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Issue(s):	*Class Cost of Service, Rate Design, EDR Revenues*
Witness:	*Sarah L.K. Lange*
Sponsoring Party:	*MoPSC Staff*
Type of Exhibit:	*Rebuttal Testimony*
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MISSOURI PUBLIC SERVICE COMMISSION

INDUSTRY ANALYSIS DIVISION

TARIFF/RATE DESIGN DEPARTMENT

REBUTTAL TESTIMONY

OF

SARAH L.K. LANGE

THE EMPIRE DISTRICT ELECTRIC COMPANY, d/b/a Liberty

CASE NO. ER-2024-0261

Jefferson City, Missouri
August 2025

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Executive Summary

Q. Are you the same Sarah L.K. Lange who filed Class Cost of Service ("CCOS") and Rate Design testimony in this matter?

A. Yes.

Q. What is the purpose of your rebuttal testimony?

A. I will respond to:

1. Empire[1] witness Charlotte T. Emery concerning appropriate treatment of revenue discounts provided under the statutory economic development rider ("EDR");
2. The Office of the Public Counsel ("OPC") witness Dr. Geoff Marke concerning allocation of revenue discounts he proposes be provided as an income eligible rate;
3. Empire witness Timothy S. Lyons, Consumers Counsel of Missouri ("Consumers Counsel") witness Caroline Palmer, and Midwest Energy Consumers Group ("MECG") witness Kavita Maini, concerning:
   a. the overall reliability of the underlying CCOS results provided by each,
   b. appropriate analysis of time-based rates in a CCOS,
   c. appropriate classification or allocation of generation plant with little or no variable expenses,
   d. failure to appropriately functionalize generation plant recorded outside of the major generation plant accounts,
   e. distribution classification,
   f. recommended interclass revenue responsibility allocations, and
   g. the propriety of adjusting individual rate schedules within rate classes asymmetrically, with Staff witnesses Marina Gonzales providing additional rebuttal concerning non-residential allocation approaches, and Dr. Poudel providing additional rebuttal concerning residential allocation approaches.

Q. Could you summarize Staff's direct recommendations related to interclass revenue allocation and rate design?

[1] The Empire District Electric Company, d/b/a Liberty ("Empire").

A. Yes. As discussed in the CCOS direct testimony of James A. Busch, given the circumstances surrounding this case and the roll out of Empire's "Customer First" billing system and software, Staff recommends that any increase be allocated to the classes on an equal percentage basis prior to consideration of Mr. Busch's recommended Customer First disallowance, and that the Customer First disallowance then be applied entirely to the residential class.[2]

	Residential	GS	LGS	SPS	LPS	Transmisison	Lighting
Retail Rates Subject to Adjustment	$ 248,723,854	$ 61,348,830	$113,803,768	$ 10,627,572	$ 68,014,268	$ 4,674,852	$ 6,537,778
Revenue Responsibility Adjusted for Customer First	$ 298,780,247	$ 78,067,727	$144,817,781	$ 13,523,818	$ 86,549,643	$ 5,948,851	$ 8,319,465
Increase	$ 50,056,393	$ 16,718,897	$ 31,014,014	$ 2,896,246	$ 18,535,374	$ 1,273,999	$ 1,781,687
Percent Increase to "Average" Customer Bill	20.13%	27.25%	27.25%	27.25%	27.25%	27.25%	27.25%

This approach can be taken by the Commission regardless of any class cost of service study results presented in this case.

To mitigate rate shock, Staff recommends retaining the existing customer charge, or increasing the customer charge by the overall percentage increase applicable to the residential class. Staff recommends equal percentage increases to the residential energy charges, and retention of the current level of the Off-Peak kWh credit rate. Staff recommends equal percentage increases to each rate element within each class, with restructuring of billing demand charges.

Treatment of EDR Discounts

Q. At pages 20-21 of her direct testimony, Ms. Emery states:

[2] To the extent the disallowance exceeds the increase applicable to the Residential class, Residential rates should be held constant, with the remaining disallowance being applied against the increase applicable to the General Service class. The Customer First disallowance to rate base recommended by Matt Young and the adjustment to incentive compensation driven by Customer First metrics recommended by Melanie Marek would be spread to all customer classes.

SB-EDR:

> This regulatory asset was established during the prior rate case (ER-2021-0312) to reflect the discounts given to customers in accordance with the provisions of Senate Bill 564 related to economic development (Section 393.1640, RSMo). This adjustment results in an increase to rate base of $1,767,579, which produces a pro forma update period ending balance of $7,069,690. Since this regulatory asset is created by a Missouri statute this balance has been direct assigned to Missouri retail customers.

Is there an authorized regulatory asset that was established during ER-2021-0312 to reflect the value of discounts to customers under the economic development rider?

A. As addressed by Staff witness Karen Lyons, no, there is no such authorized asset.

Q. Should there be an asset related to the value of discounts provided to customers?

A. No. There should not be such an asset. The Commission has not authorized recording an asset, the statute does not contemplate recording an asset, and reasonable ratemaking considerations of regulatory lag would not indicate that the Commission should authorize such an asset.

Q. What happens to Empire's revenue when a new customer comes onto the system?

A. When a new customer comes on the system that customer's energy requirements flow into the FAC, and that customer's new customer specific facilities, if applicable, are incorporated into Empire's plant in service.[3] Empire's revenue increases by the amount that the customer pays in bills, and Empire's net income increases by the difference the customer causes in cost of service and bill payments.

[3] The cost for facilities extensions will be offset by a customer contribution as determined through the applicable tariff provisions.

Q. What happens if the new customer has an economic development discount?

A. Then the revenue Empire receives from the customer will be lower than it would be without the discount, and the increase to net income will be lower than it would be without the discount.

Q. Is it possible that there are instances where in a given month the increase to net income may actually be negative due to the application of the EDR discount?

A. Given Empire's rate structure, yes. It is possible that a given customer receiving an economic development discount may cost Empire more to serve than is recovered when the customer pays a bill.

Q. Is there anything in Section 393.1640, RSMo., or elsewhere in Missouri law, that states or implies that Empire is guaranteed a positive impact to net income from the addition of a given customer?

A. No, not of which I am aware.

Q. Is there anything in Section 393.1640, RSMo., or elsewhere in Missouri law, that states or implies that Empire is guaranteed the full positive impact to net income from the increase of a customer that it would get if that customer did not have an economic development discount?

A. No, not of which I am aware.

Q. Is there anything in Section 393.1640, RSMo., or elsewhere in Missouri law, that states or implies that Empire should be insulated from revenue reductions if a customer utilizes an economic development rider as a retention discount?

A. No, not of which I am aware.

Q. Does Section 393.1640, RSMo., address revenue shortfalls due to the statutory economic development discount?

A. Yes. The statute says that if a customer has an economic discount during a rate case test period, that the value of that discount must be recognized in the overall revenue requirement calculation of the utility by increasing rates to make up for that discount.[4] However, the statute neither states nor implies that a regulatory asset account is established for the value of economic development discounts that arise between rate cases.

Q. Does Staff recommend recognizing the ongoing annual level of statutory economic development discounts in this case, and increasing all customers rates to make up for the value of those discounts?

A. Yes. I address this adjustment in the recommended increases discussed in my CCOS direct testimony.

Q. Are the increases to ratebase and amortization expenses requested by Ms. Emery consistent with the treatment of EDR revenue for Ameren Missouri or the Evergy Missouri companies?

A. No. What Ms. Emery presents is entirely unique, in addition to being inconsistent with the Commission's order in the last Empire rate case.

[4] Section 393.1640.2, RSMo., states in part:

> 2. In each general rate proceeding concluded after August 28, 2022, the difference in revenues generated by applying the discounted rates provided for by this section and the revenues that would have been generated without such discounts shall not be imputed into the electrical corporation's revenue requirement. Instead, such revenue requirement shall be set using the revenues generated by such discounted rates and the impact of the discounts provided for by this section shall be allocated to all the electrical corporation's customer classes, including the classes with customers that qualify for discounts under this section through the application of a uniform percentage adjustment to the revenue requirement responsibility of all customer classes.

Q. Can the Commission approve the going forward discount valuation, as recommended by Staff in your CCOS direct testimony, and disapprove the increase to ratebase and amortization expenses requested by Ms. Emery?

A. Yes. The Commission can, and should, do exactly that.

Income Eligible Rate Discount Treatment

Q. If the Commission orders that qualifying residential customers should not pay the residential customer charge,[5] how should that impact revenue responsibility allocation in this case?

A. While Dr. Marke does not address revenue responsibility for the value of the discounts he recommends, it is an important consideration. The reasons Dr. Marke provides for providing the discount are related to general public policy. It is not reasonable for residential customers to solely bear the cost of rate making decisions made for general public policy. Therefore, to the extent that Empire does not collect customer charge revenue from qualifying residential customers, that revenue shortfall should be allocated among all customer classes.

Q. How should the revenue shortfall be allocated among all customer classes?

A. The most reasonable approach would be to allocate the shortfall on class energy usage, as the basic commodity sold by an electric utility. An alternative approach is to allocate the shortfall as a gross-up of retail rate revenue, similar to treatment of the economic development rider.

CCOS Studies and Interclass Revenue Responsibility Recommendations

Reasonableness of CCOS Studies in this Case

Q. What CCOS Studies are available for the Commission's review in this case?

[5] See CCOS direct testimony of Dr. Marke at page 10.

A. There are effectively two studies in this case.

Empire's consultant Timothy S. Lyons provided a CCOS study based on Empire's revenue requirement quantification and using Empire's revenue calculations, billing determinants, and demand quantifications ("Empire's CCOS"). MECG's consultant Kavita Maini modified an allocator in Empire's CCOS study, which continues to otherwise rely on Empire's inputs. Consumers Counsel consultant Caroline Palmer modified a classifier applying to some of the distribution accounts, and the classification for the meter accounts, and continues to otherwise rely on Empire's inputs.

In my CCOS Direct Testimony I provided a CCOS study of Staff's revenue requirement calculation, using Staff's revenue calculations, billing determinants, and demand quantifications. Staff's study relies on a more reasonable identification of generation plant recorded across USOA[6] accounts, and recognized distinction in the operating characteristics of that generation plant. The study I provided relied on Staff's review and classification of distribution infrastructure. Staff witness Dr. Hari K. Poudel provided a variation relying on the Empire classification of distribution infrastructure (the "Staff studies"). Note, the difference between the study I provided and the study Dr. Poudel provided reflect not only changes to the class cost of service related to distribution infrastructure, but also distribution expense and overhead administrative and general cost of service, as that cost of service is allocated consistent with underlying plant allocations.

Q. Are any of the CCOS studies in this case fully reliable?

A. No. While no CCOS study is ever perfect, the Empire study failed to "catch" significant generation investment that was recorded to the intangible plant accounts and the

[6] Uniform system of accounts.

transmission plant accounts. It also failed to recognize the operating characteristics of generation plant which should guide how that plant is treated in a CCOS study. The distribution classifications in the Empire CCOS are not consistent with the NARUC manual in that they fail to recognize the demand-carrying capabilities of selected minimum assets, and that they failed to recognize appropriately customer-specific infrastructure.[7] The MECG and Consumers Counsel derivative studies repeat these errors, with the exception that the Consumers Counsel study swings too far the other direction on distribution classification, fails to incorporate any level of customer-location dependent costs, and shifts responsibility for Advanced Metering Infrastructure ("AMI") metering among classes.

The Empire CCOS, the derivations of the Empire CCOS, and the Staff studies rely on a suboptimal production allocation. For the Empire CCOS and derivative studies, this may have been by choice, but for the Staff studies this was due to the concerns with reliability of hourly load data in light of the "Customer First" issues. For the Empire CCOS and derivative studies, the shortcomings of production allocation selection are highlighted by a choice to perform the study at a rate schedule level as opposed to a class level, which is unreasonable as discussed below.

[7] The NARUC Manual provides at page 95 as follows:

> Cost analysts disagree on how much of the demand costs should be allocated to customers when the minimum-size distribution method is used to classify distribution plant. **When using this distribution method, the analyst must be aware that the minimum size distribution equipment has a certain load-carrying capability, which can be viewed as a demand-related cost**,
>
> . . . .
>
> When allocating distribution costs determined by the minimum-size method, some cost analysts will argue that some customer classes can receive a disproportionate share of demand costs. Their rationale is that customers are allocated a share of distribution costs classified as demand-related. Then those customers receive a second layer of demand costs that have been mislabeled customer costs because the minimum-size method was used to classify those costs. [Emphasis added.].

In general, while the Consumers Counsel's distribution and metering classification changes unreasonably shift cost of service away from Residential and General Service customers, the remaining studies and derivations shift cost of service to the Residential and General Service customers.

Q. Does this mean the CCOS studies in this case are not useful?

A. Not necessarily. Rather, in this case the Commission should observe that Staff's "Study A," results are a little high on estimating the cost to serve Residential and General Service customers, that Staff's "Study B," results are high on estimating the cost to serve Residential and General Service customers, and that the Empire CCOS and derivative studies results are not particularly useful in this case.

Appropriate Analysis of Time-Based Rate Schedules in a CCOS

Q. What is the concern regarding appropriate analysis of Time-Based rate schedules in a CCOS?

A. In the study provided by Empire, which is the basis for the studies provided by MECG and Consumers Council, Mr. Lyons broke out each rate schedule for study as a separate class. This could be a reasonable thing to do if the distinctions in the cost of service for each rate schedule were addressed in the study. However, Mr. Lyons did not do so.

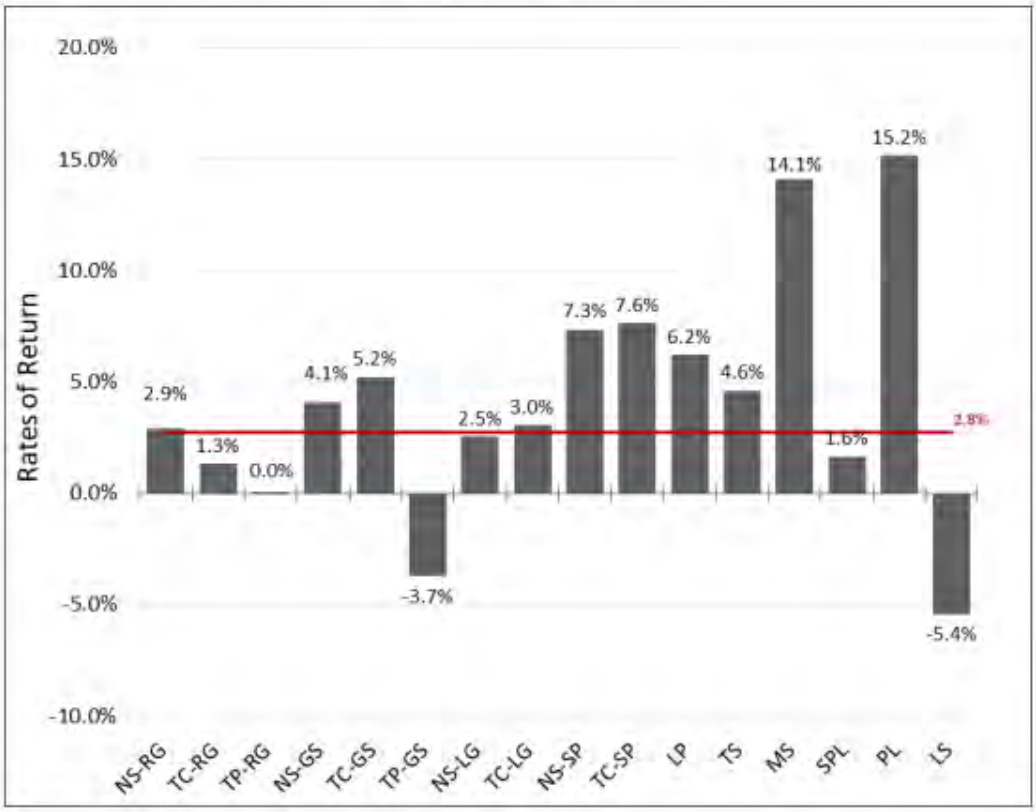
Q. Could you provide an example?

A. Yes. Mr. Lyons, on page 3 of his direct testimony, provides the following figure of the rates of return results of his study:

continued on next page

TIMOTHY S. LYONS
DIRECT TESTIMONY

Figure 1: COSS Results



This figure shows that residential customers on the Non-Standard Residential rate schedule are providing just above the system-average rate of return, while customers on the Time Choice Residential rate schedule are providing a return below the system average, and customers on the Time Choice Plus rate schedule are providing no return. However, what this figure really shows has nothing to do with differences in the cost of serving residential customers on different rate schedules, and everything to do with (1) the average size of customers on each rate schedule, and (2) the study's failure to acknowledge the difference in time of energy consumption when allocating cost of service. The first problem is exacerbated by the excessive cost of service classified as customer-related in the Empire CCOS and

derivative studies. The second problem cannot be addressed in this case given the lack of reliable hourly load data.

Q. Can you elaborate on the impact of average customer size and how the impact is exacerbated by the excessive customer-classified cost of service?

A. Yes. The table below provides the rate schedule level determinants Mr. Lyons relied upon from the Empire direct revenue workpapers:

	Total Company	NS-RG	TC-RG	TP-RG	Total Residential
Number of Bills	1,996,862	6,804	1,684,236	888	1,691,928
Total kWh Sales	4,224,777,695	9,067,286	1,740,855,838	919,662	1,750,842,786
Total Calculated Revenue	$ 508,101,032	$ 1,222,900	$ 242,798,708	$ 125,385	244,146,994
$/Customer/Month	$ 254.45	$ 179.73	$ 144.16	$ 141.20	$ 144.30
$/kWh	$ 0.1203	$ 0.1349	$ 0.1395	$ 0.1363	$ 0.1394
kWh per Customer/Month	2,116	1,333	1,034	1,036	1,035
Energy Consumption Relative to Average		129%	99.88%	100.08%	100%

This table shows that the residential customers on the NS-RG rate schedule use, on average, about 29% more energy than the average residential customer, and that they pay, on average, about $35.57 more per month than residential customers on the TC-RG rate schedule. However, these two facts interact to result in the average $/kWh for a NS-RG customer to be less expensive than the average $/kWh for a TC-RG customer (at 13.49 cents per kWh versus 13.95 cents per kWh) and for the average monthly revenue from a NS-RG customer to be higher at $179.73, than from a TC-RG customer, at $144.16. The TC-RG customers are paying the lowest average customer bill each month, and are paying between the other average costs per kWh, at 13.63 cents per kWh.

Empire allocates $1,621 of poles, overhead conductors, conduit, and underground conductors to each customer in each class on the basis of that customer existing, whether they are a one-room apartment in a three-story building, or a giant warehouse. Empire also allocates to each customer – on the basis of that customer existing – about $250 of office building, furniture, and other General Plant. Additional concerns with this approach are detailed later in this testimony, but as it relates to the concern with a rate-schedule level study, the bottom line

is that if you allocate a lot of cost of service to each customer regardless of that customer's size, then smaller than average customers will show they are relatively underpaying, and larger than average customers will show that they are overpaying. The difference in average customer size accounts for most of the variation seen in the rates of return provided by the rate schedules within a customer class in the Empire CCOS and derivative studies.

Q. Can you illustrate the importance of acknowledging the time of energy consumption if a rate schedule-level study is performed?

A. Yes. While there are not reliable hourly loads available in this case to correct the issue, the underlying concern is this: Empire's TC-RG and TP-RG rate schedules vary the rate charged to customers for energy depending on the time the customer consumes energy, but Empire's CCOS study allocates the cost of energy the same to every customer in every hour.

As an illustration:

Bob and Al are roommates. Al eats a bowl of oatmeal for breakfast, a homemade bologna sandwich every day for lunch, and a TV dinner for supper. Bob eats bacon and eggs for breakfast, makes a bacon cheeseburger at lunch, and makes a grilled chicken salad for supper. The cost of a day's meals for each is set out below:

	Al	Bob
Breakfast	$ 1.00	$ 5.00
Lunch	$ 2.00	$ 10.00
Dinner	$ 5.00	$ 7.00
Total	$ 8.00	$ 22.00

The total cost for a day's food is $30.00. If Al paid $14 towards the food budget, and Bob paid $16 towards the food budget, Al would be overpaying, and Bob would be underpaying, if a reasonable study were done of food costs and revenues.

However, a different approach would be to say that the average cost of a meal in the house is $5. If that cost, times the number of meals, is used to study the food costs and revenues, then Al's $14 payment would undercontribute, and Bob's $16 payment would overcontribute.

If a revenue recovery approach recognizes differences in cost recovery but the cost allocation approach does not, then it is not reasonable to use that cost allocation approach to review the reasonableness of the revenue recovery approach. The Empire CCOS and derivative studies recognize the revenue differences produced from time-based rate schedules within a rate class, but allocate cost of service without recognizing the differences in the price of energy over time. Therefore, the Empire CCOS and derivative studies are not reasonable for studying the differences in the contribution of customers on different rate schedules.

Q. Do the Staff studies recognize the differences in the price of energy over time?

A. No. Because the hourly loads at the rate schedule level are not reliable for study, Staff recognized that the study could not be done at the rate schedule level and must be done at the class level.

Treatment of Generation Plants with Low or No Variable Expenses

Q. Is it reasonable to allocate the capital costs of owning wind and solar generation on a measure of class demands and to allocate revenues from wind and solar generation on a measure of class energy?

A. No.

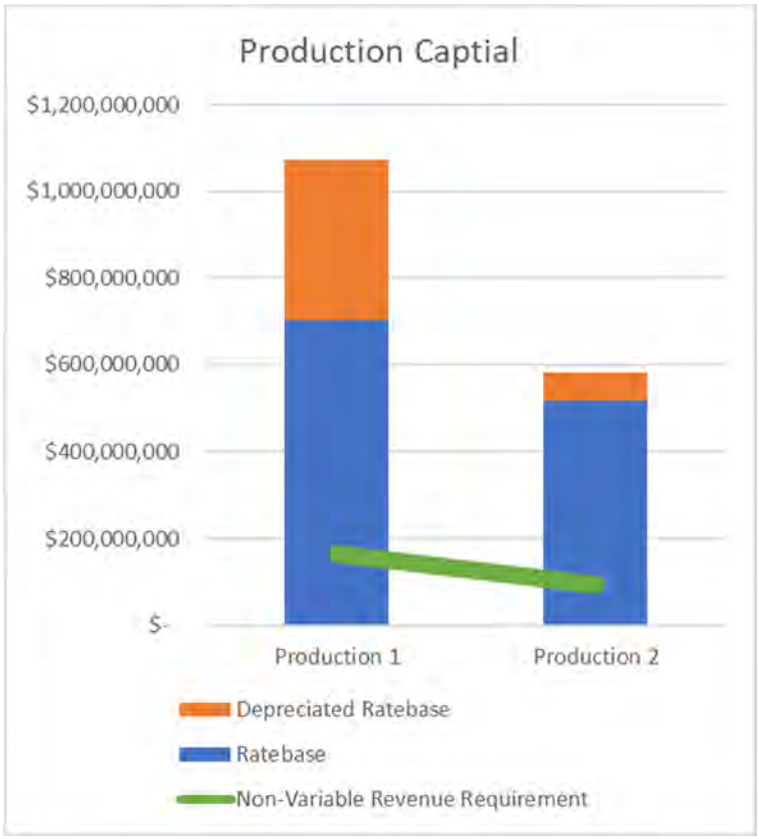
Q. Is this a relatively new problem to solve in the State of Missouri?

A. Yes. Renewable energy has not been a significant part of regulated rate base for Missouri utilities until the last decade or so. However, today, renewable generation is over 11% of Empire's Cost of Service, 15% of Empire's gross plant, and 20% of Empire's ratebase.

The differences in the percentages of gross plant and ratebase is because, overall, it is more expensive in real dollars to build plants today than it was in the past due to inflation, and because the renewable plants are newer than other power plants and have less offsetting depreciation.

Q. Did Staff study the cost of service allocation of renewable plants separately from the cost of service allocation of other plants?

A. Effectively, yes. Staff functionalizes power plants that have little or no expenses that vary with the amount of energy produced as "Production 2," and power plants that have expenses, such as fuel, that vary with the amount of energy produced as "Production 1." A side-by-side comparison of the two is provided below:



The Non-Variable Revenue Requirement in the figure above includes non-variable maintenance expenses, property taxes, and the capital costs of the plants, but does not include expenses like fuel or variable operating expenses.

Q. If a utility has a purchase power agreement ("PPA") for renewable energy, how have parties to past rate cases allocated that expense?

A. Generally, utilities, industrial intervenors, and historically Staff, would have classified or allocated that expense as "energy-related," and allocated the expense on the basis of class energy. While more precise allocations reflecting timing of class energy usage are better, even today, allocating a renewable PPA's expenses and revenues on a consistent energy basis could be reasonable.

Q. Does it suddenly become reasonable to allocate renewable energy costs on the basis of class demands if a utility owns a wind farm rather than utilizing a PPA?

A. No.

Q. Can you illustrate the issue with allocating the capital costs of a wind farm and the revenues from that wind farm on two different bases?

A. Yes. Consider a simple example with just two classes. "Class A" and "Class B" have the same demands, but Class A uses about twice as much energy each year as Class B. The allocation factors are:

	Demand	Energy
Class A	50%	67%
Class B	50%	33%

A windfarm exists. It cost $200 million to build. The utility has to keep the grass around it cut, the service roads maintained, and has to pay property taxes and insurance. It has to replace lubricants and inspect facilities, but it does not have any expenses that turn off or turn on with regard to whether or not the wind is blowing, unlike a plant where fuel conveyers and fuel expenses start and stop with the plant's operation. The first year revenue requirement for the plant is $36.7 million. In that first year, the plant generates about 1.5 billion kWh

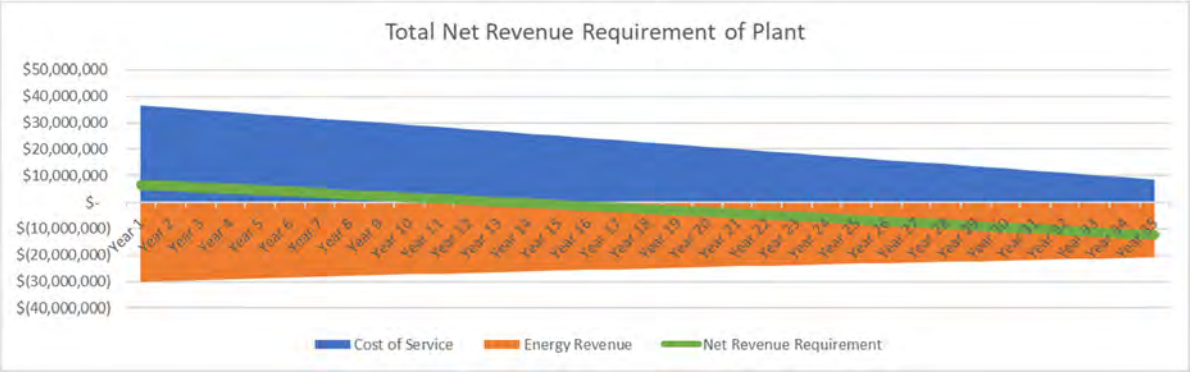
of energy, which is worth about 2 cents per kWh, producing first year revenues of about $30 million. Therefore, the revenue requirement of the plant is about $6.7 million ($36.7 in cost, minus $30 in revenue).

Under the approach used by Empire, which was relied upon by MECG and Consumers Counsel, Class A would be credited about $1.7 million for the plant existing, and Class B would pay about $8.5 million for the plant.

Cost of Service		Year 1
Class A	$	18,357,143
Class B	$	18,357,143
Revenue		Year 1
Class A		20,100,000
Class B		9,900,000
Revenue Requirement		Year 1
Class A	$	(1,742,857)
Class B	$	8,457,143

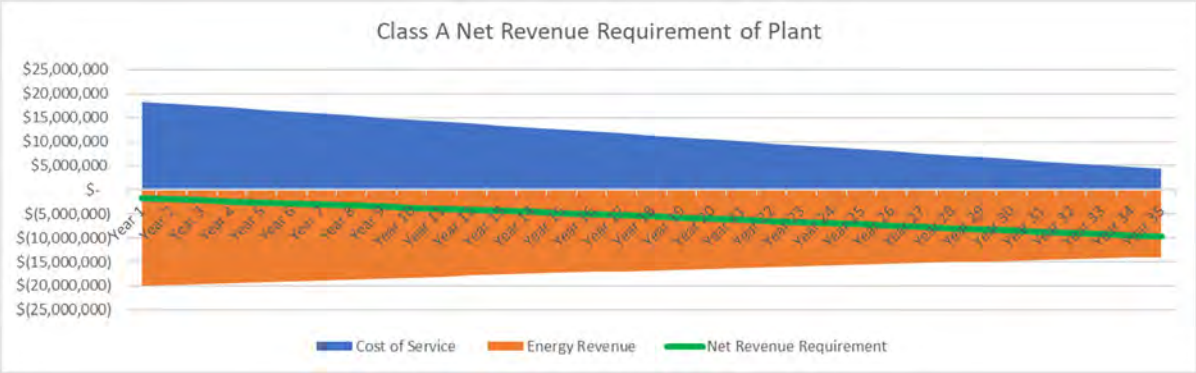
Q. Does this problem get better, or worse, over time?

A. This problem gets worse over time. The annual net revenue requirements of the hypothetical plant, using reasonable operating assumptions, is illustrated below:

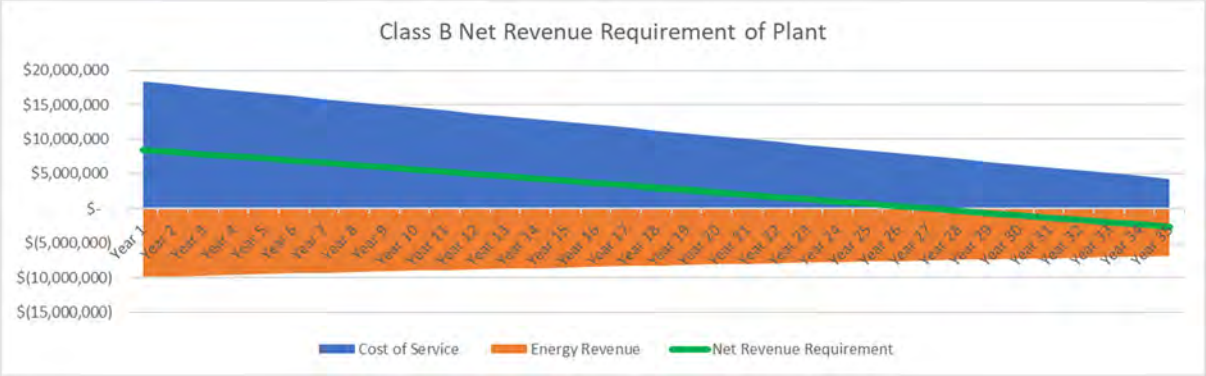


In this example, over the life of the plant, it has a cost of service of $789,994,478, and it produces revenues of $881,097,750, producing $91 million of revenue in excess of its cost of service.

However, the allocations to the classes look very different:



Class A benefits from $195 million of energy sales revenue in excess of the allocated cost of service over the life of the plant.



While Class B pays $104 million more in the cost of service for the plant than it receives in revenue.

Q. For Empire's production assets in this case, even if it were not fundamentally and demonstrably unfair to allocate wind farm cost on a demand basis when the revenues are allocated on an energy basis, is it even reasonable to allocate the cost of wind farms on a demand basis?

A. No. It is not reasonable under the circumstances of this case to allocate the cost of a wind farm on a demand basis.[8] For Empire, peak loads driving capacity investments do not currently coincide with times of peak wind output.

Q. What is the overall effect of the disproportionate allocation of renewable generation and renewable generation revenue in the Empire study?

A. The residential and general service classes are overallocated revenue requirement responsibility, and the large general, small primary, large power, and transmission service classes are underallocated revenue requirement responsibility.

Q. Did the consultants retained by MECG or by Consumers Counsel address this unreasonable treatment in the Empire study?

A. No.

Q. Is the disproportionate allocation of renewable generation revenue requirement responsibility a significant enough issue that the Commission should not rely on the Empire CCOS or its derivative studies?

A. Yes.

Failure to Appropriately Functionalize All Generation Plant

Q. Was it unreasonable for Empire's CCOS consultant to fail to functionalize wind farm costs recorded to intangible plant accounts as production-related, or to otherwise allocate those costs as production-related?

[8] While Staff cannot think of one now, it is possible there is some scenario where it may be reasonable.

A. Yes.

Q. Was it unreasonable for Empire's CCOS consultant to fail to functionalize wind farm costs recorded to transmission accounts as production-related, or to otherwise allocate those costs as production-related?

A. Yes.

Q. Did the consultants retained by MECG or by Consumers Counsel address this unreasonable treatment in the Empire study?

A. No.

Q. What is the effect of this unreasonable allocation?

A. The residential and general service classes are overallocated cost of service responsibility, and the large general, small primary, large power, and transmission service classes are underallocated cost of service responsibility.

Q. Is the failure to appropriately functionalize the generation plant recorded to intangible and transmission plant accounts a significant enough issue that the Commission should not rely on the Empire CCOS or its derivative studies?

A. Yes.

Distribution Classification

Q. Was Empire's use of indexed asset cost for its distribution classification reasonable?

A. No. Empire's ratebase includes poles and conductors and conduits that were installed in the 1930s, the 1990s, last year, and every year in between. Mr. Lyons has adjusted those asset values to classify as "customer" each asset as though it was just constructed. This is

not reasonable, and distorts the cost of a minimum system, which includes components installed over the last century.

Q. Is it reasonable to classify some portion of AMI meters as something other than customer-related?

A. I believe it could be reasonable to recover some portion of AMI metering through something other than the customer charge, as meter information can be utilized for outage detection or other purposes; however, at this time I do not believe it is reasonable to classify AMI metering in a manner that results in shifting the allocation of the costs of those meters among customer classes, as recommended by Consumers Council's consultant Ms. Palmer.[9]

Q. Is the zero-intercept method a reasonable approach to classify the distribution system accounts?

A. Yes. I agree with Ms. Palmer that when a utility's distribution system is entirely or nearly entirely primary-voltage assets the zero-intercept method can over-classify customer-related assets.[10] However, the zero-intercept method better recognizes geographical considerations than the minimum system method or the basic customer method for the overhead and underground system distribution accounts.

Q. Does the over-classification of customer-related assets end in over-allocation of distribution cost of service?

A. No. Empire classifies much of the distribution system as customer-related, and then allocates not only the associated capital costs, but also expenses, and significant overhead

[9] Pages 20-24 of Ms. Palmer's testimony contain Q&As regarding AMI.
[10] Pages 6-20 of Ms. Palmer's testimony contain Q&As regarding classifying distribution system costs using a minimum size or zero-intercept study.

cost of service on the number of customers in a studied class. For example, about $250 of general plant is allocated to each customer. General Plant accounts are the Empire office buildings, furniture, the land on which the offices sit, the cars that executives drive to hearings and meetings, and other miscellaneous items that are not related to generating energy, distributing energy, or directly serving customers. In total, over 86% of General Plant is allocated to the Residential customers on the basis of customer count.

Interclass Revenue Responsibility Allocations

Q. Are the recommendations made by Mr. Lyons, Ms. Palmer, or Ms. Maini reasonable in this case?

A. No. These recommendations each rely on the Empire CCOS, which is not reliable for the reasons discussed here and in the testimonies of Staff witnesses, Marina Stever and Hari K. Poudel, Phd.

Q. Even if the Commission found the studies were reasonable, is this the appropriate case to make major changes to interclass revenue responsibility?

A. No. As discussed in the CCOS direct testimony of James A. Busch, this case is likely to impose a huge increase on customers who have been beleaguered by Empire's billing system issues. Mr. Busch's recommended interclass revenue responsibility is reasonable under the circumstances of this case.

Asymmetrical Rate Schedule Adjustments

Q. Is it reasonable to adjust different rate schedules differently within a rate class under the circumstances of this case?

A. No. Staff witnesses Marina Gonzales provides additional rebuttal concerning non-residential allocation approaches, and Dr. Poudel provides additional rebuttal concerning residential allocation approaches.

Q. What is needed to make adjustments within a rate class?

A. A good understanding of the cost basis is needed to reasonably realign revenue recovery within a class. As discussed above, that is not present here.

Q. What happens if rates are asymmetrically adjusted within a class without a clear relationship to the cost basis?

A. Ratepayers will switch to the more affordable option. While time-based rate plans are likely less expensive to serve, all else being equal, some witnesses recommend that some of those rate plans be increased by more than the non-time-based rate plans. Even where the recommended asymmetrical shifts do align with lower cost of service for time-based plans, the level of detail to actually address that disparity cannot be studied in this case with the hourly load data that is available. Unwarranted asymmetrical shifts could cause customer shifts which may increase cost of service for all customers in the long run.

Q. Are further details of this issue provided by Staff?

A. Yes. Staff witness Gonzales discusses non-residential revenue allocation, and Staff witness Dr. Poudel discusses residential revenue allocation.

Conclusion

Q. Does this conclude your rebuttal testimony?

A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

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	)))))	Case No. ER-2024-0261

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 *Rebuttal 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
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 18th day of August 2025.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: April 04, 2029
Commission Number: 12412070

D Suzie Mankin
Notary Public