "true-up" plug for net revenues from large customers, annualized for the expected conditions as of June 2026, including the assumptions used for the calculation of gross revenues and expenses.
- Explain the calculations and terms used in this case. Specifically, I will:
    - Explain annualizations in general and clarify what was included in this case.

- Provide additional explanation on how these customers were addressed in Staff's weather normalization and net system input in this case.
- Explain the limitations on the extent to which Staff was able to implement annualizations related to large loads in specific case issues such as production cost modeling and jurisdictional allocators.
- Explain how current and adjusted revenues for these customers are incorporated into Staff's overall revenue increase recommendation.

- Identify areas of concern with EMM's tariff management related to large customers.
- Set out amounts necessary for Staff expert Brooke Mastrogiannis to develop an estimated Fuel Adjustment Clause (FAC) base factor at true-up,
- Explain the expected future FAC impact of large customers and set out an option to mitigate harm to non-LLPS rate payers.

Q. Could you summarize the calculation of Staff's true-up plug for large customer revenue?

A. Yes. Annualizing the conditions expected during June of 2026 to a 12 month period will increase both EMM's revenues and its expenses. The net revenue associated with this annualization should be used to reduce the amount of EMM's revenue requirement which would otherwise be recoverable from other customers. However, because Staff recommends that all customers receive an increase in this case, the bills paid by large load customers will also be increasing. Therefore, it is appropriate to adjust the revenue requirement which is otherwise recoverable from other customers by the net revenue that the large load customers will be providing under the increased rates, which

is $51,026,843,[1] at Staff's midpoint rate of return, for an overall increase of approximately 3.64%.[2] These steps and the relevant amounts are set out in the Highly Confidential table, below.

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These calculations and amounts are detailed later within this testimony in the section, "How current and adjusted revenues for these customers are incorporated into Staff's overall revenue increase recommendation in this case."

Q. Are additional Staff witnesses providing testimony on this topic?

A. Yes. Claire M. Eubanks, PE, addresses policy concerning large load customers, and makes recommendations concerning reporting requirements;

[1] This is separate from the "Allowances for Known and Measurable Changes / True-Up Estimate" of $28,000,000 reflected in the Staff Accounting Schedules.
[2] This includes the "Allowances for Known and Measurable Changes / True-Up Estimate" of $28,000,000 reflected in the Staff Accounting Schedules.

J Luebbert addresses quantification of SPP-related expenses; Brooke Mastrogiannis addresses the FAC base factor calculations for the level of load discussed above, and Matthew R. Young discusses adjustments related to customer-specific infrastructure to serve large loads.

STATUS OF EMM'S LARGE LOAD CUSTOMERS

Q. How many large load customers does EMM serve?

A. *** [redacted] *** For purposes of Staff testimony, this customer is referred to as Customer A. *** [redacted] ***. For purposes of Staff testimony, this customer is referred to as Customer B. Based on information received to date from EMM, *** [redacted] ***. Staff's Data Request (DR) No. 0226.1, seeking clarification of customers and locations referenced by EMM, is attached as Highly Confidential Schedule SLKL-d2.

Customer A

Q. Who is Customer A?

A. Customer A is *** [redacted] ***. Per its Electric Service Agreement (ESA) it will operate *** [redacted] *** when it

concludes its ramp.[3] Customer A *** [redacted] f [redacted] ***. Contract capacity is used for the purposes of calculating several charges under schedule LLPS.

Q. Has Staff reviewed the hourly usage of Customer A or information concerning how it will use energy in various seasons or times of day, or other factors which may change the amount of energy it requires?

A. No. EMM has not provided that information in response to Staff's requests. EMM's response to Staff DR No. 0390[4] was that " *** [redacted] *** ".

Q. What is Staff's understanding of the ramp schedule for Customer A?

*** [redacted]

[3] EMM's response to DR No. 0232 stated that Evergy Missouri Metro and Evergy Missouri West are combined as a single Load Responsible Entity under SPP. The combined net peak summer demand for 2025 was 5,444 MW. The full contract capacity of Customer A is *** [redacted] *** of the current net peak demand of the combined Missouri Evergy jurisdictions.

[4] Staff DR No. 090 requested, " *** [redacted] *** "

[redacted] ***. Additional discussion of this issue is provided by Staff expert, Claire M. Eubanks, PE.

***
[redacted]
***

Q. Do you have any first-hand knowledge of the status of Customer A in its ramping?

A. Yes. *** [redacted] ***.

Q. What does Staff know about the status of electrical interconnection infrastructure at Customer A?

A. Staff is aware that immediately after the true-up cut off of June 30, 2026, sufficient infrastructure was in place for Customer A to average consumption of *** [redacted] *** kW per hour on July 1, 2026. The load for the first hour of July 1 was *** [redacted] *** kWh, and the highest load that day, *** [redacted] *** kWh, occurred at 10:00 PM. Note, metered 15 minute demands would tend to be greater than the metered 1 hour demand in any given hour, so the metered demand that Customer A experienced on July 1, 2026, is not currently known by Staff, but it could not have been less than *** [redacted] *** MW.

Q. How do data centers use energy?

A. Data centers use some amount of energy for data processing. That usage is not expected to be weather-sensitive. Data centers use energy for maintaining habitable workspaces and temperature-controlled storage spaces, if necessary. That usage is expected to be exactly as weather sensitive as any other commercial workspace and temperature-controlled warehouse, respectively. Data centers also use energy for process cooling, this usage is both process sensitive (meaning little energy is consumed if the data center is not actively processing or accessing data), and weather sensitive in most cases.

Q. What systems can be used for process cooling?

A. At a high level, data processors can be air cooled or water cooled. Air cooling is conceptually like the little fan the blows in a desktop computer. Water cooling is conceptually like the water jacket on the engine in your car, in which coolant is circulated around the hot parts, and that heat is absorbed into the coolant.

Q. What is a "closed loop," as that term is used in discussions of data centers?

A. Again, think of the cooling system in a conventional automobile. Coolant in the water jacket is absorbs heat from the operating engine, then travels into the radiator. The coolant rejects heat to the atmosphere through the fins of the radiator, and then is pushed by the water pump back into the water jacket. Under normal operating conditions, the same coolant is used over and over for many many cycles of heat absorption and rejection. The coolant travels in a closed loop. In contrast, a boat motor pulls water from the lake or river into its water jacket, the coolant absorbs heat from the engine, and then the heated coolant is discharged back into the lake or the river. The cooling system for a boat motor of this design is not a closed loop.

Q. In a closed loop system, how is the heat rejected from the coolant? What performs the job of a car radiator in the data center context?

A. In a data center closed-loop, an industrial evaporative chiller or an industrial compressor can be used to reject absorbed heat from the process that has been absorbed into the closed loop system into the atmosphere.

Q. What is an industrial compressor like?

A. An industrial compressor is like an air conditioner or a refrigerator. Heat is absorbed from the primary closed loop of coolant (coming from the processors) into a secondary loop of refrigerant. The primary closed loop rejects heat into the refrigerant loop. An electric motor compresses the refrigerant, and that extracts heat from the refrigerant into the atmosphere.

Q. What is an evaporative chiller like?

A. An evaporative chiller is like a person who is sweating.

Q. How does an evaporative chiller work?

A. An evaporative chiller works by placing water into contact with the thing to be cooled (in the case of a data center, the primary closed loop, in the case of a human, your skin) and as the water evaporates the residual water drops in temperature.

Q. Can the water placed into contact with the thing to be cooled be reused?

A. In part yes, and in part, no. If the water that is deposited onto the primary cold loop is colder than the fluid inside the primary closed loop, some heat will reject from the primary closed loop into the secondary loop of water. However, eventually, the secondary loop of water would obtain temperature parity with the coolant in the primary loop, or the secondary loop of water would be warmed by atmospheric conditions until parity with the primary loop is reached, or some combination of those two factors otherwise removes the ability of the primary loop to reject heat into the secondary loop. In practice, an evaporative chiller works at least in part through the evaporation of water into the atmosphere, dropping the temperature of the remailing secondary fluid. This effectiveness of this process is dependent on the wet bulb temperature.

Q. An industrial chiller uses electric energy like an air conditioner would. How does an evaporative chiller use electric energy?

A. An evaporative chiller must use electric energy to pump the coolant around the primary closed loop, and will generally require energy to pump the secondary loop up, over, and down the heat exchanger between the primary and secondary loops.

A fan may also be powered to move air across the heat exchanger to aid in evaporation. Note, the closed loop itself will also require energy to maintain circulation.

Q. Can evaporative chillers, compressive chillers, fans, process-area air conditioning, and other systems be co-located and used in tandem or sequence?

A. Yes. The ability to mix, match, and stack these techniques is limited only by the customer's ingenuity and budget.

Q. What factors would a customer consider in designing a comprehensive system?

A. As summarized in the S&P Global Market Intelligence Webcast "AI Infrastructure & Energy Resilience: Your Top Questions Answered," "the cost difference of these unit the, the, the [sic] pricing of those units is somewhat similar, but the operational cost longer term is sort of where that main difference is. So we talk about efficiency for data centers in terms of power usage effectiveness. It's a PPUE [sic] is what we would call it. You may have heard that acronym. So essentially like as that PUE goes up, that means your electricity bill is going up. As you use systems that don't consumer water, they use more electricity, ie that PUE number is a little bit higher. And so sort of operationally speaking, you're going to be your electric bill is going to be higher if you don't use water. Now, you know, the debate here is which is the greater sin? And so if you live in an area that's water stressed but has low carbon energy, well, that's an obvious choice, right? Just use the systems that don't consume water."[5]

[5] *https://gateway.on24.com/wcc/eh/863544/lp/5404269/06252026-ai-infrastructure-energy-resilience-your-top-questions-answered*

Q. What is a wet bulb temperature?

A. The wet bulb temperature is the "lowest temperature to which a person or an object can be cooled solely by the evaporation of water, given a constant barometric pressure. It is so named because its approximate value is obtained from a wet-bulb thermometer. Whereas a normal, dry-bulb thermometer measures the temperature of ambient air, a wet-bulb thermometer measures the temperature of a surface from which water has evaporated into a stream of ambient air. The bulb of a wet-bulb thermometer is covered in cloth, usually muslin, that has been soaked in water at ambient temperature and then subjected to a source of moving air."[6]

Q. What is the relationship between wet bulb temperature and the design factors summarized from the S&P presentation you referenced?

A. The propensity of an area to experience wet bulb temperatures that exceed an evaporative chiller's cooling ability is a limitation on reliance on an evaporative chiller, and would necessitate (1) not processing or accessing data when the relationship of humidity and temperature hits a certain point or (2) using some other type of chiller in place of the evaporative chiller or to supplement the evaporative chiller in the hours of the year in which the temperature and humidity are the highest.

Q. What is the status of the transmission, substation, and other interconnection infrastructure to serve Customer A?

A. Additional discussion is provided by Staff expert Matthew R. Young.

[6] *https://www.britannica.com/science/wet-bulb-temperature*

Customer B

Q. Who is Customer B?

A. Customer B is *** [redacted] ***, taking service on the LPS rate schedule as of the time of this filing. *** [redacted] ***. EMM bills the customer on the LPS rate schedule, with no minimum demand charges or security requirements. A complication for this case is EMM has requested restructuring of the LPS rate schedule, and that the gross revenue Customer B provides under current rates and restructured rates is not the same. For Staff's revenue annualization as of the update cut off, current LPS rates are used. For Staff's revenue annualization for the true-up plug, EMM's revenue-neutral restructured rates were used.[7]

Q. Is Customer B's usage annualized as of the end of the update period in Staff's direct case?

A. Yes, Customer B revenues, annualized as of the update cut off of December 31, 2025, were calculated by Amanda Rucker and reflected in the Net System Input ("NSI") used for Staff's production cost modeling and jurisdictional allocations and elsewhere in Staff's direct filing, at a level of gross revenues of *** [redacted] ***.

[7] In its workpapers, EMM included LPS rates as restructured, but designed to collect essentially the same revenue as current rates on a class basis.

CALCULATION OF TRUE-UP PLUG FOR NET LARGE LOAD REVENUE

Q. In general, what is the true-up plug and why is it used?

A. A true-up plug is a temporary adjustment to the revenue requirement calculation to essentially estimate conditions that will be in place as of the true-up cut off. A familiar example would be when a new power plant is being built, with an in-service date between the end of the update period and the true-up cut off. In that example, if including the plant increases the revenue requirement by an additional 10%, Staff would include a true-up plug to allow for meaningful local public hearings, useful class cost of service and rate design work, and to generally apprise the Commission of Staff's expectation of the overall increase that will be in rates taking effect at the end of the case.

Q. Why has Staff used a true-up plug in this case?

A. Staff's true-up plug in this case is related to new data center customers. Staff is aware of the Commission's interest in the issues related to large load customers, and the impact of large load customers on rates applicable to other customers. Just as Staff has historically used a true-up plug to estimate the impact of adding a new power plant for context during the case in chief of a rate case, Staff uses a true-up plug in this case to inform the Commission of the expected net impact of these customers on rates for all customers, to provide meaningful estimated rate impacts to the public for consideration during local public hearings and preparations for bill impacts, and to provide meaningful hearing opportunity to the Commission on these issues during the main portion of the hearing, in addition to necessary refinements during the true-up phase of the case.

Q. Does the Staff true-up plug reflect revenues, expenses, or both, associated with large customers?

A. The plug is calculated by annualizing revenues from Customer A and Customer B based on the conditions expected to be in place at the end of the true-up, as well as annualizing incremental cost of service increases expected to serve the customers at the level of usage used to calculate revenues. The plug is provided as the net revenues.

Q. How should the plug be understood by the Commission?

A. This case should not include any increases in rate base associated with Customer A or Customer B. Staff auditors will make adjustments to remove assets which should be entirely paid for by the relevant customer, such as transmission lines and substations. EMM has not disclosed any new power plants or capacity deals associated with these customers during the test period and through true-up. Therefore, the only additional cost of service EMM will incur to serve these customers under the conditions expected at the end of the true-up period are wholesale energy expenses – the cost of market energy, and the cost of SPP services and fees. Therefore, Staff provides the plug as the net revenue expected under the conditions anticipated at the true-up cut off, and the Commission can consider the value of the plug to be the amount that the net revenues from Customer A and Customer B will reduce the revenue requirement that would otherwise be applicable to all other ratepayers.

While Staff will provide additional revenue scenarios for Commission information and context, in recognition of the historic test year method relied upon in Missouri, Staff

has not recommended reaching beyond the true-up cut off to capture additional revenue growth, as opposed to basing the plug on the conditions expected to be in place during the period rates will be in effect, roughly January of 2027 – January of 2031.

Customer A

Q. Have you calculated the bill for Customer A under current LLPS rates at the various demands included in the ESA, as amended?

A. Yes. In addition to various demands, based on EMM's responses to Staff DR No. 0226, *** [redacted] ***. While this will be further discussed in section "Limitations on Incorporation of the True-up Plug", for purposes of estimating net revenues, Staff also calculated the bills for Customer A using *** [redacted] ***

continued on next page

***



***

These calculations are prior to any adjustment for Staff's recommended increase in this case.

Q. In section "Incremental Expense," you explain how energy expenses and other expenses were estimated. Please provide the expenses and net amounts associated with each of the capacity and load factor scenarios provided above.

A. Those amounts are provided on the following page:

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***

[redacted]

***

Customer B

Q. Have you calculated the bill for Customer B under current LPS rates and under the requested EMM restructured LPS rates, on a revenue neutral basis?

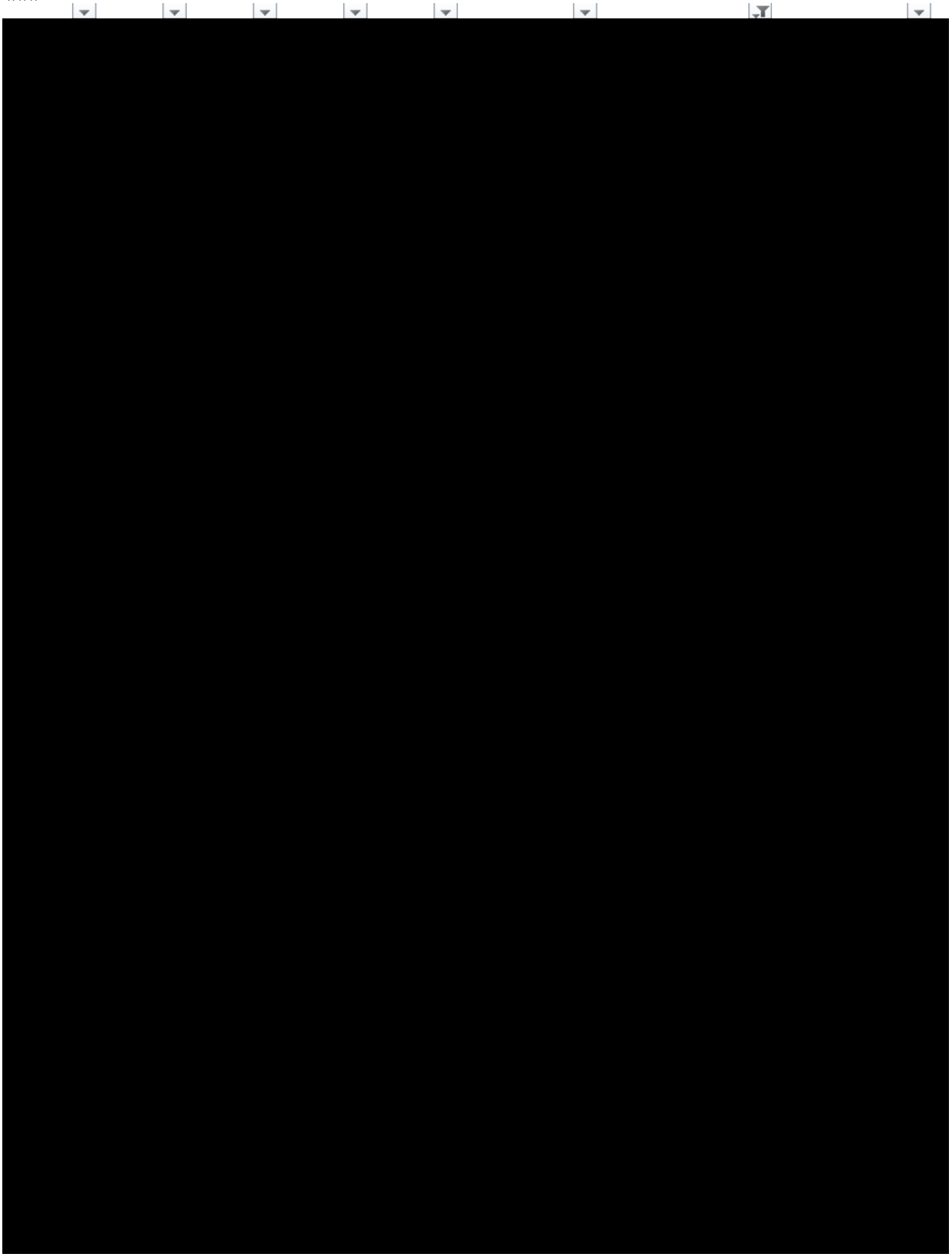
A. Yes. EMM's responses to Staff DR Nos. 0226 and 0227.1 concerning Customer B indicate an expected peak demand of *** [redacted] ***. In the table below, highlighted in green, is Customer B's annualized gross revenue calculation, before incorporation of the recommended increase, *** [redacted], *** which is used for the true-up plug calculation, and for the *** [redacted] ***. This table also includes calculated gross revenues under the indicated circumstances on the current LLPS rates. Calculating the bills for this customer on the LLPS rate schedule incorporates minimum billing demand charges:

*** [redacted] ***

Q. Please provide the expenses and net amounts associated with each of the capacity and load factor scenarios provided above.

A. Those amounts are provided on the next page:

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Q. Do the restructured rates produce higher or lower revenues than the current rates?

A. It depends on the demand and usage assumptions used. The revenues under current rates, and the revenues under the restructured rates at the current overall rate level are illustrated below:

*** [redacted] ***

Q. What scenario did Staff use for calculation of the true-up plug?

A. *** [redacted] ***

Q. What further adjustment is necessary to calculate the true-up plug for Customer B?

A. It is necessary to remove the annualized energy and revenue calculated by Amanda Rucker. The level of revenues calculated as of the end of the update period, already reflected in the cost of service as calculated by Amanda Rucker is subtracted out of the true-up plug.

Q. What are the net of these amounts based on Staff's calculation of Customer B net revenue on LPS rates?

A. As detailed in the table below, the net revenue difference prior to gross-up for the increase in this case, is *** [redacted] ***. The annualized energy usage at the update is about *** [redacted] *** of the true-up annual energy usage, and the difference between demand annualized at update and demand annualized at true-up is about *** [redacted] ***.

***

[redacted]

***

INTERACTION WITH OTHER ELEMENTS OF THIS CASE

The Annualization Process

Q. Can you explain what annualization means?

A. Yes. Annualization refers to an adjustment that is made to reflect known conditions at the end of the test period. For example, if mailing a bill costs $0.50 cents per bill for 100 bills each month, the mailing expense is $50 per month. If at the end of the test period, mailing expense increases to $0.75 per bill, then the earlier months would be annualized to $75 per month rather than left at the actual level of $50 per month.

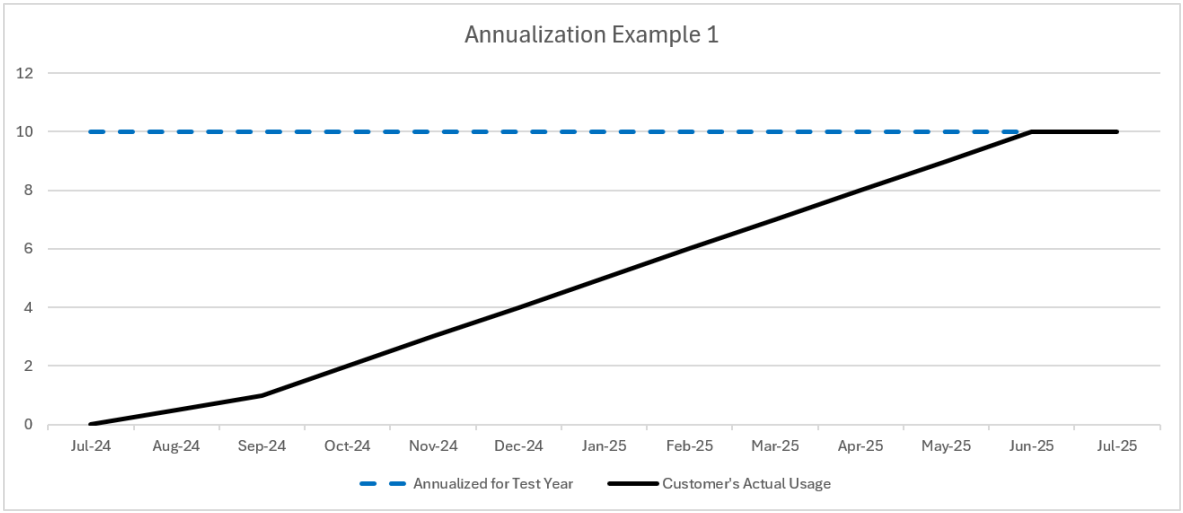
Q. How does Staff annualize for customer growth?

A. For classes like residential, small general service, medium general service, large general service, and lighting, Staff performs a rate code-level customer growth adjustment and rate switching adjustment, which accounts for the impact in change of customer levels through the test period, and adjusts the total class usage based on the average usage per customer by rate code within that class.

For the large power service class and for special tariffs for very large customers, Staff reviews each customer's data and performs single customer annualizations if warranted in its judgment and discretion.

Q. Can you provide an example of a large customer growth annualization?

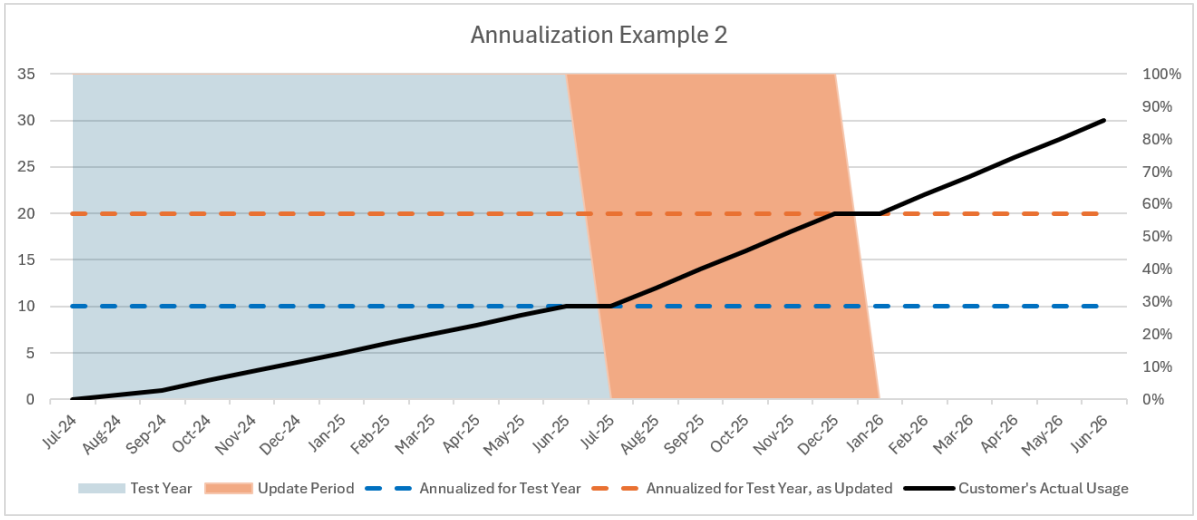
A. Yes. Using the periods in place in this case, a customer begins taking service in August of 2024, and increases its load through July of 2025, at which point it is at a demand of 10 MW, as shown below:



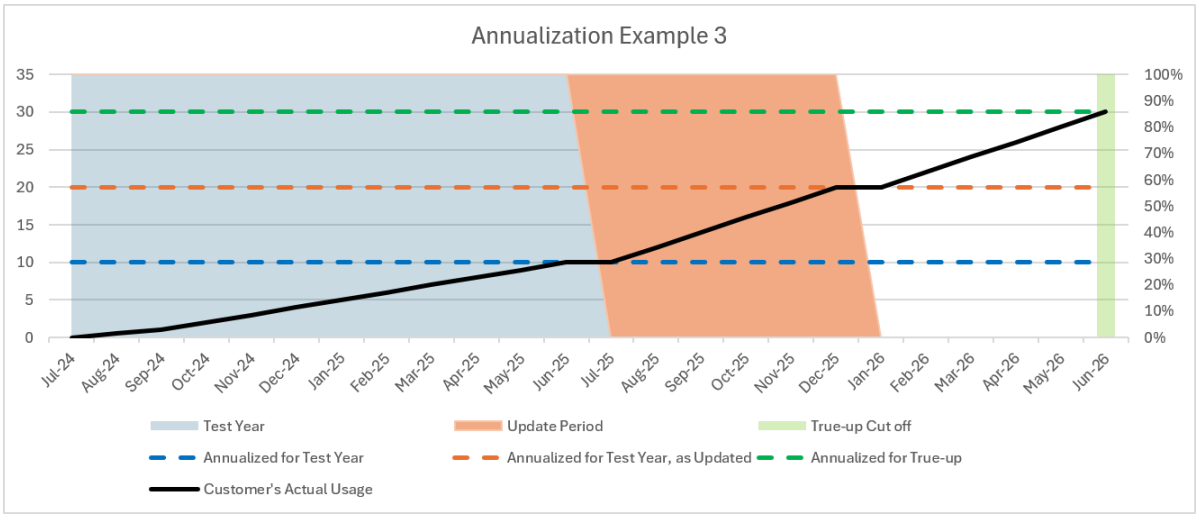
Staff would conduct discovery from EMM to learn EMM's expectations for this customer. For example, hypothetically, this customer might be in some sort of seasonal business where demand increases from the fall to the summer, and then drops back off, with that pattern repeating in a cycle. If so, it would not be necessary or appropriate to annualize the customer's demand to a constant level. However, if the customer is simply ramping up, as is the case in this example, for this test period, the appropriate annualization would be 10 MW. Meaning, Staff would recalculate this customer's bills as though they had used 10 MW of demand in every month, concurrent with a reasonably annualized energy usage level.

If an update period is in place, Staff would review additional demand and usage data for the months after the test year ends, up until the end of the update. Annualization Example 2, below, shows the customer continuing to increase its usage and demand, and is at 20 MW at the end of the update period. In this case, it would be reasonable to

annualize for 12 months of usage at a demand level of 20 MW, concurrent with a reasonably annualized usage level.



Finally, in cases where a true-up adjustment for individual customer growth is warranted, another review would occur when true-up data becomes available. In the case of our example customer, as shown in Annualization Example 3, a further annualization is warranted, this time reflective of the demand of 30 MW with concurrently adjusted usage:



Q. Which of these annualizations is "right?"

A. Each is appropriate as of the particular point in time. At the end of the case, the annualization based on the true-up cut-off demand would be the appropriate one to use, but at the time of the utility's direct filing, the Test Year annualization was appropriate and at the time of Staff's direct filing, the Update Period annualization was appropriate.

Q. If the update period annualization would be appropriate for the time of Staff's direct filing, why have you provided information to annualize the large customers as of true-up?

A. Staff provides true-up plugs to improve the relevance of its direct filing, and for making this information available to Commission as soon as possible in the context of the regular rate case testimony and hearing, as opposed to the accelerated true-up portion of the case. This also provides more accurate information regarding Staff's overall rate increase recommendation provided through local public hearings and outreach efforts.

Weather Normalization and Net System Input

Q. Please provide an explanation of the extent to which large customer usage is included in weather normalization factors and how each large customer's usage is addressed in Staff's Net System Input.

A In general, Staff needs hourly load by class to annualize class loads for changes in the number of customers within the class, typically performed on the basis of average usage within that class. Where customers who are unusual for a class are

located within a class and then leave that class, especially if they are atypically large for that class, hourly usage for that customer is needed to remove that customer from the class's hourly load prior to beginning the weather normalization process. When weather normalization is complete, the hourly loads are compiled for Net System Input ("NSI"), which is used in Staff's production modeling and for calculating jurisdictional allocators.

The same is also true for introducing a new large customer or annualizing significant increases in usage related to a customer.

Q. For what issues did Staff review the NSI to determine if an annualization was needed?

A. Staff reviewed 4 issues:

1. Construction power at *** [redacted] ***,
2. Load at Customer A annualized for true-up,
3. Load at Customer B annualized at update,
4. Load at Customer B annualized for true-up,

Q. Please explain the issue and treatment related to construction power.

A. During the test period, *** [redacted] *** Staff's NSI includes an annualized level as

of the update period, which is subject to true-up, which has been weather normalized within that class.

Q. Please explain the issue and treatment related to the second issue, load at Customer A annualized for true-up.

A. *** [redacted], *** Staff's NSI does not include an annualized level due to lack of detailed information on the timing and magnitude of usage. Instead, this load will be addressed in Staff's true-up plug.

Q. Please explain the issue and treatment related to the third issue, load at Customer B annualized at update.

A. As explained in the testimony of Staff expert Amanda Rucker, Staff annualized the usage of *** [redacted] ***. Staff's NSI includes that annualized level as of the update period, which is subject to true-up.

Q. Please explain the issue and treatment related to the fourth issue, load at Customer B annualized for true-up.

A. *** [redacted]

[redacted], *** Staff's NSI does not include an annualized level. Instead, this load will be addressed in Staff's true-up plug.

Limitations on Incorporation of the True-up Plug

Q. Are the kW and kWh associated with the true-up plug included in Staff's NSI for performing production cost modeling or calculating jurisdictional allocation?

A. No. The kWh and kW associated with the true-up plug are not included in Staff's production cost modeling or in Staff's calculation of the jurisdictional allocation factors. Detailed information about usage patterns, the portion of load that is responsive to weather, demands by month, and template hourly load information would be needed to do the modeling and calculations in the production cost modeling, or to calculate the peaks for jurisdictional allocation factors. Also, similarly detailed information about load and load growth in other jurisdictions would also be necessary to calculate jurisdictional allocation factors that take into account load and demand growth in the EMM jurisdiction. While it may be reasonable in future cases to impute growth into historic load shapes for some or all of these purposes, or to utilize information related to the actual energy consumption for different processes at each customer's location, at this time there is simply no reasonable basis to perform these calculations at the level of detail necessary.

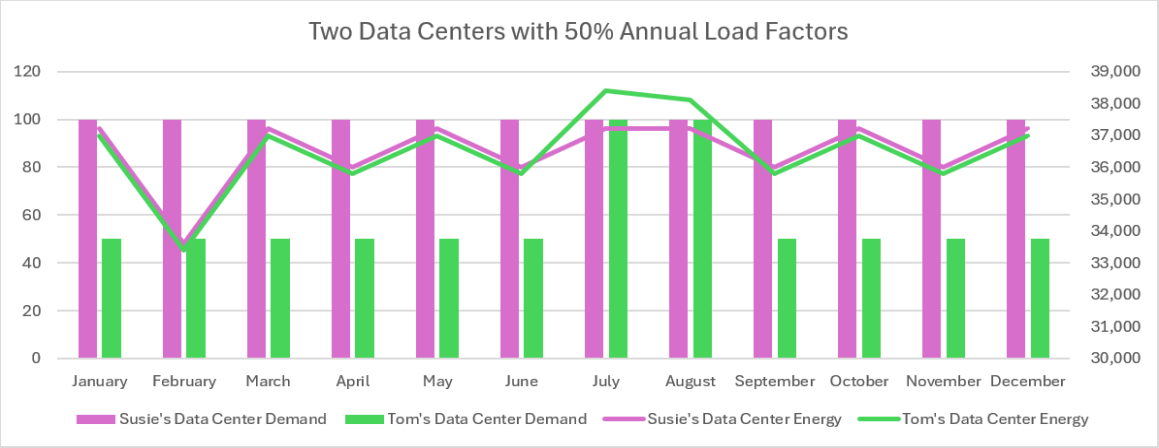
Q. Can you provide an example of different load patterns producing the same load factor?

A. Yes. In the example below, Susie and Tom each operate a data center.

> Susie's data center is located in an area where the temperature is a high of 60 degrees each day, with no seasonal temperature variations. Sally's data center requires 10 MW to circulate cooling water, and 90 MW to run processes. It is up and running client

requests about half the time, and it has an annual load factor of exactly 50%.

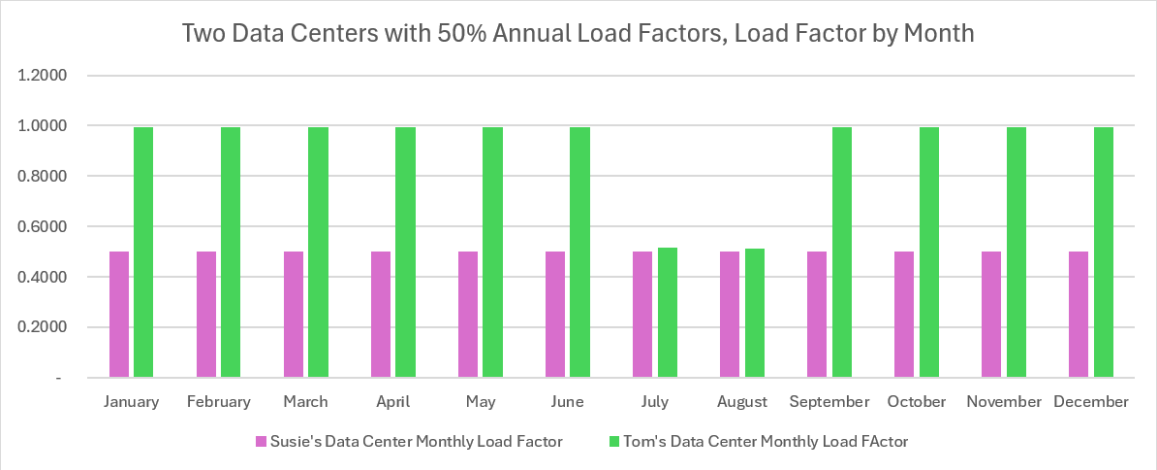
Tom's data center is located in an area with seasonal weather variation, and in July and August there are three or four afternoons in each month where the temperature is incredibly hot and humid for a few hours. Tom's data center requires 50 MW to run chillers on those hottest and most humid hours of the year. The rest of the year Tom's data center requires 5 MW to circulate cooling water, and 45 MW to run processes. It runs those processes almost constantly, and it has an annual load factor of exactly 50%.



Q. In this example, how do the monthly load factors of the two customers compare?

A. The monthly load factors are very different. As shown in the graph below, Susie's Data Center has a 50% load factor each and every month, and a 50% annual load factor. However, when Tom's data center requires cooling, the load factor decreases dramatically because the demand in those months are much higher. Tom's Data Center has an annual load factor of 50%, but monthly load factors of 99.42% in months without cooling, and 51.61% in months with cooling. Tom's Data Center operates with a relatively

low demand and a high load factor in months without cooling, and at a relatively high demand and a low load factor in months with cooling.



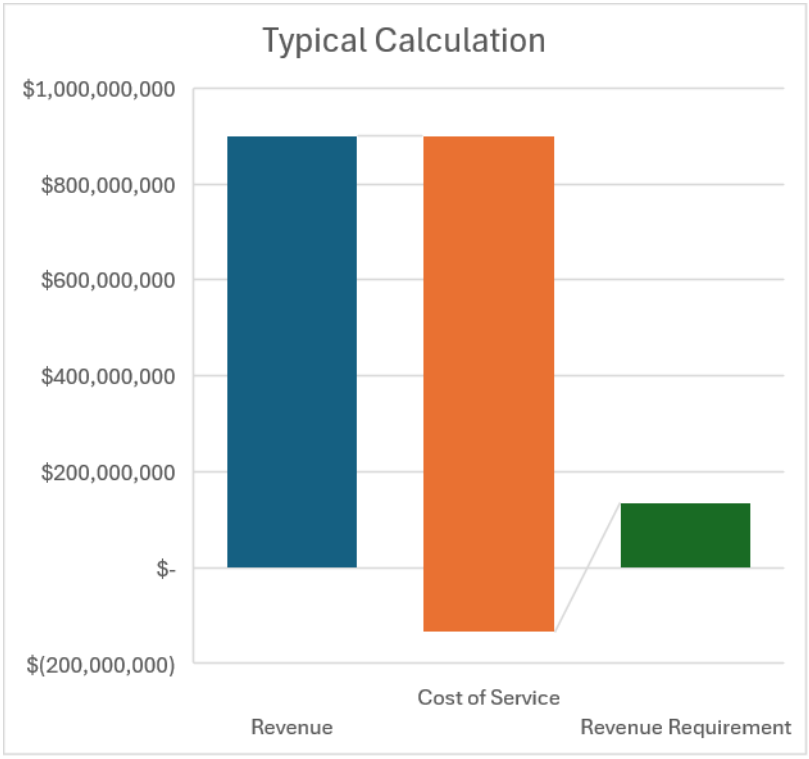
Q. How does this example show the difficulty of incorporating data center load into Staff's NSI used for production cost modeling and calculation of jurisdictional allocators in this case?

A. At this time, the extent of the information EMM has provided in response to Staff DRs is *** [redacted] ***. However, the exact times of those peaks matter to demand-related calculations, and the relationship of peaks by month and load factors by month matter for NSI imputation and jurisdictional energy-related calculations.

How current and adjusted revenues for these customers are incorporated into Staff's overall revenue increase recommendation in this case.

Q. In a typical rate case, how is the revenue requirement calculated?

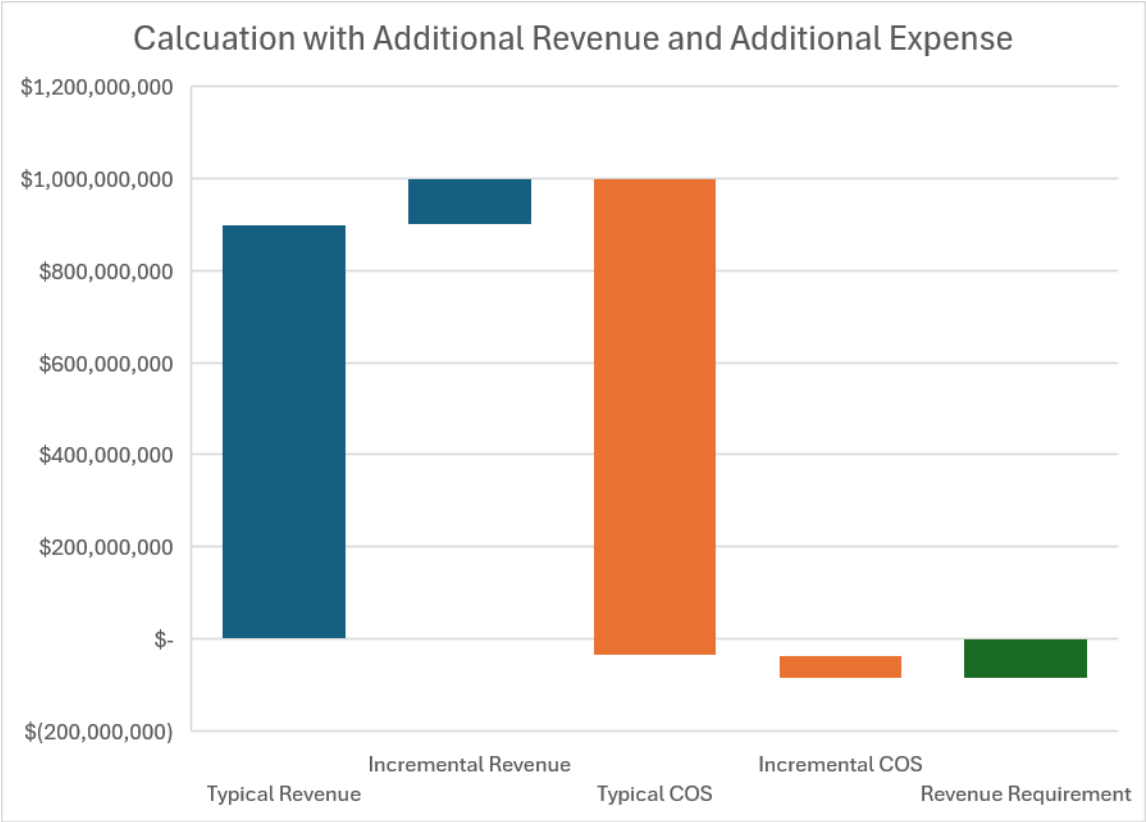
A. The revenue requirement is the difference between revenues under current rates, and the cost of service net of other revenues. An illustration of the typical calculation of a Revenue Requirement is set out below:



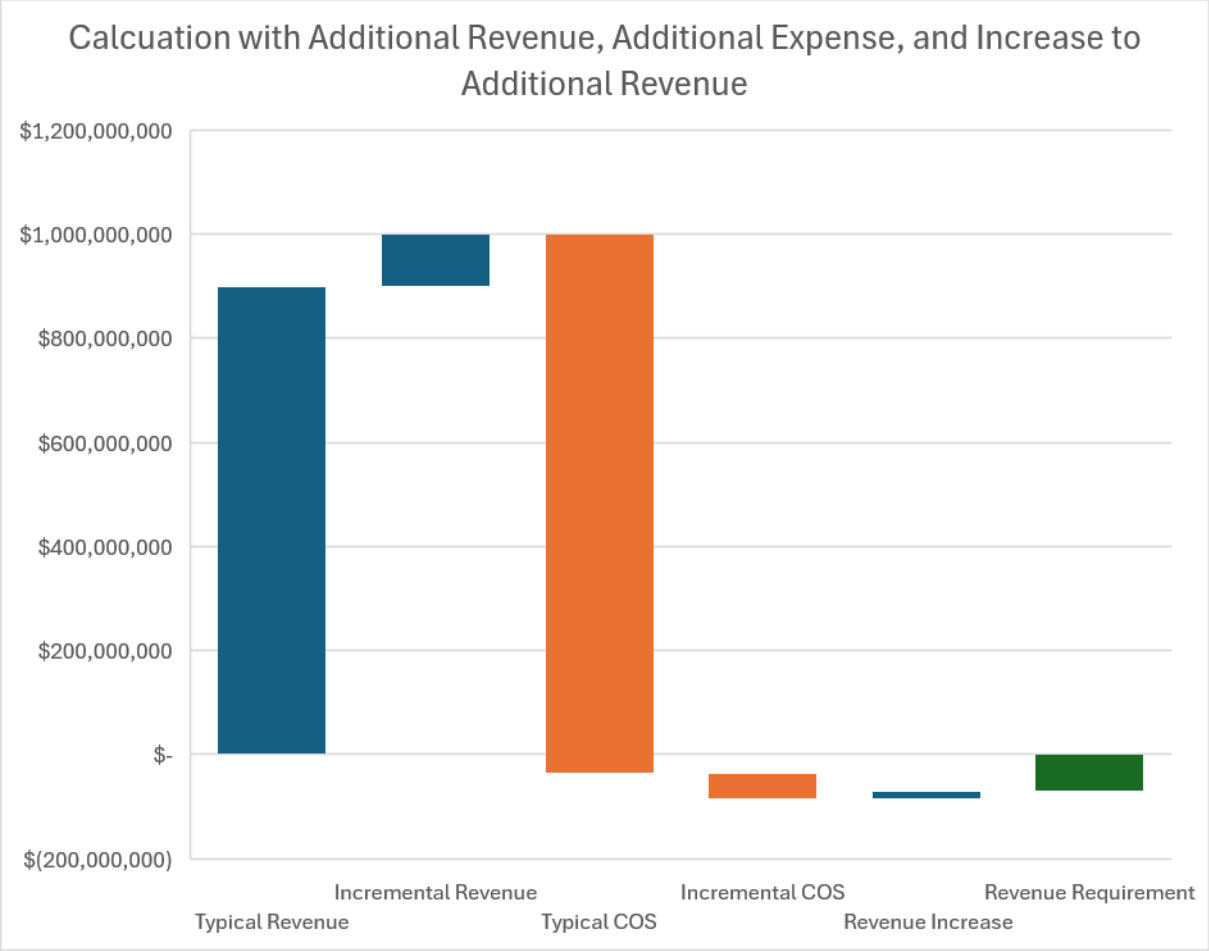
Q. What does the true-up plug do in this case?

A. The true-up plug captures the annualized revenue and the annualized expense based on the conditions expected during June of 2026 for a 12 month period. Staff includes this plug to provide the best information available to the Commission concerning the impacts of large loads as early in this case as is possible. The net revenue associated with this annualization should be used to reduce the amount of EMM's revenue requirement which would otherwise be recoverable from other customers.

An example of this calculation is set out below, incorporating hypothetical levels of additional revenue and the additional expense separately.



However, because Staff recommends that all customers receive an increase in this case, the bills paid by large load customers will also be increasing. Therefore, it is appropriate to adjust the revenue requirement which is otherwise recoverable from other customers by the net revenue that the large load customers will be providing under the increased rates. An example of that calculation using hypothetical values is set out below:



Q. What are the revenues and cost of service calculated in this case?

A. Staff experts Kim Cox, Amanda Rucker, and Randall T. Jennings calculated normalized and annualized revenues and billing determinants for the test year, as updated through December 31, 2025. The total rate revenues calculated are $898,658,443.[8] However, that number includes the revenue from charges such as

[8] Additional non-rate revenues are also calculated in Staff's Accounting Schedules, which includes transmission revenue, rent revenue, and other revenue not received from customer bills. Further, revenue from miscellaneous charges for tariffed rates such as returned check charges, are additional retail revenues. Therefore, the percentage increase included in Staff Accounting Schedules shows the percentage increase to current rate revenues, which will differ from the actual percentage increase applicable to rates that are changing in a given rate case.

the solar block charge and battery fees that are not rates that will change in this rate case. The revenue from rates that will change in this rate case is $899,422,100. Without the large loads adjustment, the amount that would be recovered through new rates is $982,722,925, which is the total Missouri jurisdictional retail cost of service.

Q. Excluding the true-up plug, what increase would generally be applicable, as a percent of revenue from rates subject to change in this case?

A. Staff would generally recommend a rate increase of $84,485,282 as of the update cut off. This would mean customer bills would increase approximately 9.41%, all else being equal.

Q. What incremental revenues are included in the true-up plug?

A. It is reasonable in this case to incorporate an additional *** [redacted] *** in rate revenue from Customer A, reflecting a single year of revenue on the LLPS tariff at a demand of *** [redacted] % *** load factor, and a total of *** [redacted] *** in Customer B rate revenue, reflecting a single year of revenue on the LPS tariff at a demand of *** [redacted] *** load factor. However, the total rate revenues already include *** [redacted] *** of Customer B revenue, annualized as of the update cut off of December 31, 2025. The net of these amounts for the true-up plug is *** [redacted] ***. The total additional revenue for the true-up plug for Customers A & B, before this rate increase, is *** [redacted] ***.

Q. What incremental expenses are included in the true-up plug?

A. It is reasonable in this case to incorporate an estimate of the additional expense that will be incurred to procure energy to serve Customer A at

a demand of *** [redacted] *** load factor and Customer B at a demand of *** [redacted] *** load factor. As with revenues, because the usage of Customer B annualized for December 31, 2025, is already included in Staff's production modeling and other cost of service calculations, the true-up plug only calculates the expenses associated with the incremental demand and energy of Customer B between the update level and the true-up level. Those incremental expenses for Customers A & B total to *** [redacted] ***.

Q. Is the true-up plug simply the incremental revenue minus the incremental expense?

A. No. The true-up plug cannot be calculated as the incremental revenue for Customers A & B of *** [redacted] *** minus the total incremental expenses for Customers A & B of *** [redacted] ***, because the total revenues from Customers A & B will increase as an outcome of this case. If the Commission increases rates in this case for all customers by 9.41%, then the incremental revenue from these customers will also increase by that percentage.

Q. How does Staff solve for the increase applicable to all customers where a portion of that increase will be offset by that same increase being applied to the incremental revenue of Customers A & B.

A. Staff algebraically solves for the level of increase that increases all revenues, including that of Customers A & B, that will produce the total Missouri

jurisdictional retail cost of service required. The resulting revenue requirement as a dollar value is $33,458,439, reflecting a true-up plug of $51,026,843.[9]

Q. What is the Revenue Requirement as a percentage of revenue from rates subject to change in this case?

A. As a percentage of revenue from rates subject to change in this rate case, the Revenue Requirement is a 3.64% increase.

CONCERNS WITH EVERGY'S TARIFF ADMINISTRATION

Q. Did Staff include any revenue from interim capacity charges in its revenue estimate at this time?

A. No. The EMM LLPS tariff includes the following provision:

> INTERIM CAPACITY
>
> If the Company determines that the Customer's load cannot be served by the Company's existing system capabilities, the Company may enter into specific market contract agreements to provide the necessary capacity requirements of the Customer until sufficient system capacity may be supplied by the Company. The Customer and the Company must mutually agree on the terms for the Interim Capacity procured by the Company pursuant to an Interim Capacity Agreement. The Customer shall be subject to an additional demand charge (the "Interim Capacity Adjustment") calculated according to the terms of an Interim Capacity Agreement, with Customer responsible for the full costs thereof and the terms of the Customer's Interim Capacity Agreement.

Q. EMM's responses to DR Nos. 0322.2 and 0322.4 indicate that there is a system wide need for additional capacity including large load, but that EMM has not utilized its ability to recover the revenue from large load customers under the Interim

[9] This is inclusive of the "Allowances for Known and Measurable Changes / True-Up Estimate" of $28,000,000 reflected in the Staff Accounting Schedules.

Capacity provisions of its LLPS tariff. As discussed by Staff expert Claire M. Eubanks, PE, it appears that EMM has not analyzed whether "the Customer's load cannot be served by the Company's existing system capabilities." If the Commission determines that an interim capacity charge should be applied to LLPS customers, the revenue associated with LLPS customers will need to be accordingly adjusted for purposes of establishing rates in this case.

Q. Are there elements of the Customer A ESA that are not apparently consistent with the Commission's order in EO-2025-0154 and the LLPS tariff?

A. Yes. As discussed by Staff expert Claire M. Eubanks, PE, the ESA with Customer A includes *** [redacted] ***. Each of these provisions has a practical effect on the level of demand that is the basis for the calculation of the 80% minimum demand provision. Commission resolution of these issues could result in adjustment to the revenue associated with LLPS customers which will need to be accordingly reflected for purposes of establishing rates in this case. EMM's response to DR No. 0410 is attached as Highly Confidential Schedule SLKL-d3, and is further discussed by Staff expert Claire M. Eubanks, PE.

Q. *** [redacted] ? ***

A. Yes. *** [redacted] ***. The *** [redacted], *** received in response to Staff DR No. 0392, is attached as Highly Confidential Schedule SLKL-d4.

Q. Is EMM appropriately calculating the minimum bill for Customer A?

A. No. The LLPS tariff states:

> MINIMUM MONTHLY BILL
> Customers taking service under Schedule LLPS shall be subject to a Minimum Monthly Bill that includes and is the sum of each of the following charges:
> 1. Demand Charge;
> 2. Customer Charge;
> 3. Grid Charge;
> 4. Reactive Demand Adjustment;
> 5. Other Demand-Based Riders approved by the Commission in the future; and,
> 6. Cost Stabilization Rider.
> The Customer's Minimum Demand shall be used to determine these charges.

EMM's response to Staff DR No. 0415, attached as Highly Confidential Schedule SLKL-d5, includes the following,

*** [redacted] ***.

Q. Can you explain the inconsistency between the tariff provision and the EMM practice?

A. Yes. *** [redacted] ***.

Q. Are there other areas of concern with the LLPS tariff and EMM practices?

A. Yes. While additional review is occurring and discovery is not complete, Staff notes the following areas of concern at this time *** [redacted] ***:

1. *** [redacted], *** discussed in response to Staff DR No. 0393, attached as Highly Confidential Schedule SLKL-d6.

2. *** [redacted], *** discussed in response to Staff DR No. 0407, attached as Highly Confidential Schedule SLKL-d7.

INCREMENTAL EXPENSES AND THE FAC

Incremental Expense

Q. How did Staff calculate the incremental expense used to calculate the net revenue associated with each large customer?

A. For each month, Staff calculated the demand and energy for each customer at the level annualized for true-up. Because Customer B's usage at the level annualized for the update is included in NSI and production cost modeling, Staff found the difference between the true-up level and the update level, and used that differing amount for calculating incremental expense. The resulting MWh and MW, by month, were multiplied by estimated energy expense per MWh, and multiplied by estimated transmission expenses per MWh and MW, as appropriate.

Q. How did Staff calculate the incremental energy expense used to calculate the net revenue associated with each large customer?

A. Staff used a load-weighted average energy expense per MWh for each month, and applied that value to the MWh of load for each month.

Q. Does Staff's estimation of incremental energy expense consider the load factors specific to each net revenue scenario?

A. Yes. Staff relied on Evergy's most recently provided "Incremental Cost Analysis Study by Load Factor," for hourly load profiles to apply to SPP Day 2 or

Day Ahead (DA) LMPs for load.[10] Those weighted average LMPs, by month and by load factor, are set out below, using the Staff normalized DA LMPs:

	January	February	March	April	May	June	July	August	September	October	November	December
20% LF	$ 40.26	$ 33.68	$ 17.09	$ 31.26	$ 35.13	$ 33.97	$ 42.35	$ 33.84	$ 33.97	$ 34.02	$ 32.44	$ 23.18
30% LF	$ 38.05	$ 32.94	$ 15.85	$ 29.62	$ 33.90	$ 32.68	$ 40.01	$ 32.14	$ 32.43	$ 32.51	$ 31.16	$ 21.39
40% LF	$ 38.10	$ 33.43	$ 15.94	$ 29.38	$ 33.73	$ 32.28	$ 39.17	$ 31.51	$ 31.85	$ 32.20	$ 31.15	$ 21.39
50% LF	$ 37.68	$ 32.91	$ 15.65	$ 28.87	$ 33.26	$ 31.76	$ 38.36	$ 30.96	$ 31.27	$ 31.67	$ 30.77	$ 21.00
60% LF	$ 36.88	$ 31.72	$ 14.99	$ 27.95	$ 32.30	$ 30.78	$ 37.18	$ 30.14	$ 30.30	$ 30.72	$ 29.97	$ 20.19
70% LF	$ 36.27	$ 30.88	$ 14.53	$ 27.32	$ 31.67	$ 30.16	$ 36.43	$ 29.64	$ 29.68	$ 30.09	$ 29.41	$ 19.60
80% LF	$ 36.27	$ 30.83	$ 14.50	$ 27.23	$ 31.57	$ 30.04	$ 36.26	$ 29.51	$ 29.54	$ 29.97	$ 29.36	$ 19.57
90% LF	$ 36.29	$ 30.67	$ 14.46	$ 27.09	$ 31.38	$ 29.77	$ 35.91	$ 29.28	$ 29.26	$ 29.76	$ 29.20	$ 19.49
100% LF	$ 35.50	$ 29.64	$ 13.82	$ 26.30	$ 30.55	$ 28.92	$ 34.95	$ 28.63	$ 28.44	$ 28.94	$ 28.51	$ 18.76

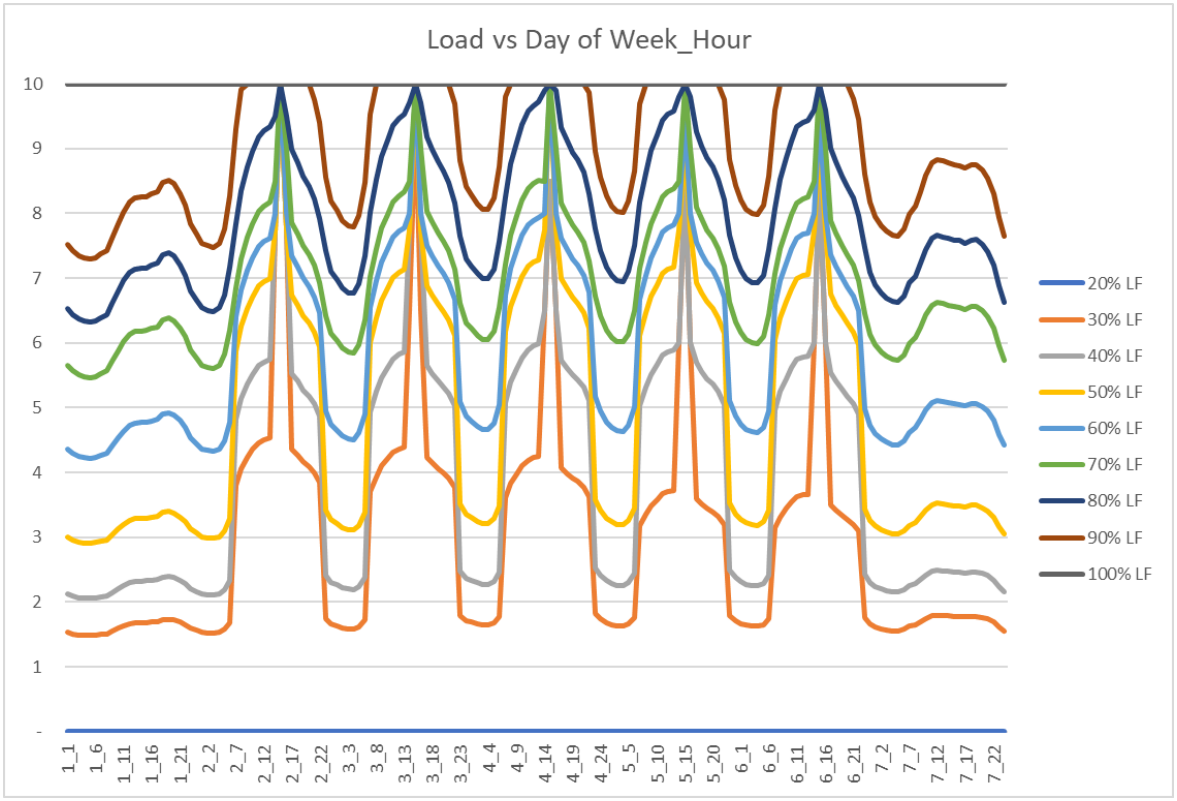
Q. How do DA LMPs relate to the cost of serving large customers?

A. Like all other customers, the energy that EMM sells to its large customers is purchased at wholesale through the SPP integrated marketplace. While other expenses and revenues will be incurred or received for EMM's purchases of energy to serve its retail load, the bulk of those transactions are transacted in the DA market. At this time, particularly in light of the limited information available about either hourly or intra-hourly loads of large customers, it is reasonable to focus on the DA LMP as the basis of energy expense for serving large customers.

Q. Are the hourly load profiles provided in the "Incremental Cost Analysis Study by Load Factor," reliable for production cost modeling?

A. No. These load profiles are uniform for the type of day, distinguished by whether or not a day is a week day or a weekend. The graph provided by EMM in its referenced workpaper is reproduced below:

[10] File, "2025 Incremental Load Cost Analysis _CONF.xlsx," provided by email, "RE: [EXTERNAL]BEDR-2025-1636/1637 - EMM/EMW Eco Devo Riders: Request for Supporting Documentation [CONF]," from Anthony Westenkirchner to Tracy Johnson, J Luebbert, and Mark Johnson, on May 1, 2025, updated with prices provided in file, "CONF_2026 Incremental Load Cost Analysis_Workpaper.xlsx," provided by email to Travis Pringle related to BEDR-2026-1837, on or about June 10, 2026.



Q. Is this usage pattern consistent with what you would expect for a data center?

A. No. I would expect longer "up" times, and I would expect seasonal variability associated with cooling load.

Q. What is the value of this load profile for purposes of your calculation of net revenue provided by large loads?

A. Particularly at the relatively higher load factors actually used in Staff's calculation of net revenues, these load profiles are useful to generally reflect some level of energy usage variation over time, in a manner that will generally coincide with higher usage during times of average high use, and lower usage during times of average low use. In other words, these load profiles result in a more conservative

(i.e., friendlier to EMM) view of net revenue from large customers, than would be accomplished with an around-the-clock average LMP which is the practical alternative to use of these load profiles.

Q. How were incremental transmission expenses estimated?

A. The incremental demand per kW month was multiplied by a value estimated by Staff expert J Luebbert as the sum of SPP fees and expenses that are billed on the basis of utility demands. The incremental energy per kWh in each month was multiplied by a value estimated by Staff expert J Luebbert as the sum of SPP fees and expenses that are billed on the basis of utility energy requirements. For the true-up plug, these amounts are not subject to transmission sharing. For the FAC base factor adjustment, discussed below, I did apply the transmission sharing percentage.

The calculations for incremental energy and transmission expenses are summarized below:

***



***

FAC Adjustments for Expected True-up Calculations

Q. Staff expert Brooke Mastrogiannis provides an FAC base calculation, subject to revision at true-up, without any of Customer A load and with only the portion of Customer B load annualized as of the update of December 31, 2025, which is

*** [redacted] ***. She also provides an FAC base calculation that is adjusted for expected true-up calculations. What information did you provide to Ms. Mastrogiannis to calculate the adjusted base factor?

A. I provided Ms. Mastrogiannis the amount of incremental energy expense associated with large loads I estimated for true-up, and the amount of incremental transmission expense associated with large loads I estimated for true-up, adjusted by the transmission sharing percentage provided by Staff expert Stacy Henderson. I also provided the incremental Missouri-jurisdictional NSI associated with the loss-adjusted true-up estimates for large loads. These amounts are provided in the tables below:

***

[redacted]

[redacted]

***

Mitigation Options

Q. How does customer growth increase FAC charges and cause harm to customers, all else being equal?

A. At the end of this rate case, customers will be paying rates to cover the total cost of service determined by the Commission. New load will pay new revenues,

including revenues from rates designed to pay for the cost of existing generation facilities. EMM will incur some new expenses and have some increases to cost of service in order to provide service to the new load, consistent with the calculations set out above for the net revenue to include in the cost of service calculation in this case. Simultaneously, increased energy expense is socialized through the FAC. Large customers will be paying rates designed to recover the cost of serving them, including energy charge rates to recover the cost of wholesale energy purchases to serve them. At the same time, the additional wholesale energy purchases will flow into the FAC, and will be recovered from all customers to the extent that they exceed the net base energy cost set in this rate case.

Q. Please briefly describe Staff's FAC base factors.

A. The preliminary FAC base calculation provided in the testimony of Ms. Mastrogiannis provides an FAC base calculation, subject to revision at true-up, without any Customer A load and with only the portion of Customer B load annualized as of the update of December 31, 2025 *** [redacted] ***. The FAC base calculation provided in the testimony of Ms. Mastrogiannis starts with that preliminary FAC base calculation, and incorporates additional Missouri jurisdictional energy-related expenses and additional Missouri jurisdictional NSI associated with *** [redacted] ***. Ms. Mastrogiannis' FAC base calculation is subject to revision at true-up for both matters and the large customer annualization you provided, including any revisions to production modeling and production modeling inputs.

Q. While both FAC base factors are subject to true-up, which should the Commission order under what circumstances?

A. While additional recommendations may be forthcoming from other parties, at this point Staff has two alternative recommendations:

> Option 1) Use the FAC base factor adjusted to reflect Customer A at *** [redacted] *** and customer B at *** [redacted] ***, which insulates non-large load customers from only the adverse FAC impact of the level of load captured in this rate case, and keeps LLPS customers in the FAC, or
>
> Option 2) Use the preliminary FAC base factor as adjusted to reflect only the difference between Customer B load at the update cut off and Customer B load at true-up cut off, and modify the FAC as discussed below, to remove LLPS customers from the FAC.

Q. Assuming Customer A *** [redacted] t [redacted] *** what impact will that have on EMM?

A. The graph below provides monthly bill calculations for Customer A from January 2027 – December 2030, the four years rates established in this case could be effective, excluding FAC and MEEIA revenue. For these calculations, Staff used the monthly energy for Customer A that EMM used in the calculations it relied upon in the EMM Class Cost of Service (CCoS) study, and the demands indicated in the legend.

* **
[redacted]
***

By year, the differences between the monthly revenue included in the Staff's true-up plug and the revenue expected under the scenarios is provided in the table below:

***
[redacted]
***

The above table also uses the estimated monthly transmission expense and EMM's forward-looking LMPs used in its updated IRP to estimate the incremental expenses that will offset that additional rate revenue.[11] Those calculations show that if

[11] Prices provided in file, "CONF_2026 Incremental Load Cost Analysis_Workpaper.xlsx," provided by email to Travis Pringle related to BEDR-2026-1837, on or about June 10, 2026.

EMM absorbed the cost of energy and transmission expense associated with Customer A's growth during the time rates from this case will be in effect, that EMM will still gain *** [redacted] *** in additional revenue during those times, if the incremental expense is excluded from the FAC.

However, unless otherwise ordered by the Commission, each additional kWh sold to Customer A will be included in the EMM FAC.[12] This will socialize much of the incremental expense of serving the growing load of Customer A to all customers, on the basis of the amount of energy that customer consumes.

***
[redacted]
***

Q. Have you estimated the impact of Customer A's growth on other customers through the operation of the FAC?

[12] The calculations reflected below are based on EMM's forecast energy expense levels.

A. Yes. Using EMM's IRP energy price forecast LMPs, the load ramp in DR No. 0293, and Mr. Luebbert's estimation of SPP expenses, if Customer A is annualized into this rate case and the FAC base factor at *** [redacted] *** over the next four years, other ratepayers will pay about *** [redacted] *** in additional FAC charges while EMM retains about *** [redacted] *** in positive regulatory lag.[13]

***

***

Q. If the FAC is modified to remove LLPS customers, will other customers bear the additional energy expenses associated with Customer A's continued growth through the operation of the FAC?

[13] These values are not a prediction, but are simply the amounts resulting from the described calculations. Actual impact to ratepayers and EMM will vary based on actual future energy market prices and actual future LLPS loads. Further, additional LLPS customers may materialize during the time rates from this case are in effect. These amounts will also vary if the *** [redacted] ***contract capacity is relied upon.

A. No. Removing Customer A from the FAC would largely mitigate the harm to other ratepayers passed through the FAC, while still allowing EMM *** [redacted] *** in positive regulatory lag over the next four years.

*** [redacted] ***

Q. Can the FAC be modified in this case to exclude LLPS customers from paying the FAC, and to modify the calculations to largely exclude the expenses from the FAC that are caused by LLPS customers?

A. Yes, it is a general rate case.

Q. Staff acknowledged that it was not seeking to relitigate the rate structure issues of EO-2025-0154 in this case. Is this issue different?

A. Yes. As discussed by Staff expert Claire M. Eubanks, PE, the Commission decided that it "will not change the existing FAC tariff sheet until a rate case is filed." This is a general rate case and the Commission may order modification of the FAC in this case.

Q. If the Commission accepts Staff's Option 2 above, what FAC modifications are necessary?

A. Staff recommends that the FAC calculations going forward be modified by removing LLPS customers from its applicability and the calculation of Missouri jurisdictional NSI, and by subtracting the following from Missouri jurisdictional energy expense. Staff's recommendation does not require the creation of a separate SPP load node, and relies on the currently established EMM load node for these calculations, set out below:

> 1) The DA energy expense of each LLPS customer x the EMM Load Node LMP. To perform this calculation EMM will need to supply the hourly loads of each LLPS customer, and the settled Load DA LMP at the EMM load node for each hour.
>
> 2) The load side of SPP energy-based transactions, proportionate to LLPS kWh/month as compared to EMM's Missouri jurisdictional kWh/Month.[14]
>
> 3) The load side of SPP demand-based transactions, proportionate to LLPS kW/month as compared to EMM's Missouri jurisdictional kW/Month.[15]

As discussed further by Ms. Mastrogiannis, appropriate reporting requirements associated with these items should also be ordered by the Commission, if the Commission accepts Staff's Option 2, above.

Q. If the Commission orders Staff's Option 2, will EMM be harmed?

[14] To perform this calculation EMM will need to supply the total LLPS customer energy per calendar month, the total EMM Missouri jurisdictional energy per calendar month, and the total SPP charges to EMM that were calculated based on EMM's energy usage in a month, without regard to generation sold by EMM.
[15] To perform this calculation EMM will need to supply the LLPS customer demand for each calendar month coincident with the total EMM Missouri jurisdictional demand per calendar month, and the total EMM Missouri jurisdictional demand per calendar month, and the total SPP charges to EMM that were calculated based on EMM's demand in a month, without regard to generation sold by EMM.

A. No. In EO-2025-0154 the Commission found that "Evergy's LLPS Rate Plan proposal, as modified by the Agreement, is the best resolution of this case because it implements a complete LLPS framework that aligns with Section 393.130.7, RSMo, by establishing a tariffed service and class for customers at or above 75 MW of demand, with clear eligibility, pricing, commitments, and safeguards that ensure these customers pay their share of costs while enabling Missouri to compete for transformational loads."[16] Staff is recommending those rates be increased in this case consistent with the overall ordered increase. Even if EMM incurs additional costs to serve new LLPS loads, such as capacity expenses or related capital costs, the LLPS rates are designed to recover revenue associated with that cost of service, and any growth will provide significant positive regulatory lag available to EMM to provide revenues net of the cost of energy and transmission expenses.

***



***

[16] *Report and Order* in EO-2025-0154, "In the Matter of the Application of Evergy Metro, Inc. d/b/a Evergy Missouri Metro and Evergy Missouri West, Inc. d/b/a Evergy Missouri West for Approval of New and Modified Tariffs for Service to Large Load Customers," at page 25.

Q. Will this approach shield non-LLPS ratepayers from adverse impacts of large customer growth on the FAC?

A. No. This approach will not protect ratepayers from large customer growth that occurs outside of the LLPS class, nor will it protect ratepayers from expenses related to EMM forecast errors which are primarily addressed in the Real Time or Day 1 Market, nor expenses related to incremental capacity costs that are otherwise recoverable through the FAC, or other changes in FAC-recoverable expenses caused by LLPS customers *** [redacted] ***.

NET IMPACT TO NON-LLPS RATEPAYERS

Q. Using the information available to Staff at this time, what range of impacts can be expected over the next 4 years due to large loads?

A. Assuming Staff's recommended increase to Customer B's rates in this case, including Customer B at the annualized level of *** [redacted] *** will reduce customer rates in this case by approximately *** [redacted] ***, per year, for the next four years all else being equal, and assuming (1) no further growth occurs, and (2) that full load is reflected in the FAC base factor on a Missouri jurisdictional basis.

Assuming Staff's recommended increase to Customer A's rates in this case, including Customer A at the annualized level of *** [redacted] *** will reduce customer rates in this case by approximately *** [redacted] ***, per year, for the next four years all else being equal, while simultaneously either (1) harming customers through the operation of the FAC by approximately *** [redacted] ***

over the next 4 years, for a net benefit of *** [redacted] ***, under FAC Option 1 based on EMM's forecast energy expense levels, or (2) mitigating harm to other customers through the operation of the FAC, under FAC Option 2.

Q. Do these calculations consider if additional generation resources must be built, if additional contract capacity must be secured, the operation of LLPS optional riders or other agreements, or if other decisions made by EMM management cause changes in circumstances that will be captured in future proceedings?

A. No.

CONCLUSION

Q. Does this conclude your direct testimony?

A. Yes it does.

Sarah L.K. Lange

I received my J.D. from the University of Missouri, Columbia, in 2007, and am licensed to practice law in the State of Missouri. I received my B.S. in Historic Preservation from Southeast Missouri State University, and took courses in architecture and literature at Drury University. Since beginning my employment with the MoPSC I have taken courses in economics through Columbia College and courses in energy transmission through Bismarck State College, and have attended various trainings and seminars, indicated below.

I began my employment with the Commission in May 2006 as an intern in what was then known as the General Counsel's Office. I was hired as a Legal Counsel in September 2007, and was promoted to Associate Counsel in 2009, and Senior Counsel in 2011. During that time my duties consisted of leading major rate case litigation and settlement, and presenting Staff's position to the Commission, and providing legal advice and assistance primarily in the areas of depreciation, cost of service, class cost of service, rate design, tariff issues, resource planning, accounting authority orders, construction audits, rulemakings and workshops, fuel adjustment clauses, document management and retention, and customer complaints.

In July 2013 I was hired as a Regulatory Economist III in what is now known as the Tariff / Rate Design Department. In this position my duties include providing analysis and recommendations in the areas of RTO and ISO transmission, rate design, class cost of service, tariff compliance and design, and regulatory adjustment mechanisms and tariff design. I also continue to provide legal advice and assistance regarding generating station and environmental control construction audits and electric utility regulatory depreciation. I have also participated before the Commission under the name Sarah L. Kliethermes.

Presentations

Midwest Energy Policy Series – Impact of ToU Rates on Energy Efficiency (August 14, 2020)

Billing Determinants Lunch and Learn (March 27, 2019)

Support for Low Income and Income Eligible Customers, Cost-Reflective Tariff Training, in cooperation with U.S.A.I.D. and NARUC, Addis Ababa, Ethiopia (February 23-26, 2016)

Fundamentals of Ratemaking at the MoPSC (October 8, 2014)

Ratemaking Basics (Sept. 14, 2012)

Participant in Missouri's Comprehensive Statewide Energy Plan working group on Energy Pricing and Rate Setting Processes.

Relevant Trainings and Seminars

FRI Advanced Seminar on Transformation Utility Pricing & Rate Design (April 7 - 9, 2025)

Regional Training on Integrated Distribution System Planning for Midwest/MISO Region (October 13-15, 2020)

"Fundamentals of Utility Law" Scott Hempling lecture series (January – April, 2019)

Today's U.S. Electric Power Industry, the Smart Grid, ISO Markets & Wholesale Power Transactions (July 29-30, 2014)

MISO Markets & Settlements training for OMS and ERSC Commissioners & Staff (January 27–28, 2014)

Validating Settlement Charges in New SPP Integrated Marketplace (July 22, 2013)

PSC Transmission Training (May 14 – 16, 2013)

Grid School (March 4–7, 2013)

Specialized Technical Training - Electric Transmission (April 18–19, 2012)

The New Energy Markets: Technologies, Differentials and Dependencies (June 16, 2011)

Mid-American Regulatory Conference Annual Meeting (June 5–8, 2011)

Renewable Energy Finance Forum (Sept. 29–Oct 3, 2010)

Utility Basics (Oct. 14–19, 2007)

Testimony and Staff Memoranda

Company	Case No.
Evergy Metro, Inc. d/b/a Evergy Missouri Metro In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro's Request for Authority to Implement a General Rate Increase for Electric Service	ER-2026-0143
The Empire District Electric Company d/b/a Liberty In the Matter of the Application of The Empire District Electric Company d/b/a Liberty for a Certificate of Convenience and Necessity to Support Resource Adequacy	EA-2025-0299
Union Electric Company d/b/a Ameren Missouri In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and Certificates of Public Convenience and Necessity Authorizing it to Construct Renewable Generation Facilities	EA-2025-0239
Evergy Metro, Inc. d/b/a Evergy Missouri Metro Evergy Missouri West, Inc. d/b/a Evergy Missouri West In the Matter of the Application of Evergy Metro, Inc. d/b/a Evergy Missouri Metro and Evergy Missouri West, Inc. d/b/a Evergy Missouri West for Approval of New or Modified Tariffs to Permit Customers to Opt-Out of Time of Use Rates	ET-2026-0074
Union Electric Company d/b/a Ameren Missouri In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and Certificates of Public Convenience and Necessity Authorizing it to Construct a New Generation Facility and Battery Energy Storage System	EA-2025-0238
Union Electric Company d/b/a Ameren 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	ET-2025-0184
Evergy Metro, Inc. d/b/a Evergy Missouri Metro Evergy Missouri West, Inc. d/b/a Evergy Missouri West In the Matter of the Application of Evergy Metro, Inc. d/b/a Evergy Missouri Metro and Evergy Missouri West, Inc. d/b/a Evergy Missouri West for Approval of New and Modified Tariffs for Service to Large Load Customers	EO-2025-0154
The Empire District Electric Company d/b/a Liberty In the Matter of the Petition of The Empire District Electric Company d/b/a Liberty for Authority to File Tariffs Increasing Rates for Electric Service Provided to Customers in Its Missouri Service Area	ER-2024-0261
Evergy Metro, Inc. d/b/a Evergy Missouri Metro In the Matter of the Tariff Filings of Evergy Metro, Inc. d/b/a Evergy Missouri Metro.	ET-2025-0286
Evergy Missouri West, Inc. d/b/a Evergy Missouri West In the Matter of the Application of Evergy Missouri West, Inc. d/b/a Evergy Missouri West for Permission and Approval of Certificates of Public Convenience and Necessity Authorizing It to Construct, Install, Own, Operate, Manage, Maintain and Control Two Solar Generation Facilities.	EA-2024-0292

Company	Case No.
Union Electric Company d/b/a Ameren Missouri In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust its Revenues for Electric Service.	ER-2024-0319
Evergy Missouri West, Inc. d/b/a Evergy Missouri West In the Matter of Evergy Missouri West, Inc. dba Evergy Missouri West's Request for Authority to Implement a General Rate Increase for Electric Service.	ER-2024-0189
Evergy Metro, Inc. d/b/a Evergy Missouri Metro Evergy Missouri West, Inc. d/b/a Evergy Missouri West In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro's and Evergy Missouri West, Inc. d/b/a Evergy Missouri West's Solar Subscription Rider Tariff Filings	ET-2024-0182
Evergy Metro, Inc. d/b/a Evergy Missouri Metro Evergy Missouri West, Inc. d/b/a Evergy Missouri West The Staff of the Missouri Public Service Commission, Complainant, v Evergy Metro, Inc. d/b/a Evergy Missouri Metro's and Evergy Missouri West, Inc. d/b/a Evergy Missouri West	EC-2024-0092
Evergy Metro, Inc. d/b/a Evergy Missouri Metro Evergy Missouri West, Inc. d/b/a Evergy Missouri West In the Matter of the Joint Application of Evergy Metro, Inc. d/b/a Evergy Missouri Metro and Evergy Missouri West, Inc. d/b/a Evergy Missouri West for Approval of Tariff Revisions to TOU Program	ET-2024-0061
Union Electric Company d/b/a Ameren Missouri In the Matter of the Petition of Union Electric Company d/b/a Ameren Missouri for a Financing Order Authorizing the Issue of Securitized Utility Tariff Bonds for Energy Transition Costs related to Rush Island Energy Center	EF-2024-0021
Evergy Metro, Inc. d/b/a Evergy Missouri Metro Evergy Missouri West, Inc. d/b/a Evergy Missouri West In the Matter of Requests for Customer Account Data Production from Evergy Metro, Inc. d/b/a Evergy Missouri Metro and Evergy Missouri West, Inc. d/b/a Evergy Missouri West	EO-2024-0002
Evergy Metro, Inc. d/b/a Evergy Missouri Metro Evergy Missouri West, Inc. d/b/a Evergy Missouri West In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro's Request to Revise Its Solar Subscription Rider	EO-2023-0423 EO-2023-0424
Evergy Metro, Inc. d/b/a Evergy Missouri Metro Evergy Missouri West, Inc. d/b/a Evergy Missouri West In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro's Notice of Intent to File an Application for Authority to Establish a Demand-Side Programs Investment Mechanism	EO-2023-0369 EO-2023-0370
Union Electric Company d/b/a Ameren Missouri In the Matter of Union Electric Company d/b/a Ameren Missouri's 4th Filing to Implement Regulatory Changes in Furtherance of Energy Efficiency as Allowed by MEEIA	ER-2023-0136

Company	Case No.
Union Electric Company d/b/a Ameren Missouri In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Certificates of Convenience and Necessity for Solar Facilities	EA-2023-0286
Union Electric Company d/b/a Ameren Missouri In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust its Revenues for Electric Service	ER-2022-0337
NextEra Energy Transmission Southwest, LLC In the Matter of the Application of NextEra Energy Transmission Southwest, LLC for a Certificate of Public Convenience and Necessity to Construct, Install, Own, Operate, Maintain, and Otherwise Control and Manage a 345 kV Transmission Line and associated facilities in Barton and Jasper Counties, Missouri	EA-2022-0234
Spire Missouri, Inc. In the Matter of Spire Missouri Inc.'s d/b/a Spire Request for Authority to Implement a General Rate Increase for Natural Gas Service Provided in the Company's Missouri Service Areas	GR-2022-0179
Evergy Missouri West, Inc. dba Evergy Missouri West In the Matter of Evergy Missouri West, Inc. dba Evergy Missouri West for a Financing Order Authorizing the Financing of Extraordinary Storm Costs Through an Issuance of Securitized Utility Tariff Bonds	EF-2022-0155
Evergy Metro, Inc. dba Evergy Missouri Metro Evergy Missouri West, Inc. dba Evergy Missouri West In the Matter of Evergy Metro, Inc. dba Evergy Missouri Metro's Request for Authority to Implement a General Rate Increase for Electric Service. In the Matter of Evergy Missouri West, Inc. dba Evergy Missouri West's Request for Authority to Implement a General Rate Increase for Electric Service.	ER-2022-0129 ER-2022-0130
The Empire District Electric Company d/b/a Liberty In the Matter of the Petition of The Empire District Electric Company d/b/a Liberty to Obtain a Financing Order that Authorizes the Issuance of Securitized Utility Tariff Bonds for Energy Transition Costs Related to the Asbury Plant	EO-2022-0193
The Empire District Electric Company d/b/a Liberty In the Matter of the Petition of The Empire District Electric Company d/b/a Liberty to Obtain a Financing Order that Authorizes the Issuance of Securitized Utility Tariff Bonds for Qualified Extraordinary Costs	EO-2022-0040
Ameren Transmission Company of Illinois In the Matter of the Application of Ameren Transmission Company of Illinois for a Certificate of Convenience and Necessity Under Section 393.170 RSMo Relating to Transmission Investments in Southeast Missouri	EA-2022-0099
The Empire District Electric Company d/b/a Liberty In the Matter of the Request of The Empire District Electric Company d/b/a Liberty for Authority to File Tariffs Increasing Rates for Electric Service Provided to Customers in its Missouri Service Area	ER-2021-0312

Company	Case No.
Union Electric Company d/b/a Ameren Missouri In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust its Revenues for Electric Service	ER-2021-0240
Ameren Transmission Company of Illinois In the Matter of the Application of Ameren Transmission Company of Illinois for a Certificate of Public Convenience and Necessity to Construct, Install, Own, Operate, Maintain, and Otherwise Control and Manage a 138 kV Transmission Line and associated facilities in Perry and Cape Girardeau Counties, Missouri	EA-2021-0087
Evergy Affiliates In the Matter of the Application of Evergy Metro, Inc. d/b/a Evergy Missouri Metro and Evergy Missouri West, Inc. d/b/a Evergy Missouri West for Approval of a Transportation Electrification Portfolio	ET-2021-0151
Spire Missouri, Inc. In the Matter of Spire Missouri Inc.'s d/b/a Spire Request for Authority to Implement a General Rate Increase for Natural Gas Service Provided in the Company's Missouri Service Areas	GR-2021-0108
Union Electric Company d/b/a Ameren Missouri In the Matter of the Request of Union Electric Company d/b/a Ameren for Approval of its Surge Protection Program	ET-2021-0082
Union Electric Company d/b/a Ameren Missouri In the Matter of the Request of Union Electric Company d/b/a Ameren Missouri to Implement the Delivery Charge Adjustment for the 1st Accumulation Period beginning September 1, 2019 and ending August 31, 2020	GT-2021-0055
The Empire District Electric Company In the Matter of The Empire District Electric Company's Tariffs Approval of a Transportation Electrification Portfolio for Electric Customers in its Missouri Service Area	ET-2020-0390
The Empire District Electric Company In the Matter of The Empire District Electric Company's Tariffs to Increase Its Revenues for Electric Service	ER-2019-0374
Union Electric Company d/b/a Ameren Missouri In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Decrease Its Revenues for Electric Service	ER-2019-0335
KCP&L Greater Missouri Operations Company In the Matter of KCP&L Greater Missouri Operations Company Request for Authority to Implement Rate Adjustments Required by 4 CSR 240-20.090(8) And the Company's Approved Fuel and Purchased Power Cost Recovery Mechanism	ER-2019-0413
Union Electric Company d/b/a Ameren Missouri In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Increase Its Revenues for Natural Gas Service	GR-2019-0077

Company	Case No.
Union Electric Company d/b/a Ameren Missouri In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri Revised Tariff Sheets	ET-2019-0149
The Empire District Electric Company In the Matter of The Empire District Electric Company's Revised Economic Development Rider Tariff Sheets	ET-2019-0029
The Empire District Electric Company In the Matter of a Proceeding Under Section 393.137 (SB 564) to Adjust the Electric Rates of The Empire District Electric Company	ER-2018-0366
Union Electric Company d/b/a Ameren Missouri In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and a Certificate of Public Convenience and Necessity Authorizing it to Construct a Wind Generation Facility	EA-2018-0202
Kansas City Power & Light Company KCP&L Greater Missouri Operations Company In the Matter of Kansas City Power & Light Company's Request for Authority to Implement a General Rate Increase for Electric Service	ER-2018-0145 ER-2018-0146
Union Electric Company d/b/a Ameren Missouri In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Approval of Efficient Electrification Program	ET-2018-0132
Union Electric Company d/b/a Ameren Missouri In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Approval of 2017 Green Tariff	ET-2018-0063
Laclede Gas Company Laclede Gas Company d/b/a Missouri Gas Energy In the Matter of Laclede Gas Company's Request to Increase Its Revenue for Gas Service, In the Matter of Laclede Gas Company d/b/a Missouri Gas Energy's Request to Increase Its Revenue for Gas Service.	GR-2017-0215 GR-2017-0216
Kansas City Power & Light Company In the Matter of Kansas City Power & Light Company's Demand Side Investment Rider Rate Adjustment And True-Up Required by 4 CSR 240-3.163(8)	ER-2017-0316
Kansas City Power & Light Company In the Matter of Kansas City Power & Light Company's Demand Side Investment Rider Rate Adjustment And True-Up Required by 4 CSR 240-3.163(8)	ER-2017-0167
KCP&L Great Missouri Operations Company In the Matter of KCP&L Greater Missouri Operations Company's Annual RESRAM Tariff Filing	ET-2017-0097

Company	Case No.
Grain Belt Express Clean Line, LLC	EA-2016-0358
In the Matter of the Application of Grain Belt Express Clean Line LLC for a Certificate of Convenience and Necessity Authorizing It to Construct, Own, Operate, Control, Manage, and Maintain a High Voltage, Direct Current Transmission Line and an Associated Converter Station Providing an Interconnection on the Maywood - Montgomery 345 kV Transmission Line	
Kansas City Power & Light Company	ER-2016-0325
In the Matter of Kansas City Power & Light Company's Demand Side Investment Rider Rate Adjustment And True-Up Required by 4 CSR 240-3.163(8)	
Kansas City Power & Light Company	ER-2016-0285
In the Matter of Kansas City Power & Light Company's Request for Authority to Implement A General Rate Increase for Electric Service	
Union Electric Company d/b/a Ameren Missouri	EA-2016-0207
In the Matter of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and a Certificate of Public Convenience and Necessity Authorizing it to Offer a Pilot Subscriber Solar Program and File Associated Tariff	
Union Electric Company d/b/a Ameren Missouri	ER-2016-0179
In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariff to Increase Its Revenues for Electric Service	
KCP&L Great Missouri Operations Company	ER-2016-0156
In the Matter of KCP&L Greater Missouri Operations Company's Request for Authority to Implement a General Rate Increase for Electric Service	
Empire District Electric Company	ER-2016-0023
In the Matter of The Empire District Electric Company's Request for Authority to Implement a General Rate Increase for Electric Service	
Ameren Transmission Company of Illinois	EA-2015-0146
In the Matter of the Application of Ameren Transmission Company of Illinois for Other Relief or, in the Alternative, a Certificate of Public Convenience and Necessity Authorizing it to Construct, Install, Own, Operate, Maintain and Otherwise Control and Manage a 345,000-volt Electric Transmission Line from Palmyra, Missouri to the Iowa Border and an Associated Substation Near Kirksville, Missouri	
Ameren Transmission Company of Illinois	EA-2015-0145
In the Matter of the Application of Ameren Transmission Company of Illinois for Other Relief or, in the Alternative, a Certificate of Public Convenience and Necessity Authorizing it to Construct, Install, Own, Operate, Maintain and Otherwise Control and Manage a 345,000-volt Electric Transmission Line in Marion County, Missouri and an Associated Switching Station Near Palmyra, Missouri	
Union Electric Company d/b/a Ameren Missouri	EO-2015-0055
In the Matter of Union Electric Company d/b/a Ameren Missouri's 2nd Filing to Implement Regulatory Changes in Furtherance of Energy Efficiency as Allowed by MEEIA	

Company	Case No.
Kansas City Power & Light Company In the Matter of Kansas City Power & Light Company's Request for Authority to Implement a General Rate Increase for Electric Service	ER-2014-0370
Empire District Electric Company In the Matter of The Empire District Electric Company for Authority to File Tariffs Increasing Rates for Electric Service Provided to Customers in the Company's Missouri Service Area	ER-2014-0351
Union Electric Company d/b/a Ameren Missouri City of O'Fallon, Missouri, and City of Ballwin, Missouri, Complainants v. Union Electric Company d/b/a Ameren Missouri, Respondent	EC-2014-0316
Union Electric Company d/b/a Ameren Missouri In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariff to Increase Its Revenues for Electric Service	ER-2014-0258
Union Electric Company d/b/a Ameren Missouri Noranda Aluminum, Inc., et al., Complainants, v. Union Electric Company d/b/a Ameren Missouri, Respondent	EC-2014-0224
Grain Belt Express Clean Line, LLC In the Matter of the Application of Grain Belt Express Clean Line LLC for a Certificate of Convenience and Necessity Authorizing It to Construct, Own, Operate, Control, Manage, and Maintain a High Voltage, Direct Current Transmission Line and an Associated Converter Station Providing an Interconnection on the Maywood - Montgomery 345 kV Transmission Line	EA-2014-0207
KCP&L Great Missouri Operations Company In the Matter of KCP&L Greater Missouri Operations Company's Application for Authority to Establish a Renewable Energy Standard Rate Adjustment Mechanism	EO-2014-0151
Kansas City Power & Light Company In the Matter of Kansas City Power & Light Company's Filing for Approval of Demand-Side Programs and for Authority to Establish A Demand-Side Programs Investment Mechanism	EO-2014-0095
Veolia Energy Kansas City, Inc. In the Matter of Veolia Energy Kansas City, Inc. for Authority to File Tariffs to Increase Rates	HR-2014-0066

Case No. ER-2026-0143

SCHEDULE SLKL-d2

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SCHEDULE SLKL-d7

HAVE BEEN DEEMED

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