

MISSOURI PUBLIC SERVICE COMMISSION



STAFF'S REPORT RESPONDING TO CERTAIN COMMISSION QUESTIONS

KANSAS CITY POWER & LIGHT COMPANY CASE NO. ER-2016-0285

DECEMBER 14, 2016
JEFFERSON CITY, MISSOURI

I. Commission Orders

KCPL filed tariffs initiating this File No. ER-2016-0285 on July 1, 2016. On August 8, 2016, the Commission entered its *Order Directing Submittal of Infrastructure Efficiency Tariff* (“*Infrastructure Order*”) and on August 24, 2016, the Commission entered its *Order Directing Consideration of Certain Questions in Testimony* (“*Customer Service Order*”).

In its *Customer Service Order*, the Commission directed Staff to consider certain issues in its direct testimony, specifically:

1. Installation of AMI smart meters for residential and commercial customers;
2. Plug-in Electric Vehicle Rate: The Plug-in Electric Vehicle rate (PEV) provides a discount on electricity during nighttime hours, 11 p.m. until 7 a.m. With the PEV rate, you can save money on your electric bill just by making simple changes like setting a timer for your vehicle to charge at night and shifting your other electricity usage from weekday summer afternoons. The PEV rate has three different time periods: On-peak, Off-peak and Super Offpeak. See: https://www.georgiapower.com/docs/rates-schedules/residentialrates/2.30_TOU-PEV-5.pdf;
3. Optional Residential Time-of-Use rates (hourly) and Time-of-Day rates - <https://www.ameren.com/-/media/missourisite/Files/Rates/UECSheet54Rate1MRES.pdf>;
4. PACE Property Assessed Clean Energy programs <http://energy.gov/eere/slsc/property-assessed-clean-energy-programs>; and
5. PAYS Pay As You Save programs <http://www.eeivt.com.1>

In its *Infrastructure Order*, the Commission directed Staff to file a proposed tariff that would provide for a discounted volumetric rate or customer charge, or a waiver or reduction of line extension related charges, or some other mechanism to reduce bills of customers accessing infrastructure identified as under-utilized. Any discount provided by the tariff shall be related, at least in part, to a difference in the cost to serve customers who utilize existing infrastructure versus customers requiring infrastructure expansion.

II. AMI “Smart” Metering

KCPL’s direct testimony in this case discussed their installation of AMI technology in the testimony of several witnesses. Company witness Scott H. Heidtbrink’s testimony included the following description of their AMI meter replacement program on page 9:

Advanced meter infrastructure (“AMI”) – In February 2014, KCP&L started a two year refresh project to upgrade the existing automated meter reading infrastructure in the legacy KCP&L territory and meters that were deployed in the mid-1990’s. The objective of this project was to replace the network technology and approximately 500,000 meters that were nearing the end of their useful lives. That project was completed December 31, 2015.

In addition, Company Witness Ronald A. Klote’s testimony included the following discussion of their AMI program on Page 52:

Beginning in 2014, the Company began installing AMI technology that would replace all of the Company’s Automated Meter Reading meters. Adjustment CS-89 computes the incremental increase in the meter reading contract that will be associated with the newly installed AMI meters. The new AMI meters are a new technology that will bring increased functionality such as providing load profile data for each meter and provide increased functionality around power outages and restoration events. KCPL.com also currently has a web page titled Meter Replacement that provides maps of both KCPL’s and GMO’s service territories where the AMI replacement has taken place.

The two-year meter refresh project started in KCPL’s Kansas service territory. In 2014, most of the meters that KPCL replaced were in Kansas, with KCPL replacing a few in Missouri. In 2015, the meter replacement moved to Missouri and KCPL’s service territory near the Kansas City metro area.¹ There is a relatively small group of KCPL’s Missouri customers, approximately 15,000, that do not have AMI meters. Those customers are located in Saline, Chariton, Carroll, Lafayette, Howard, and Pettis Counties. This is the portion of KCPL’s service territory that is geographically separated from KCPL’s metro customer base and meter readers are still reading the meters in this area. Although KCPL is planning to replace the existing meters for this group of customers with AMI meters in the next 3 to 5 years, that work has not yet taken place. Since KCPL has installed AMI meters at over 90% of its Missouri customer’s homes and businesses, KCPL has the largest penetration of AMI meters of any of the investor-owned electric utilities in the state of Missouri.

Although AMI meters have been installed in over 90% of Missouri customers’ homes and businesses, as noted in the Residential ToU or ToD section of this Report, some of the benefits AMI meters offer are not compatible with KCPL’s current billing/operating system.

Staff Expert/Witness: Daniel I. Beck, P.E.

¹ Although it is not part of this case, Staff would also note the approximately 180,000 GMO customers, which equates to approximately 56% of GMO’s customers, also received new AMI meters by September 2016.

Advanced Meter Infrastructure (“AMI”) Meter Installation Tariffs

As described in the section of this Report titled AMI “Smart” Meters that addresses questions posed by the Commission, KCPL installed approximately 500,000 AMI meters in Kansas and Missouri in the 2014-2015 timeframe. During that process, a small number of customers have contacted the PSC with concerns about the installation of the AMI meters and have requested that a traditional analog meter, which would require a meter reader to read the meter, be installed at their home.

AMI is an integrated system of meters, communication networks, and data management systems that enables two-way communication between utilities and their customers. The primary expected benefits of AMI to KCPL and its customers include improved efficiency in collecting usage data, billing, outage response time and customer service.

There has been increased concern from the general public that AMI meters may contribute to ill-health effects due to Radio Frequency (“RF”) radiation. Additional concerns include that AMI meters are a potential venue for invasion of privacy, information sharing, and piracy of information, as well as a potential threat for causing fires due to the meter itself overheating. Both informal and formal complaints have been filed with the PSC, in which electric utility customers request alternatives to having an AMI meter installed at their residence, citing the concerns mentioned above.

Staff is not generally opposed to the installation of AMI meters and is not aware of documented proof that any negative health effects, privacy or fire risk concerns have been validated. However, given the level of customer concern in Missouri and in general across the country, Staff recommends KCPL modify its tariff to create a meter opt-out program, which would include a provision to allow customers the option of a manually read meter rather than an AMI meter. The cost associated with any meter opt-out program should be cost based and borne by those customers that choose to utilize the program.

GMO is the first Missouri electric utility that has an approved meter opt-out program and that program is the result of the Commission approved Stipulation and Agreement in GMO’s most recent rate case, Case No. ER-2016-0156. The tariffs resulting from that case will be effective on December 22, 2016 and Section 5.05 Non-Standard Metering Service is the primary portion of the tariff that describes that program. The program’s rate design includes a \$150 one time Initial Setup

Charge and a monthly recurring Non-Standard Meter Charge of \$45.00 per month. Staff recommends that KCPL implement this same type of program and cost-based fee recovery.

Since KCPL is not currently offering a meter opt-out program and GMO is just implementing its program, the data supporting the costs for a meter opt-out program does not currently exist for a Missouri electric utility. Therefore, Staff recommends that KCPL use the same cost structure for the meter opt-out program as is being used by GMO. Staff would also recommends that KCPL keep track of the costs associated with the meter opt-out program in order to have cost data in KCPL's next rate case to evaluate the one-time setup charge and recurring monthly meter read charge proposed above.

Staff understands the benefit of AMI meters and realizes that a meter opt-out program is counter-productive to those benefits. However, KCPL still has a small number of customers that have manually read meters in place. Therefore, a mechanism to manually read customer electric meters that accounts for employees, billing software, equipment and vehicles will remain in place despite implementation of the AMI meter project. That mechanism would aid in manually reading the meters of meter opt-out customers.

Staff Expert/Witness: Daniel I. Beck, P.E.

III. Plug-in Electric Vehicle Rate

KCPL Clean Charge Network Background

KCPL and GMO have launched an initiative to install and operate more than 1,000 electric vehicle ("EV") charging stations throughout the Greater Kansas City region within KCPL's and GMO's Missouri and Kansas service territories ("Clean Charge Network" or "CCN").² KCPL submitted a new tariff (Public Electric Vehicle Charging Station Service Schedule CCN) to charge EV owners who fill up/charge their vehicles at the CCN charging stations throughout the KCPL region. The Pilot Program consisted of free electricity for EV owners for the first two years of the program. The two year "free" period will end December 31, 2016. The proposed Schedule CCN dictates the allowable energy charges for EV owners and discretionary session charges set by the host site owners.

² *In the Matter of Kansas City Power & Light Company's Request for Authority to Implement A General Rate Increase for Electric Service*, Case No. ER-2016-0285, *Tim Rush Direct Testimony*, filed July 1, 2016 at Page 21, l. 2-5.

The CCN is designed to address KCPL’s service territories (KCPL and GMO) and to service KCPL’s mobile customers when they are in KCPL’s certificated territory.³ It is specific to KCPL-owned charging stations available to the public throughout KCPL’s Missouri service territory. The total budgeted capital cost for the (whole) project (Kansas and Missouri) is \$16.6 million, of which, based upon the service territory deployment plan, approximately \$6 million represents the budgeted investment in KCPL’s Missouri jurisdiction as the result of situs-based allocators. In addition to these costs, KCPL anticipates total annual operations and maintenance (“O&M”) expense of roughly \$250,000, which will be allocated to KCPL’s Missouri jurisdiction.⁴

The CCN project involves just over 1,000 charging stations throughout KCPL’s and GMO’s service territories. The actual number of charging stations located in Missouri will be determined, in part, by host interest. KCPL included a cap in Schedule CCN of 400 charging stations⁵ with Commission approval required for additional stations under the tariff.⁶

The proposed tariff does not address charging of EVs at customer single-family residences or at privately owned and operated charging stations; for example, some businesses have provided charging at their sites specifically for their employees and guests. Specific to the charging of EVs at customer single-family residences, the Commission issued an order on August 24, 2016, *Order Directing Consideration Of Certain Questions In Testimony*, which directed Staff to consider in its direct testimony the following questions pertaining to EV charging station networks and Time of Use (“TOU”) rates:

1. Plug-in Electric Vehicle Rate: The Plug-in Electric Vehicle rate (PEV) provides a discount on electricity during nighttime hours, 11 p.m. until 7 a.m. With the PEV rate, you can save money on your electric bill just by making simple changes like setting a timer for your vehicle to charge at night and shifting your other electricity usage from weekday summer afternoons. The PEV rate has three different time periods: On-peak, Off-peak and Super Off-peak. See: https://www.georgiapower.com/docs/rates-schedules/residential-rates/2.30_TOU-PEV-5.pdf;

³ *In the Matter of Kansas City Power & Light Company's Request for Authority to Implement A General Rate Increase for Electric Service*, Case No. ER-2016-0285, Tim Rush Direct Testimony, Page 21, Lines 9-16.

⁴ *In the Matter of Kansas City Power & Light Company's Request for Authority to Implement A General Rate Increase for Electric Service*, Case No. ER-2016-0285, Tim Rush Direct Testimony, Page 28, Lines 1-3.

⁵ *In the Matter of Kansas City Power & Light Company's Request for Authority to Implement A General Rate Increase for Electric Service In the Matter of Kansas City Power & Light Company's Request for Authority to Implement A General Rate Increase for Electric Service*, Case No ER-2016-0285, Tim Rush, Direct Testimony, (Rush’s testimony cites 350 charging stations for KCPL Mo, while the tariff cites 400 charging stations.)

⁶ *In the Matter of Kansas City Power & Light Company's Request for Authority to Implement A General Rate Increase for Electric Service*, Case No. ER-2016-0285, Tim Rush Direct Testimony, Page 28, Lines 7-11.

2. Optional Residential Time-of-Use rates (hourly) and Time-of-Day rates - <https://www.ameren.com/-/media/missourisite/Files/Rates/UECSheet54Rate1MRES.pdf>;

Staff analyzed and compared the KCPL Schedule CCN tariff with the Georgia Plug-In Electric Vehicle Time of Use rate, discussed below. In Staff's opinion, the Georgia model provides proper incentives to charge EVs in off peak hours by breaking off peak hours into two categories: Off-Peak and Super Off-Peak.

Georgia Plug-In Electric Vehicle Time of Use Rate

Georgia Power has a Plug-in Electric Vehicle – Time of Use (PEV-TOU) rate that is separate from the residential TOU rate. The Georgia model has a specific rate for Plug-In electric vehicles referred to as the PEV-TOU rate. The PEV rate provides a discount on electricity during nighttime hours, 11 p.m. until 7 a.m. With the PEV rate, the ratepayer can save money on his/her electric bill by making simple changes like setting a timer for the vehicle to charge at night. The PEV rate has three different time periods: On-peak, Off-peak, and Super Off-peak.

ON-PEAK:

The On-Peak period is defined as the hours starting at 2:00 p.m. and ending at 7:00 p.m., Monday through Friday, for the calendar months of June through September (Summer Months). The above hours on days in which the following holidays are observed shall be considered Off-Peak: Independence Day and Labor Day.

OFF-PEAK:

The Off-Peak period is defined as the hours between 7:00 a.m. and ending at 11:00 p.m. for weekends, holidays, and the calendar months of October through May. The Off-Peak period for the calendar months of June through September (Summer Months) is defined as the hours between 7:00 a.m. and 2:00 p.m. and the hours between 7:00 p.m. and 11:00 p.m., Monday through Friday.

SUPER OFF-PEAK:

The Super Off-Peak period is defined as the hours between 11:00 p.m. and 7:00 a.m., Monday through Sunday, for all calendar months.⁷

⁷ See: https://www.georgiapower.com/docs/rates-schedules/residential-rates/2.30_TOU-PEV-5.pdf.

Staff Analysis

In addition to Staff's recommendations for reporting requirements and tariff alterations articulated on pages 172 through 174 of Staff's Cost of Service report, Staff recommends the Commission require consistency among the IOUs in the state with the implementation of PEV-TOU charging rates. The PEV-TOU rate is needed to incent EV owners to charge their EVs in Off-Peak and Super Off-Peak timeframes. The rate is needed to distinguish typical TOU rates with a rate specific to private home and business EV charging stations.

While the Georgia Model provides an example of how a PEV-TOU rate would be implemented, an obstacle in developing any PEV-TOU rates will be the inability of KCPL's current billing system to record TOU rates without labor-intensive manual calculations, as discussed by Staff witness Sarah Kliethermes's Residential Time-of-Use and Time-of-Day Rate Design testimony.

The PEV-TOU rate should be offered as an opt-in option to EV owners and businesses that own private charging stations for their employees and customers – i.e., businesses that could have peak/off-peak charges, thereby distinguishing the class from the TOU rate offered to the Residential class of customers. This specific rate should be developed and offered to the customers who have private EV charging stations in their residences and businesses.

To learn from the pilot projects, Staff recommends that KCPL gather data and report annually to the Commission and interested stakeholders on the impact of EVs on grid reliability as items such as:

1. EV Load Leveling
 - a. Did the load increase overnight due to EV charging?
 - b. Did the load level as a direct result of the EV charging network?
 - c. Did the EV load allow the utilities to spread out fixed generation cost and recover over a greater amount of electricity sold?
 - d. Impact on customer bills due to EV load and the resulting load leveling?
 - e. Did the EV network prevent periods of over-generation?
 - f. Did the EV network smooth out large load ramps in the morning and evening?
2. The IOUs explore various emerging technologies and their impact on the areas of demand-response, supply-side resourcing and second battery life programs.⁸

Staff Expert/Witness: Byron Murray

⁸ EFIS, Case No. EW-2016-0123, Corrected Staff Report, Page 30.

IV. Residential Time-of-Use and Time-of-Day Rate Design

On October 26, 2016, Staff and KCPL participated in a telephone conference concerning the deployment of AMI metering and related billing software in KCPL's service territory. As in prior discussions, KCPL has represented that while nearly all of its residential customers are metered using AMI metering, KCPL has not yet transitioned to a billing system that is capable of recording the multiple meter readings necessary to bill customers on a Time-of-Use ("ToU") or Time-of-Day ("ToD") rate without labor-intensive manual calculations. KCPL represented that the AMI meters and billing system as currently configured cannot actually be used for ToU or ToD billing, and instead, customers currently served on the frozen ToU schedule are metered using a commercial double-read meter that separately records usage during pre-determined daily intervals. Those customers are manually billed. KCPL has represented that the billing system necessary for large-scale AMI-based ToU or ToD rates is expected to "go live" April 1, 2018.

Despite the limitations of the current billing system and the interaction of that billing system with the AMI meters to efficiently bill dynamic pricing rates, Staff and KCPL personnel have pursued initial discussions of a mandatory geographically-limited dynamic pricing program. The intent of such a program would be to explore the applicability of such a program to mitigate upgrades to the distribution system, in addition to the typical application of peak rebate programs to mitigate purchases of expensive energy and capacity.

Specifically, Staff and KCPL are working to design a program as follows:

1. Identify a number of premises served on a given distribution circuit, preferably one that is experiencing load growth from existing premises, as opposed to one experiencing load growth due to additions of additional premises taking service,
2. Install double-read meters consistent with a pre-determined program budget,
3. Customers in the study area would continue to be billed on the applicable rate using a manual billing process, but a peak time rebate would be developed and credited against bills. Specific times for the rebate would depend on the load characteristics of the studied circuit, but late afternoon and early evening hours during the summer would be anticipated to be the applicable time period. This also coincides with above-average market prices for energy, and the time of day and year typically associated with RTO capacity requirements.
4. Study whether the application of a peak time rebate had an impact on delaying the need for distribution system upgrades. The needs of adequately serving the impacted customers would come before the prioritization of this study, such that any necessary upgrades would be made and not unreasonably delayed.

Staff Expert/Witness: Sarah Kliethermes

V. PACE Property Assessed Clean Energy

PACE

Property Assessed Clean Energy (“PACE”) financing is designed to make payments affordable by offering a fixed interest rate that is payable over an extended period of time.⁹ With residential PACE programs, home improvement energy efficiency measures such as HVAC, solar, windows and doors, roofing, air sealing and insulation are permanently installed and assessed to the property and the assessment is designed to transfer with the home.

The Missouri Clean Energy District (“MCED”) has partnered with Renovate America (“Renovate”) to bring PACE to homeowners in the state of Missouri through the Home Energy Renovation Opportunity (“HERO”) program. HERO is the leading program for PACE financing and has provided more than \$1.3 billion in financing since 2012 and has 95% market share of residential PACE in California. Previously California was the only state utilizing the HERO program. Renovate selected Missouri to be the next state for HERO and opened a new office in Kansas City, Missouri on May 1, 2016. Contractor training started mid-June, 2016, and HERO was launched in July, 2016. Renovate is acquiring a large and growing contractor network¹⁰ and has created an industry-leading software platform, helping contractors expand their business. HERO registered contractors have access to HERO Pro – an integrated, secure platform designed to make the estimating, approval, documentation, and funding process as easy as possible for homeowners and contractors. HERO provides a comprehensive training and registration program, designed to familiarize contractors with the financing terms and the property owner approval process.

Thus far, residential PACE is only available in Jackson County¹¹ in Missouri. The process for initiating PACE starts with getting the County Commission to sign a resolution to have PACE in the county. Jackson County already had a signed resolution by the County Commission to have commercial PACE. An addendum was required to include residential PACE. After County Commission approval, the tax collector of the county has to agree and sign an installment payment agreement (“IPA”) to collect as a tax. To date, Renovate, through its HERO program, has \$10 million in approved loans in Jackson County, including \$2.4 million in current projects and \$700,000 in completed projects.

⁹ Up to 20 years.

¹⁰ More than 7,000 in California and more than 150 in Missouri.

¹¹ As of the 2010 census, the population of Jackson County was 674,158 making it the second-most populous county in Missouri.

Program eligibility, which is subject to change, includes the following:

- Maximum 90% loan-to-value (LTV) ratio;
- Current on property taxes for last twelve months and not late more than once over the prior three years;
- Current on mortgage for last twelve months;
- No bankruptcy for last two years;
- No involuntary liens on the property; and
- \$2,500 minimum financing; maximum financing is twenty percent of property value (LTV cannot exceed 100%).

Renovate indicated there are plans to implement the HERO program in various, mainly urban, counties throughout Missouri. The biggest obstacle currently is the hesitation from the county tax collectors to sign and agree to the IPA.

PACE financing has been available for Missouri commercial, industrial, agricultural, multi-family, not-for-profit and public facilities since 2011. In January 2011, Jefferson City formed the Mid-Missouri Clean Energy Development Board, now known as MCED, the first local PACE clean energy development board in Missouri. MCED contracted with the Missouri Clean Energy Fund LLC as its PACE administrator. In July 2015, the Show Me PACE Clean Energy District (“Show Me PACE”) began offering funding statewide for clean energy project improvements. Show Me Pace selected the Missouri Energy Initiative as the administrator. In 2016, Show Me PACE completed the largest agricultural PACE project in the country, which utilized \$4 million in PACE financing for energy and water improvements to a facility in Pleasant Hope. Other commercial projects that have utilized PACE financing in Missouri are a three-story warehouse renovation in downtown Kansas City, an office building retrofit in Maryland Heights, a large warehouse and office building retrofit in Shrewsbury, and a manufacturing facility retrofit in Chesterfield.

Staff Expert/Witness: Bradley Fortson

VI. PAYS Pay As You Save

Pay As You Save® (“PAYS®”) is a market-based system that enables utility customers to purchase and install cost-effective energy efficiency upgrades or distributed renewable energy assets through a voluntary program that assures immediate net savings to customers.¹² The idea behind PAYS is for energy-saving upgrades to be installed in a customer’s home or building, but the utility

¹² <http://www.financeforresilience.com/priority/pay-save-financing-distributed-clean-energy-upgrades/>

pays the up-front cost of the installed energy-saving measures. To recover its costs, the utility puts a fixed charge on the customer's electric bill that is significantly less than the estimated energy savings from the upgrades. Therefore, the customer sees immediate savings by paying a fixed charge that is less than the estimated energy savings. Once the utility recovers its costs, the obligation of the customer to pay ends.

Core elements and general terms and conditions for PAYS programs typically include the following:¹³

- Customers voluntarily choose to opt into a program that allows a utility to invest in upgrades at a site and recover its costs on the bill.
- Cost recovery charges at most implementing utilities has been equal to or less than eighty percent of the estimated savings, generating immediate net savings to the customer.
- Cost recovery for the utility, through a fixed charge on a participant's bill, is not more than 80% of the estimated savings over the useful life of the upgrade. As a result, the portion of the estimated monthly net savings that a participant keeps as immediate net savings is 20% or higher.
- The utility will only make investments that are cost-effective with the terms above, but the customer can make an upfront payment to cover the cost premium of upgrades that are not cost-effective under current rates.
- The utility may use any source of capital to make the investment, including third-party capital where permitted.
- The investment is tied to the meter, not to the customer, so the cost recovery charge applies automatically to successor customers at that location.
- Energy and water efficiency are considered essential utility services, so the customer can be disconnected for non-payment.
- Capital provider is assured repayment in full by the utility regardless of the actual collections from customers.
- If upgrades stop working through no fault of the customer, the cost recovery charge ends until the efficiency improvement is repaired.
- If repairs are necessary or a property were to remain vacant for a period of time, the term of the program may be extended to ensure full cost recovery by the utility.
- The utility may harness multiple benefit streams to pay incentives that help more upgrades meet the threshold for cost effectiveness and quality for the program.

¹³ List taken from an Energy Efficiency Institute, Inc. paper titled Financing Distributed Energy Upgrades that was used in a Holmes Hummel Ph.D. presentation to Staff and other parties on August 19, 2016.

- The utility can cover charge-offs from a variety of sources, including a dedicated loss reserve or from all customers, the same as other uncollectibles.
- Utilities capture multiple value streams, including avoided demand charges and avoided energy procurement, to strengthen their balance sheet while lowering customer bills.

Currently there is no Missouri investor owned utilities participating in the PAYS system. As a result of the MEEIA statewide collaborative process, the idea of on-bill financing is being researched and evaluated.

Staff Expert/Witness: Bradley Fortson

VII. Infrastructure Efficiency

In its Infrastructure Order, the Commission noted that in KCPL's comments filed December 8, 2015, in File No. EW-2016-0041, KCPL stated that as part of its annual contingency planning, KCPL can identify physical assets that are under-utilized, and that KCPL submitted a list of transformers/circuits where at least 50% of rated capacity is available under both normal and contingency scenarios.

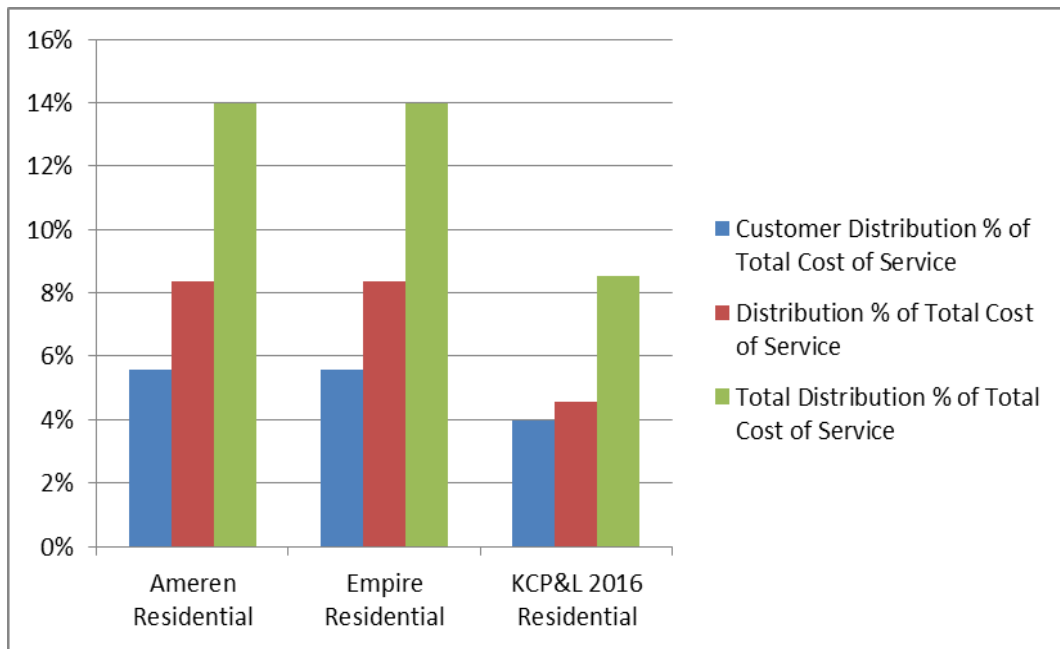
On October 26, 2016, Staff and KCPL participated in a telephone conference concerning identification of such areas. Staff and KCPL discussed design of a tariff to apply a class-level percentage discount, discussed more fully below, to such volumetric areas. KCPL has indicated its willingness to work with Staff and other parties to identify such geographic areas, however, such information was not available to attempt to determine any applicable site-specific cost-based discounts.

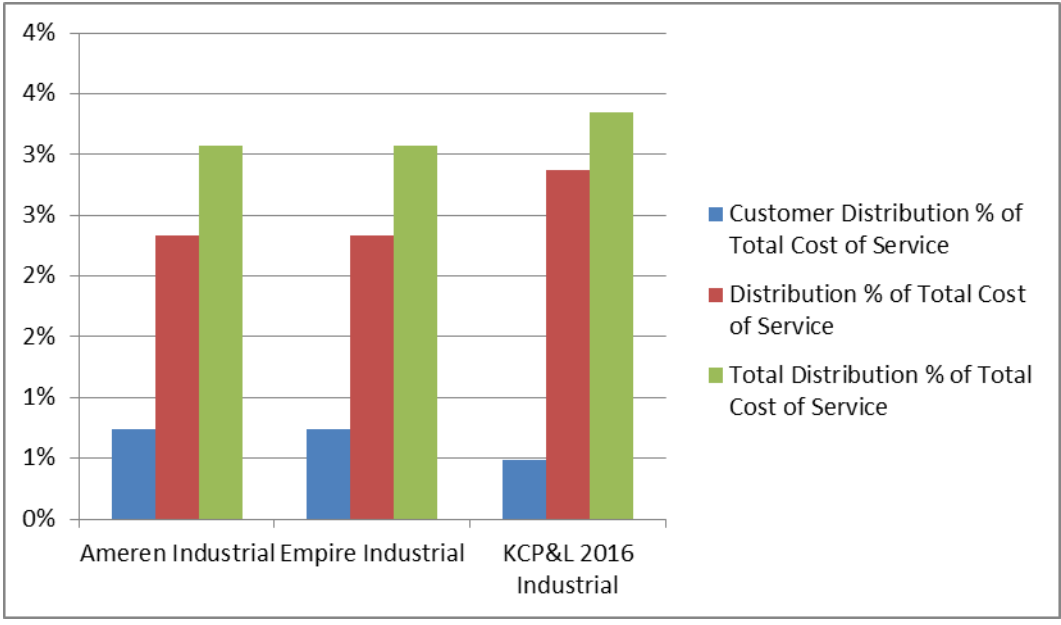
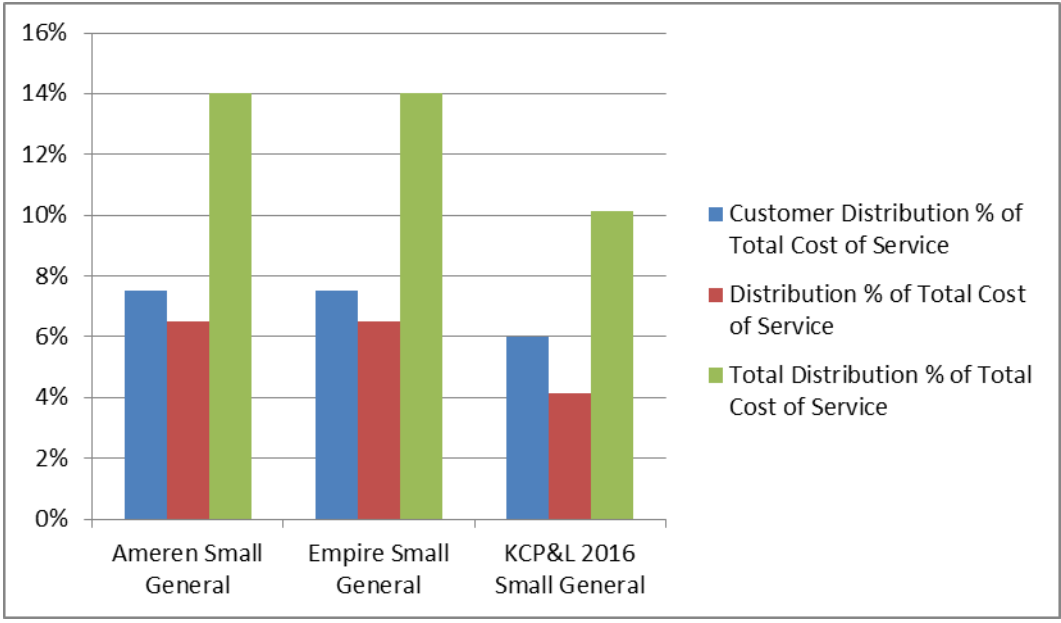
In its Infrastructure Order, the Commission directed Staff to propose a "tariff that would provide for a discounted volumetric rate or customer charge, or a waiver or reduction of line extension related charges, or some other mechanism to reduce bills of customers accessing infrastructure identified as under-utilized. Any discount provided by the tariff shall be related, at least in part, to a difference in the cost to serve customers who utilize existing infrastructure versus customers requiring infrastructure expansion." Staff has reviewed the Class Cost of Service Studies it has prepared in each of the last rate cases for Empire and Ameren Missouri, as well as the pending KCPL rate case.¹⁴

¹⁴ The Class Cost of Service for Ameren Missouri's pending rate case, Case No. ER-2016-0179 has not yet been determined. There was not a Class Cost of Service Study performed in the last KCP&L Greater Missouri Operations Company rate case.

At a class level, and as studied in the direct filing in each of those cases, the customer-related distribution revenue-requirement ranges from approximately less than .5% of industrial cost of service, to 4%-7% of residential cost of service, to 6%-8% of small general cost of service. The customer-related distribution facilities include the service drop, the meter base, and the meter itself. On October 26, 2016, Staff and KCPL participated in a telephone conference concerning identification of costs that would be reasonably discounted on a cost-basis for qualifying customers. In particular, Staff questioned whether advanced AMI meters were being installed on premises not currently receiving service. KCPL represented that AMI meters are being deployed to all premises as the roll-out occurs, so it will not be necessary to make a separate adjustment to account for the installation of a meter that was not considered in establishing the class-level revenue requirement.

Across the studied utilities, the entire distribution system cost of service as a percent of class revenues ranges from approximately 3% for industrial customers, to 4%-7% for small general customers, to 9% - 14% for residential customers.





It would be difficult to conclude that customers in underutilized areas should provide *no* revenue recovery for the distribution system. While functionalized costs are an important consideration of most analysts in designing rates, rates rarely perfectly align with the functionalized costs determined at a class level in a CCoS. Further, not only is a given CCoS a snapshot in time based on a particular party’s recommended revenue requirement, but also that CCoS is based on a class level study without regard to geography. Finally, as currently configured, CCoS functionalized results are calculated based on a class-average rate of return. As such, even if the exact same

facilities were installed for two classes, one under-contributing to rate of return and one over-contributing to rate of return, the functionalized results would show the revenue requirement associated with the facilities for the over-contributing class to be higher than the revenue requirement associated with the same facilities for the under-contributing class. The Commission's directed inquiry in this case appears to be directed at geographically-specified cost causation, which requires a level of data not currently available to Staff, and a set of assumptions not typically made in designing rates. Staff has discussed the availability of geographically-specific data with KCPL, and requested additional information from KCPL on potential geographically-identifiable areas for which to calculate more specific rates. In the absence of this circuit-specific data, and in the interest of simplicity and ease of implementation, Staff recommends that if a volumetric or monthly-bill based discount is to be implemented, such discount be proportionate to the functionalized customer-related distribution costs for each broad category of class, applied as a percentage to the customer's monthly bill after application of all other applicable surcharges, discounts, and riders.

Specifically for KCPL, Staff recommends Residential customers in impacted areas would receive a monthly discount of approximately 5%, Small General Service customers would receive a monthly discount of approximately 6%, and all other customer classes (MGS, LGS, and LPS) would receive a monthly discount of approximately .5%. Staff expects KCPL will provide greater information to geographically identify these areas as needed for promulgation in an appropriate tariff sheet.

As discussed in its report in File No. EW-2016-0041, and consistent with GMO's expressed desire in File No. ER-2016-0156 for consistency in facility extension tariff provisions across the KCPL and GMO certificated areas, Staff recommends that KCPL modify its facility extension tariff provisions to more fully consider the incremental costs a customer causes to a system in determining how much, if any, customer advance is required.¹⁵ By considering these costs, a customer causing new utility investment is more likely to bear some offset to that investment than under other approaches that do not consider incremental costs. As it applies to a customer accessing infrastructure already in place and not requiring any upgrades, this means that the customer would

¹⁵ GMO's tariff calls for consideration of the relationship between "Estimated Margins," and "Fixed Carrying Costs" where Estimated Margins are determined by first multiplying the effective rates for each customer class by the estimated incremental usage – and then subtracting 1) applicable margin allocation for network and infrastructure support costs; and 2) incremental power and energy supply costs. Fixed Carrying Costs are determined as the Company's cost of capital to provide the requisite return on its investment as well as the costs for depreciation, property taxes, and property insurance.

not have to up-front any significant costs, versus if that customer required infrastructure expansion, in which case that customer would have to provide revenues in excess of the cost of the expansion, or provide an up-front payment to hold other customers harmless for the costs of its expansion.

Staff Expert/Witness: Sarah Kliethermes