BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of a Working Case to Evaluate Potential Mechanisms for Facilitating Installation of Electric Vehicle Charging Stations	))))	**File No. EW-2019-0229**

RESPONSE OF KANSAS CITY POWER & LIGHT COMPANY
AND KCP&L GREATER MISSOURI OPERATIONS COMPANY
TO COMMISSION ORDER INVITING COMMENTS

COME NOW Kansas City Power & Light Company and KCP&L Greater Missouri Operations Company (collectively, "KCP&L") and respectfully state as follows to the Missouri Public Service Commission ("Commission"):

I. BACKGROUND

1. On February 7, 2019, the Commission issued a Notice Opening File to open this docket to gather information for the purpose of evaluating potential mechanisms for facilitating the installation of electric vehicle ("EV") charging stations.

2. On February 14, 2019, the Commission issued its Order Opening a Working Case Regarding EV Charging Stations and Directing Staff to Schedule a Workshop Meeting for the purpose of evaluating potential mechanisms for facilitating the installation of EV charging stations.

3. On February 15, 2019, Staff for the Commission filed a *Notice of Workshop* in this docket, requesting that the first workshop take place on March 21, 2019 from 9 a.m. to 3 p.m. at the Commission.

4. On March 5, 2019, Staff filed a Request for Party Submissions ("Staff's Request") in this docket, requesting that parties file comments regarding which costs identified by Staff should be eligible for subsidization by utilities or should be eligible for special tariff/accounting/ratemaking treatment under a "make ready" approach.

5. On March 6, 2019, the Commission issued its *Order Inviting Workshop Participants to File Responses and Notice of Scheduled Workshop Meeting*. In its Order, the Commission formalized both Staff's deadline for party comments and requested workshop date.

6. On March 21, 2019, Staff conducted a workshop to gather insight from interested stakeholders.

7. On March 22, 2019, Staff filed a Request Additional Comments ("Staff's Request") in this docket, requesting that parties file additional comments on the topics of discussion.

8. On March 22, 2019, the Commission issued its *Order Inviting Comments.* In its Order, the Commission invited stakeholders to provide the information requested by Staff as set out in Staff's Request.

II. COMPANY COMMENTS ON STAFF'S WORKSHOP THEMES

9. This section provides KCP&L's comments regarding the Staff's identified themes from the workshop discussions.

A. Pilot Programs

10. Utilities need the flexibility to bring forth various EV charging programs of limited scale and duration to test technology, develop capabilities, assess customer adoption and grid impacts, and gain experience on how larger scale adoption or on-going programs might work. KCP&L/GMO believe that this can be accomplished as 'pilots' or tariffed programs with limited scope and duration. The Commission has always had the ability to approve tariffed pilot programs of limited scope and duration. Furthermore, Senate Bill 564 provides for Commission approval of small scale or pilot innovative technology projects if the project is designed to advance the utility's operational knowledge of deploying such technologies, including to gain operating efficiencies that

result in customer savings and benefits as the technology is scaled across the grid or network. [1] An EV charging program is an example of such an innovative technology project as EVs are expected to potentially impact the electric grid.

11. Utilities should craft pilot programs to focus on specific electric transportation use cases. Some examples use cases include: highway corridor, residential managed charging, workplace and multi-unit dwellings, mass transit, fleet operations, shared mobility, and other transportation electrification (i.e. forklift), as well as charge demand management technologies such as storage. For example, the provisioning of a group of DC Fast Charging ("DCFC") units near an airport would support shared mobility (ride-sourcing) drivers by enabling them to charge an EV while waiting for fares.

12. Additionally, utilities should be afforded the opportunity of flexibility to trial new technologies and use cases as they arise in the implementation of EV pilot programs in order to maximize educational value in meeting longer term utility, community and state goals.

B. <u>Data Gathering</u>

13. The importance of data collection is threefold: (1) to measure the results of a program; (2) to better understand customer charging patterns, which can be used to inform future programs and rates; and (3) to better understand the potential impact of EV charging on the electric grid. However, in order to maximize the understanding of these three areas, smart charging technology is necessary. Networked charging stations allow for usage and session data to be collected and controlled, or managed charging allows data to be collected to assess impacts to the grid. Examples of data that can be collected and evaluated include:

[1] RSMo Section 393.1610. 1

- Number of stations
  - by type
  - segmentation
  - rural, urban, suburban, highway corridor

- Usage by
  - segmentation
  - payment type – free vs fee
  - charging station type – Level 2 ("L2") versus DCFC

- Number of charging sessions
- Use cases and load shapes; charging profiles
- Vehicle registrations
- Customer behavior studies
- Revenue collected

14. Data collected can be used to develop programs outside public charging infrastructure such as those to support home charging, workplace charging, fleets, and mass transit.

C. <u>Customer Education</u>

15. One of the top barriers to EV adoption is range anxiety, and one of the major challenges in deploying EV infrastructure to eliminate range anxiety is that consumers lack knowledge of the benefits of EVs. Successful charging station programs to accelerate EV adoption requires complementary education and outreach to consumers by utilities. Education and outreach should be targeted to increase consumer awareness and demystify EV driving, as well as offer technical assistance to both commercial and residential customers.

16. As we move from the "early adopter" phase to the "early majority" phase, and then to the "mass majority" phase, education of what an EV is and how it operates, and how EV infrastructure works, is critical in each phase of this journey. This should be a shared responsibility, among government agencies, utilities, third-party providers and others because the benefits of education accrue to all in the ecosystem.

17. Electric companies are uniquely suited to help provide customers with information and education regarding EVs and the benefits that electric transportation can provide. Customers already view electric utilities as energy experts and expect them to provide information on energy-related technologies and solutions, including EVs. Electric utilities can provide advisory services and customer support to potential EV buyers and owners. Additionally, electric utilities can assist in creating a seamless customer experience for EV purchasers, including identifying EV-knowledgeable car dealers, providing assistance with charging station installations at residences, and offering information about public charging locations.

18. Ride and drive programs to get consumers to drive an EV for the first time and understand the different charging types is a good example of such outreach. Such retail showcases can be funded from a variety of resources including the auto original equipment manufacturers ("OEMs"), utilities, vendors, electric vehicle supply equipment ("EVSE") firms and others.

19. A customer education and experience strategy should include elements that target the different stages of the customer experience. In general, this strategy can be divided into three stages:

- Raising awareness among mass market customers who are not yet EV drivers.
- Providing education and assistance with the purchase decision
- Providing a seamless customer experience from purchase to EV ownership such that the EV ownership experience is positive. This will improve customer satisfaction and manage customer behavior to provide benefits for all customers.

D. Cost/Benefit Analysis

20. Numerous industry studies have identified the positive benefits transportation electrification provides to all utility customers by spreading the utility's fixed costs over a greater volume of usage creating rates that are lower than if there was less usage. Through KCP&L's participation in the Electric Power Research Institute ("EPRI") Electric Transportation research program, EPRI conducted an analysis the impact of EV adoption and valuation of KCP&L's Clean Charge Network ("CCN"). In 2016, EPRI completed a preliminary scoping analysis of the effects of transportation electrification in the Company's service territory. The second phase of the analysis focused on analyzing and valuing plug-in electric vehicle ("PEV") adoption in the context of KCP&L's CCN, which now consists of over 1,000 electric vehicle charging stations. While construction of the CCN has facilitated increased PEV adoption and helped to eliminate range anxiety, the majority of PEV charging will occur at home and workplace locations, not at the CCN stations.

21. EPRI's analysis shows that there is a net positive benefit to all utility customers from utility rate-based charging infrastructure.[2] EPRI found the average annual increase in revenue per PEV for charging under time of use ("TOU") managed home charging scenario would be the sum of home, workplace and public charging, or approximately $600 (2016$). This reflects a cost to drive of about 4.76 cents/mile. The equivalent gasoline costs would be 8.33 cents/mile assuming 30 miles per gallon ("MPG") and a price of $2.50 per gallon of gasoline.[3]

22. For a scenario with unmanaged home charging profile with greater system peak impacts, the average net benefit of a single PEV to KCP&L ratepayers is less but still positive at $331.42/year with a Ratepayer Impact Test ("RIM") test ratio of 2.17. If the home loads are managed

[2] *Kansas City Power and Light (KCP&L) Clean Charge Network: Phase 2 Analysis and Valuation of PEV Adoption.* EPRI, Palo Alto, CA: 2018. 3002012248, pg. ix.
[3] *Kansas City Power and Light (KCP&L) Clean Charge Network: Phase 2 Analysis and Valuation of PEV Adoption.* EPRI, Palo Alto, CA: 2018. 3002012248, pg. 6-5.

in such a way to avoid system peak conditions the net benefit to the Company's customers is $381.04/year with a RIM test ratio of 3.05. This difference reflects the capacity savings produced by shifting charging load away from the system peak to lower costs periods in the late evening or early morning and the reduced revenue from charging under a lower TOU retail rate.[4]

23. EPRI first tested the medium vehicle adoption scenario that which was developed to estimate the impact of the CCN on EV adoption for each KCP&L service areas. This analysis found that over the 10-year analysis period, the CCN investment has a ratepayer impact measure of 2.35 and produces over $20 million in present value net benefits for all customers. A 75% PEV adoption sensitivity analysis determined that if 75% of the predicted PEV adoption impact is realized, the CCN investment will still achieve a ratepayer impact measure of 1.74 and produce over $11 million in present value net benefits for all customers.[5] It is useful to note that from the start of the CCN construction in early 2015, the EV adoption rate in the Company service territory has trended with the EPRI medium adoption scenario.

E. <u>Adoption Rates/Needs of Customers at Present</u>

24. One of the primary barriers to EV adoption is the availability of EV charging infrastructure.[6] [7] [8] Visible public charging infrastructure to bolster consumer confidence in owning a plug-in electric vehicle is critical. To accelerate adoption of EVs, the customer experience is key. Utilities will need to keep customer considerations front and center by developing programs with

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[4] *Kansas City Power and Light (KCP&L) Clean Charge Network: Phase 2 Analysis and Valuation of PEV Adoption.* EPRI, Palo Alto, CA: 2018. 3002012248, pg. 6-7.

[5] *Kansas City Power and Light (KCP&L) Clean Charge Network: Phase 2 Analysis and Valuation of PEV Adoption.* EPRI, Palo Alto, CA: 2018. 3002012248, pg. ix.

[6] In a recent study Volvo found that 58% of respondents cited range anxiety as a barrier for purchasing an EV. https://www.thedrive.com/news/26637/americans-cite-range-anxiety-cost-as-largest-barriers-for-new-ev-purchases-study

[7] *National Plug-In Electric Vehicle Infrastructure Analysis*, National Renewable Energy Laboratory, *2017*. Available at: https://www.nrel.gov/docs/fy17osti/69031.pdf

[8] *Accelerating the Electric Vehicle Market-Potential Roles of Electric Utilities in the Northeast and Mid-Atlantic States*, M.J. Bradley & Associates, 2017. pg. 8. Available at: https://mjbradley.com/reports/accelerating-electric-vehicle-market-potential-roles-electric-utilities-northeast-and-mid

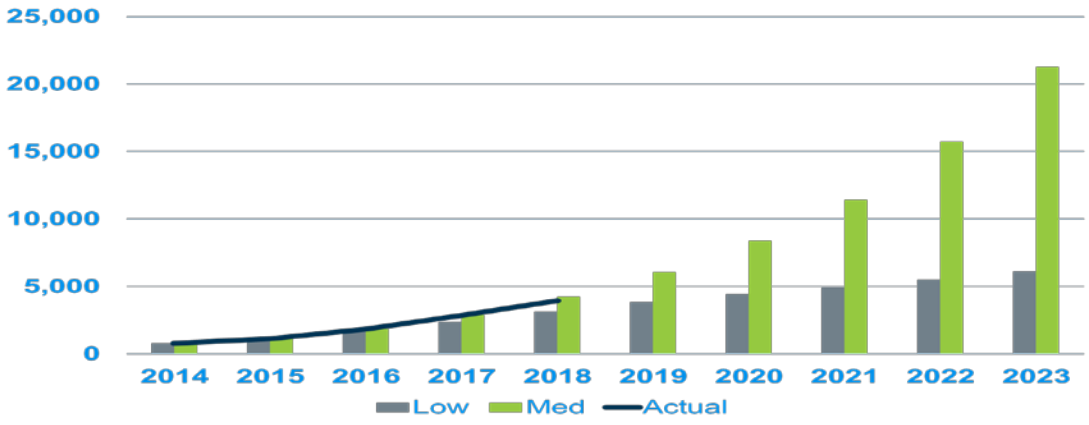
user-friendly features, flexibility and potentially incentives. A customer-centric approach might include opt-out and override features, messaging and alerts based on customer preferences, smart phone functionality for control and management, and rewards, rebates and other incentives to keep customers happy and engaged.

25. When KCP&L launched the Clean Charge Network in January 2015, there were only 850 registered EVs in the combined KCP&L/GMO service territory. KCP&L worked with EPRI to develop an adoption forecast for our service territory with three adoption scenarios developed:

- Low - no incentives beyond the Federal EV rebate
- Medium – with modest additional charging infrastructure (like CCN)
- High – included state mandates and aggressive incentives.

26. As of the December 2018, the number of registered EVs in the Company service territory has grown to 4,063. EV adoption is trending closely to EPRI's Medium adoption scenario, as shown in the graph below, illustrating the positive impact the CCN has had on EV adoption in the Company's service territory.

EPRI EV Adoption Projection – Low and Medium Scenarios



F. Cost Recovery/Rate Design/Incentives

1) Cost Recovery

27. Utilities need the flexibility to bring forth various programs to the Commission to stimulate the market in different ways. Such programs may involve the utility owning the public charging infrastructure, in other programs the utility may provide EV charging infrastructure as a product or service, and other programs may provide incentives or rebates to promote the installation of charging stations. Each of these program models has merit and a utility may elect to offer a variety of EV charging programs incorporating any of the models. Each proposal should be evaluated on a case-by-case basis, the Commission should establish and apply consistent cost recovery framework.

28. If the utility owns the public charging infrastructure, it should be allowed to earn a return on this investment and the costs should be recovered from all rate classes as all customers will benefit from the increased grid utilization. In KCP&L's most recent rate cases ER-2018-0145 and ER-2018-0146, as part of a comprehensive settlement approved by the Commission, KCP&L and parties agreed that a new customer class for electric vehicle charging stations would be established. The Signatories also agreed that no other customer class shall bear any costs related to this service either through base rates or through any rate adjustment mechanism such as a FAC, DSIM or RESRAM. These elements were part of a broad stipulation and agreement that settled many issues related to the rate cases. With respect to the purposes of this working case to evaluate potential mechanisms for facilitating future installation of electric vehicle charging stations, KCP&L believes that all customers benefit from increased grid utilization due to electric vehicle charging, and therefore all customers should pay for the utility programs that facilitate installation of electric vehicle charging stations. Electricity dispensed from utility owned public charging stations would be charged to the driver or host under our tariffed rate.

29. The EV market is evolving, and one example of flexibility needed by utilities to bring forth various programs is in private charging infrastructure, or infrastructure installed in the home or business for the express use of that resident or owner. Utilities should have the flexibility to propose this as a regulated or non-regulated product or service as the market evolves. If the utility provides private charging as a regulated product or service, it should be allowed to earn a return on these investments and the costs should be recovered from participants under a separate product tariffs. Private charging infrastructure could be provided for homes, fleets, transportation, etc. Rate structures for this service would be similar to our existing private and street light tariffs, providing a turn-key installation to be recovered through a monthly charge.

30. If the utility provides EV charging program incentives/rebates, these should be treated as a regulatory asset with a return, amortized over an appropriate time period, and recovered in rates from all rate classes as all customers will benefit from the improved grid utilization.

2) Rate Design

31. There are multiple aspects of rate design that must be considered for each category of EV charging behind residential and commercial billing meters, EV charging; rates charged EV drivers, and rates charged to separately metered EV charging service locations. Because EVs store energy and can be charged at time when they are not in use, well-designed rate structures will lead to EV charging that is aligned with grid needs, helps increase utilization of existing resources, and reduce costs for all ratepayers. While EV adoption is in its nascent stage of development it is important to identify price signals that need to be sent in the near-term and recognize that some may need to evolve over time as EV adoption increases and EV charging patterns evolve.

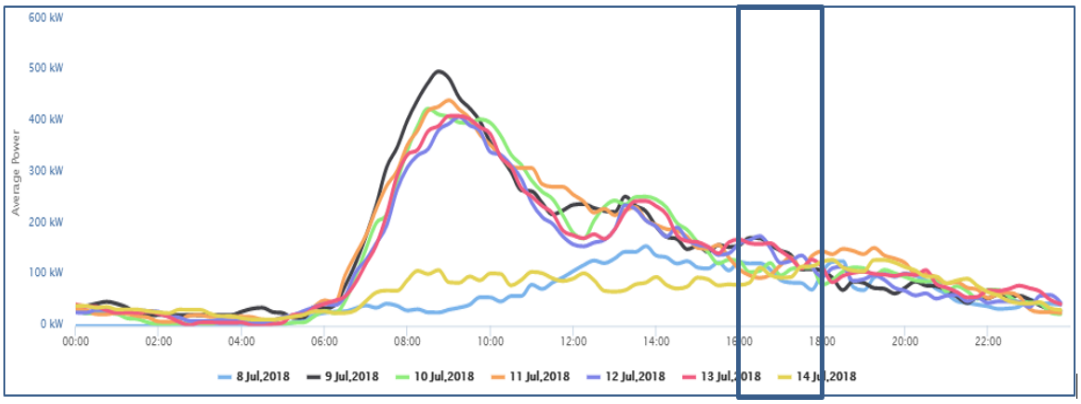
32. The EPRI analysis of transportation electrification for KCP&L determined that EV charging, if unmanaged, would have the greatest impact during the late afternoon (4-6 pm) system peak load hours. The analysis also shows that with managed home charging the peak capacity

needed is significantly less and the impact on the residential distribution grid will be modest and manageable.[9] In part to address the grid impact of home EV charging, KCP&L will launch a residential TOU rate in October 2019 that provides price incentives for EV drivers to charge their vehicles from midnight to 6 am.

33. KCP&L has studied EV driver patterns at the CCN charging stations and several significant charging patterns have emerged that should be taken into consideration in future EV charging program and rate designs.

- Currently, very little of the CCN charging occurs during the late afternoon peak load hours as depicted in the following figure.

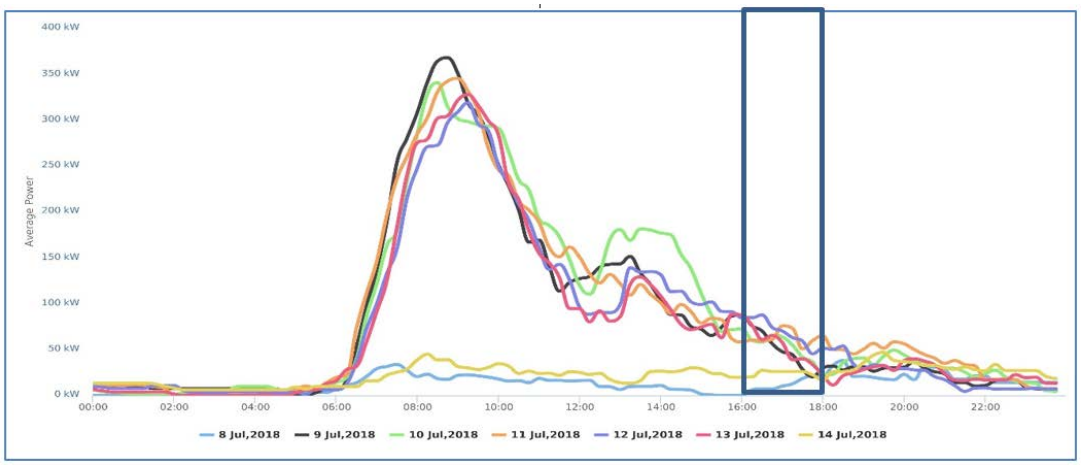
CCN Level 2 Charging Profile- 2018 System Peak Week



- Workplace charging is very complementary and can increase grid utilization with minimal negative impacts. Most workplace charging occurs in commercial areas where the distribution grid has fewer constraints and as the following figure illustrates the majority of the charging occurs in the early morning hours during periods of lighter commercial load or mid-day when solar generation will contribute a growing portion of the energy produced.

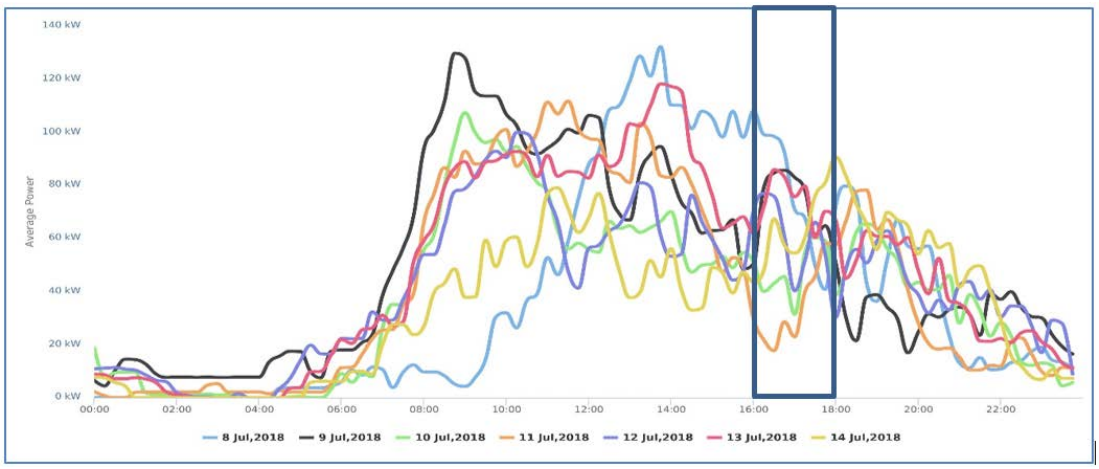
[9] *Kansas City Power and Light (KCP&L) Clean Charge Network: Phase 2 Analysis and Valuation of PEV Adoption.* EPRI, Palo Alto, CA: 2018. 3002012248.

CCN Workplace Charging – 2018 System Peak Week



- Retail/community charging is less complementary to the grid and has more opportunity for charging to occur during the late afternoon peak load hours.

CCN Retail/Public Venue Charging – 2018 System Peak Week



34. Some parties have suggested in prior KCP&L rate case dockets that the rates for EV charging at CCN charge stations should be TOU rates. The KCP&L analysis has concluded that at this juncture, it is best to maintain the flat CCN rate as it is easy for the customer to understand (similar to paying at the pump) and to manage the system peak impact through charge reduction in concert with KCP&L-initiated demand response events.

35. The final category concerns rate designs to separately metered EV charging service locations. KCP&L analyzed the composite system level load profile for all Level 2 and DCFC charging stations throughout the GMO and KCP&L service territories and presented the results of this analysis in KCP&L's 2018 rate case.[10] KCP&L believes that, at this juncture, the most appropriate electric rate to charge owners of separately metered EV charging service locations is the Small General Service rate, Schedule SGS. The structure of this tariff is well suited for service to both Level 2 or DCFC charging stations. For commercial service with demands less than 25 kW, the SGS rate is comprised of a Service Charge and an Energy Charge. For service with demands greater than 25 kW, the SGS rate is comprised of a Service Charge, an Energy Charge, and a local Facilities Charge for all kW in excess of 25 kW. As EV driver charging patterns change and transportation electrification evolves beyond today's light duty passenger vehicles, new rate designs for separately metered charging service locations may need to be implemented.

3) Incentives

36. KCP&L believes it would be appropriate for the Commission to consider utility rebates or other incentive programs as appropriate to stimulate the adoption of EV charging which would be in the long-term benefit of EV drivers, all customers and the Company. Incentives and/or rebates for EV charging infrastructure should be provided for under Commission approved programs designed to achieve transportation electrification in the most beneficial manner possible. As all EV charging incentive/rebate programs should be funded by all customer classes, it would be reasonable for the program incentive/rebates to be conditioned on a minimum set of technical requirements. The Company provides additional comments on incentives in our comments to Staff's proffered questions.

[10] Tim M. Rush Testimony ER-2018-0145, pg. 12-15.

G. Flexibility and Choice

37. There is not a one size fits all; specific EV infrastructure and EVSE models should not be mandated. Development of pilots and programs should be flexible and allow for recovery in a variety of methods. Utilities need the flexibility to bring forth various programs to the Commission to stimulate the market in different ways.

38. The EV market is evolving. It is important to design pilots and programs to be flexible to allow for future offerings. Additionally, flexible rate plans for the future should be an option as well – TOU, dynamic rates or other flexible rates. Bill credits, flat monthly fees, and other incentives could be considered for managing charging behavior as well.

39. Electric transportation customers will choose how and when they will charge. We need to provide the choice and flexibility to meet their needs in the most beneficial ways that provides benefits to all customers as well as to the electric grid. Such an approach contributes directly to the long-term viability of grid investments, helping to reduce the risk of stranded investment within the distribution network.

III. KCP&L COMMENTS ON STAFF'S PROFFERED WORKSHOP QUESTIONS

40. This section provides KCP&L's comments regarding the Staff's Questions proffered at the March 21, 2019 workshop.

A. What is the "Make Ready Model" - What should be included in the "Make Ready"?

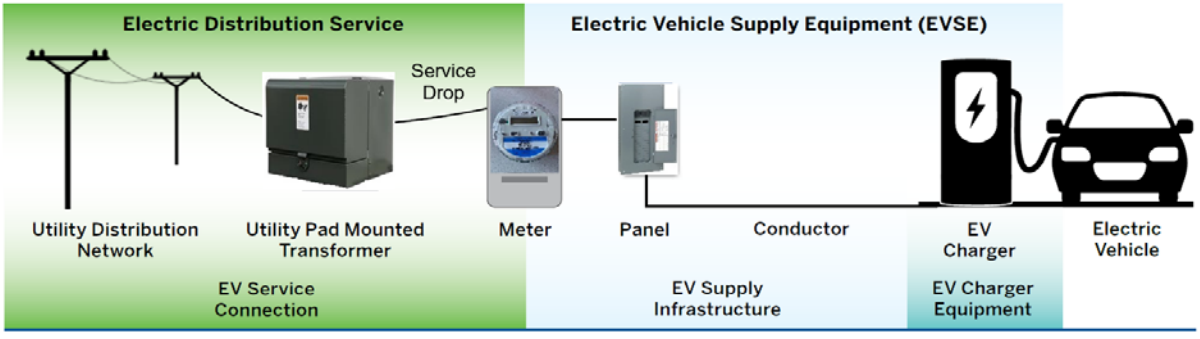
41. The "Make Ready Model" commonly refers to an EV charging incentive programs in which the electric utility provides electric "Make Ready" infrastructure free of charge to third party EV Service Providers. The EV Service Provider is typically required to install and operate their EV charging stations according to predefined program requirements that may include minimum functionality, interoperability, data access, and often include pricing and or load management

requirements. Under the "Make Ready Model" it is common that the utility provided infrastructure is rate based and costs are socialized across all customer classes.

42. However, use of the term "Make Ready" is unclear as it has been used to represent different groupings of electric infrastructure by parties during the workshop, in the various Missouri proceedings involving EV charging infrastructure and across the EV industry as a whole. When discussing the "Make Ready Model", there are two distinct grouping of electric facilities that are often referred to interchangeably as "Make Ready":

1) The electric facilities that represent the traditional utility line extension. This equipment is illustrated in the green shaded area of the following figure[11] and are labeled as Electric Distribution Service or EV Service Connection.

2) The electric infrastructure between the utility meter and the EV charging station. These assets are illustrated in the blue shaded area of the figure and are labeled EV Supply Infrastructure. To further complicate the concept, often "Make Ready" programs also include a rebate or incentive payment to cover a portion of the EV charging station itself. In any consideration of any program or incentive under a "Make Ready Model," it is important to have a common understanding of which facility infrastructure groups are being considered; the EV Service Connection and/or the EV Supply Infrastructure.



[11] Farnsworth, D., Shipley, J., Lazar, J., and Seidmand, N. (2019, January). *Beneficial electrification of transportation*, VT: Regulatory Assistance Project. Adapted from Figure 4 p 22.

1) Line Extension for EV Charging Station

43. Third party providers of EV charging services identify the utility 'sales for resale' restrictions and the high cost of the utility line extensions to serve new EV charging installations as two impediments to potential third-party service providers.

44. In KCP&L's 2016 rate case, ER-2016-0285, the Commission ordered KCP&L to modify its tariffs to remove the 'sales for resale' restriction for EV charging. KCP&L filed compliance tariffs adding Section 3.18 to the General Rules and Regulations Applying to Electric Service which reads:

> *3.18 ELECTRIC VEHICLE CHARGING STATIONS: The sale or furnishing of electric vehicle charging services by a customer of the Company to a third party does not constitute the resale of electricity.*

45. Each of the Missouri investor owned utilities have line extension policies and tariffs that seek to establish fair and equitable treatment of any customer requesting service. The line extension policies serve to identify the portion of line extension costs that should typically be borne by the requesting customer by considering the value of that investment to KCP&L and other customers. However, unlike traditional electric service locations, where all kWh consumed by loads connected at a premise are recorded by the premise meters, EVs are mobile and only a fraction of the EVs kWh consumption will be recorded at any one EV Charging Service Provider location. To this end, a line extension allowance should not be based solely on the revenues generated to the EV Charging Service Provider's location, but must take into consideration the additional revenues generated at other charging locations; home, workplace, etc. KCP&L believes a line extension allowance for EV Charging Service Providers that accounts for these additional benefits to all customers is one method that can be used to stimulate third party EV Charging Service Provider market. However, these incentives should be structured to not promote excessive utility infrastructure investment.

2) Option to waive line extension charges for separately metered EV charging stations that meet specific public policy considerations.

46. In KCP&L's most recent rate cases, ER-2018-0145/0146, the Commission approved stipulation included provisions that KCP&L establish and offer a standard construction allowance within the line extension process for service to separately metered charging service locations. KCP&L is in the process of implementing the standard construction allowance to be applied to line extensions for service to separately metered EV charging service locations. This construction allowance would be applied to help offset the cost of utility line equipment illustrated in the green shaded area of the previous figure and are labeled as the EV Service Connection. Consistent with the expectations developed during the rate case, KCP&L developed the following principles to guide the design of this standard construction allowance.

- The allowance should be fair and equitable, providing third-party EV Charging Service Providers an allowance comparable to the CCN EV service connection costs already included in rate base.
- The allowance should be applicable only to the EV charging service and should not be so significant as to promote excessive utility line extensions.
- The standard allowance should be aligned with the allowance that would be provided based on the revenues from an estimated level of utilization that may reasonably expected to occur.
- The standard line extension allowance should be applicable to any customer requesting service for separately metered EV charging service locations with no additional restrictions being placed on the applicant's EV charging service operation.

47. Developing the standard construction allowance for the EV service connection to separately metered EV charging service locations in this manner establishes an allowance that can be uniformly applied to any new third-party EV Charging Service Provider locations while providing a level of cost control for ratepayers. KCP&L acknowledges that there are some unique situations, like rural corridor locations, where line extension costs may be significant and a different approach may be appropriate. In these situations, it may be appropriate to make other considerations in response to policy concerns or other strategic needs.

3) What public policy considerations must be met for an EV charging station to receive an incentive?

48. KCP&L believes it would be appropriate for the Commission to consider utility rebates or other incentive programs as appropriate to stimulate the adoption of EV charging which would be in the long-term benefit of EV drivers, all customers and the Company. For example, an EV charging incentive/rebate could also apply to the EVSE illustrated in the blue shaded area of the previous figure and include such items as the EV Charger Equipment (Charging Station) and EV Supply Infrastructure.

49. EVSE incentives/rebates should be provided for under Commission approved programs designed to achieve transportation electrification in the most beneficial manner possible and consider the degree to which all consumers have equal access to electricity as a transportation fuel and the ability to share in the benefits regardless of consumers' specific economic and geographic circumstances.[12] The Regulatory Assistance Project ("RAP") asserts that for transportation electrification to be beneficial, or in the public interest, it must meet one or more of the following conditions without adversely affecting the other two:

[12] Farnsworth, D., Shipley, J., Lazar, J., and Seidman, N. (2019, January). *Beneficial electrification of transportation*, VT: Regulatory Assistance Project. p 53.

- Saves consumers money over the long run;
- Enables better grid management; and
- Reduces negative environmental impacts.[13]

50. Numerous utilities and regulatory agencies across the United States are testing various EVSE incentives/rebate programs which commonly follow one of the two following models:

- Utility constructs owns and maintains the EV Supply Infrastructure between the utility meter and the charging station.
- Utility provide an incentive/rebate to the EV charging service provider for a portion of the EV Supply Infrastructure and/or Charging Station.

51. In recognition of the fact that EV charging incentives/rebates programs stimulate EV adoption generating additional kWh sales revenues and grid benefits that will flow to all customers, most Commissions are allowing the utilities to recover their infrastructure and program costs from all customers.

B. <u>Ownership Models</u>

52. It is KCP&L's position that, regardless of the model, it will require investment by all parties (individuals, private companies, third-party service providers, and utilities) to deploy the charging infrastructure that will be required to support meaningful EV charging and transportation electrification. Additionally, the three incentive models referenced by the Commission for comment are not mutually exclusive. Utilities need the flexibility to bring forth various programs to the Commission to stimulate the market in different ways. There is no need for the Commission to pick one 'model' for Missouri.

[13] Farnsworth, D., Shipley, J., Lazar, J., and Seidman, N. (2019, January). *Beneficial electrification of transportation*, VT: Regulatory Assistance Project. p 53.

53. If the development of EV charging infrastructure is restricted to the third-party and host site ownership models, the EV charging will not evolve at the pace needed to support EV adoption (as California has shown). Therefore, a combination of ownership models is needed to ensure resources are deployed in a complementary and additive manner, enabling EV adoption to grow with maximum benefits for customers, the grid and the environment.

1) Host Site Ownership

54. Under the Host Site Ownership model, the host site company owns and operates the EV charger and either provides the charging services free or for a fee to the EV driver. The Host Site ownership model is very important to some hosts as they can tailor the charging services they provide to better meet their business requirements and the needs of their employees, tenants, and customers. Host Site ownership allows the host company to operate the EV charging stations for their business needs without requirements that may be placed on them by utility programs or requirements to operate for utility grid benefits.

55. Early Department of Energy ("DOE") sponsored EV charging studies have shown that over 80 percent of all EV charging occurs at home, typically overnight.[14] The remaining 20 percent occurs away from home during trips throughout the day. However, this charging profile reflects the early-adopter population which largely consists of single-family homeowners with EVs with limited battery range and limited access to convenient charging outside the home. To grow the PEV market, convenient charging will likely need to be available at a wide range of public locations, workplaces and multi-unit residential dwellings where a substantial portion of potential urban PEV drivers live.

[14] *Plug-in Electric Vehicle and Infrastructure Analysis*, Idaho National Labs, 2015, pg. 3-5; Accessed at: https://inldigitallibrary.inl.gov/sites/sti/sti/6799570.pdf

56. A few Host Site Owned charging stations have been installed at retail stores in the Company's service territory. To date these have been installed by national chains that recognize a positive marketing benefit of provide this customer service.

57. Workplace charging is becoming available at a small but growing number of companies that offer it as a way of attracting and retaining employees and as a way of distinguishing themselves as green companies. Cost of ownership and operation is a significant barrier to retail and workplace charging. The CCN experience shows that workplace charging is grid friendly and provides an important opportunity to encourage the adoption of EVs by extending the daily electric commute range of EVs and allow households that lack access to residential charging the opportunity to commute with an EV.

58. KCP&L's CCN experience also shows that while host companies, both retail and workplace, were reluctant to make the investment in charging stations themselves, many have been willing to pay the monthly charging fees as illustrated by the fact that charging fees at approximaty30 percent of the CCN charging stations are paid by the host.

59. Host Site Ownership of EV charging stations at multi-family dwelling units is virtually nonexistent in the Company's service territory. Multifamily dwelling units face many challenges in installing PEV charging equipment. Some are similar to workplace locations, but others are unique to multi-family dwellings. Multi-family dwelling owners lack a financial incentive to install EV charging stations unless they can charge a premium for them or otherwise be compensated. EV charging at multi-family dwelling units, like workplace charging, will be essential EV charging infrastructure to grow EV adoption and the electric utilities have a critical role in making EV charging assessable to these EV drivers. EV charging at multi-family dwelling units, like home charging, can be managed for grid benefits with TOU rates.

2) Third Party Ownership

60. Under the third-party ownership model, a third party owns and operates the EV charger and provide the charging services free or for a fee to the EV driver. Third party ownership of charging have been slow to emerge due to financial hurdles associated with low EV market penetration. Generally, companies that own and operate public charging stations have five sources from which they can seek to cover their costs: government grants and incentives, utility rebates or incentives, vehicle manufacturer subsidies, charging-station hosts, and EV drivers.

61. Most third-party EV charging service providers (TESLA, ChargeAmerica, etc.) have been primarily focused on providing highway corridor, FCDC charging for long-distance travel, and have relied heavily be funding by the government and automakers who want to eliminate this barrier to EV adoption.

3) Investor Owned Utility Ownership With/Without Subsidies

62. Under the Utility Ownership Model, the utility owns and operates the EV charger and all supporting infrastructure and bills the EV driver (or host) under a tariffed rate. Utility ownership and operation of EVSE provides the greatest opportunity to achieve maximum grid utilization and benefits as the utility can directly utilize EV charge management to shift charging to when solar and wind production is high or curtailing charging during demand response events when market prices are high or the grid is near capacity. Commissions in a variety of jurisdictions have recognized the important role the Utility Ownership Model can play in promoting EV adoption, and recent orders have approved such programs that incorporate this model.

63. As the Commission noted, this is similar to the CCN model adopted per the stipulation approved by the Commission in the KCP&L's last rate case. As mentioned in Paragraph 30, the current regulatory treatment of the CCN established through the previous rate case proceedings provide for many elements of a Utility Ownership Model to promote EV charging services, but it is

lacking several essential elements and considerations that would encourage future utilization of this model. Including all utility owned EVSE in rate base is essential as it provides the utility recovery for its investment. Creating a separate customer class for EVSE and allocation of joint and common costs to this class provides for tracking and transparency of the costs associated with EV charging, but it does not account for the additional revenue and other benefits that flow to other customer classes. Further placing the restriction that none of the EVSE class costs can be borne by any other customer class creates a significant inequity as many of the benefits derived from EV charging actually flow to the other customer classes. Additionally, to develop a rate that will cover the EVSE class costs solely from the EVSE class sales creates a 'pump' price high enough that it may act as a deterrent to EV adoption. As the Commission found in the Ameren docket, EV charging provides benefit to all customers.

64. Another aspect of the Utility Ownership Model is that it provides a mechanism for the utility to offer its customers EV charging products and services as their energy service provider. Many customers would like to provide EV charging for themselves, their customers or their employees, but may be reluctant to make the initial investment or may not want the responsibility of maintaining their own EVSE infrastructure. Under the Utility Ownership Model, the utility could offer customers tariffed EV charging products and services similar to existing private lighting and municipal street light tariffs. Under these EV charging products, the utility would make the investment in and operate the EV infrastructure on a monthly fee basis.

C. Potential Policies for EV Charging Infrastructure Implementation That Provides the Most Benefit to the Grid

65. Given this need for charging infrastructure, the Commission should support policies which promote investment by all parties to deploy the charging infrastructure and promote transportation electrification. The utility has an important role to play in addressing the current lack

of charging infrastructure, which has been identified as one of the primary barriers to greater EV adoption. The utility is also well positioned to address the needs in its service territory, including those in a variety of target segments and ownership models, as well as optimizing the location of planned deployments. The utility can drive charging deployments to supporting interoperability and open communication standards to create a positive customer experience end use programs and management of the grid. Utility companies can also help expand electric transportation access to underserved communities. Since deployed, the KCP&L CCN has been effective in accomplishing these goals and spurring growth in the EV adoption rate in the Kansas City area.

66. The financial benefit to the utility and to all ratepayers from EV charging are not merely from the additional electricity sales resulting from EV charging, but also from more efficient utilization of the grid. All ratepayers will ultimately receive benefits from spreading the utility's fixed costs over a greater volume of usage creating rates that are lower than if there was less usage. The key to more efficient grid utilization is to manage the increased usage from EV charging within the existing grid capacity and minimize the need for grid expansion. Because EVs store energy for later use, they have flexibility in when they draw their charging energy. As EV driving range increases, the flexibility to manage when EVs charge for their daily driving needs will also increase.

67. EV charging demand can be managed through rates, such as TOU, as demand response ("DR") resources, and through active charge management, or a combination of all three. Home EV charging will be highly coincident with daily residential demand peaks but can be shifted with TOU rates and further active charge management can provide additional grid benefits. Increased workplace EV charging can be more easily accommodated with fewer grid impacts as it typically occurs on segments of the distribution grid with greater capacity. A majority of workplace charging will occur during the lighter loaded morning hours or mid-day when renewable solar generation is at its greatest levels.

68. While rates and DR programs can provide both customer and grid benefits, active charge management provides the greatest opportunity to minimize grid impacts and maximize grid utilization. The utility is in the unique position to manage EV charging to maximize grid benefits as it has unique insight and knowledge of grid conditions.

1) What policies will promote deployment of EV charging stations?

69. The benefits of EVs only will be realized if the transition continues and if widespread adoption of EVs occurs. Utility companies can play a critical role in accelerating adoption, but the right policies and regulations need to be in place. Given the customer, environmental, and energy grid benefits that EVs provide and the critical role that electric companies play in advancing EVs, policies and regulations are needed that:

- Allow utility companies to make investments that support EVs in their communities, including deploying, owning, and operating charging infrastructure, and developing strategies that allow utility companies to manage charging effectively to benefit the customer, the energy grid, and the environment.
- Recognize the critical role of utility companies in educating customers about the benefits of EVs.
- Allow utility companies, where appropriate, to recover costs and earn a reasonable return on EV-related investments, similar to any investment that provides benefits to customers.

70. Given the importance of charging infrastructure to the development of the EV market, policies are needed that:

- Make charging infrastructure widely available to meet customer needs, including public and private charging for EVs and fleets.
- Support a positive and consistent experience for EV drivers, charging station owners,

and network operators. This means developing an interoperable and open-access system with standards that work regardless of the vehicle type, the equipment type, or the ownership/operation model.

71. Specifically, for Missouri, policies are needed that:

- Allow the cost of utility owned public EV charging infrastructure to be recovered from all rate classes as all customers will benefit from the increased grid utilization.
- Promotional practices to allow promotion of EV adoption and provision of programs that can provide incentives and rebates for EV charging infrastructure.
- Establish a consistent regulatory treatment for tariffed programs EV charging infrastructure incentives and rebates to allow recovery of program incentives as a regulatory asset.

2) What type of technology/charging equipment needs to be utilized?

72. KCP&L believes that care must be taken to not become too prescriptive in the identification charging technologies and equipment as the technology and industry continues to evolve. At stated earlier, KCP&L believes that few, if any, restrictions beyond standard requirements for service should be placed on the line extension allowance for customers requesting separately metered EV charging service.

73. However, as EV charging incentive/rebate programs for make-ready infrastructure or charging stations should be funded by all customers, these program incentive/rebates are often conditioned on any number of criteria that would ensure transportation is electrified in the most beneficial manner possible. Again, care must be taken in determining the program requirements to specifying minimum requirements for functionality, interoperability and safety, but not be picking top-down 'winning' technologies or vendors. Targeted programs for home, workplace, multi-family,

public, ride-share, highway corridor, and/or transit charging programs may have differing criteria which could include:

- All EV equipment must be Underwriters Laboratories ("UL") Certified
- Energy Star certified EV charging stations (only applies to Level 2 chargers)
- Industry standard EV connectors (Society of Automotive Engineers ("SAE") J1772, CHAdeMO and SAE Combo1)
- Industry standard EV communication protocols (Combined Charging System ("CCS") for SAE Combo1 DCFC)
- Wi-Fi or other network connected communications and support for one or more of the emerging EV charge network protocols (discussed later).
- Support for Open Charge Point Interface ("OCPI") protocol and EV driver network roaming.
- TOU rate or DR program participation
- Level 2 EV charger (over Level 1) for efficiency, load shift, and active charge management
- Smart or active charge management capabilities

74. The transportation electrification industry is in its early stages of development and continues to evolve. Currently the focus is on light duty EV charging requirements at home, workplace, and along highway corridors. Other transportation charging requirements continue and new opportunities will arise. Transportation electrification for public transit, commercial delivery, and shared mobility solutions continue to evolve and may require investments in infrastructure and programs that cannot be identified today.

3) What is the interoperability of the EV charging station?

75. Interoperability of EV charging stations is a complex subject and involves several aspects of mechanical, electrical, and communications interoperability. All EVs support Level 1 and Level 2 charging through a common connector. Additionally, most Battery Electric Vehicles ("BEV") provide DCFC charging through industry standard and non-standard connectors. The basic function of an EV charging system is to immediately charge at plug-in at the highest available power level that the battery prefers. For many applications, this default behavior is sufficient and ensures that the vehicle is fully charged in the shortest possible time frame. While this represents the most convenient situation for EV drivers, there may be other factors that make this behavior undesirable. Smart charging focuses on altering this default behavior based on information that is likely to be external to the vehicle.[15]

76. While there is a lot of publicity about the development of EV charging stations with increasing charge levels, it is worth noting that all EV charging is managed at the vehicle level. The vehicle has an on-board battery management system ("BMS") that oversees charging and discharging of the vehicle's battery. The BMS is focused on preserving the health of the battery and ensuring safe charging and discharging. Based on this, while an external system can request that a vehicle charge, it cannot force a vehicle to accept charge. Similarly, while an external system can request that a vehicle-to-grid capable vehicle discharge to the grid, it cannot force the vehicle to do so.[16] The following discussion provides additional insight into multiple aspects of EV charging station interoperability.

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[15] *Smart Charging 101: The Basics of Managed Electric Vehicle Charging.* EPRI, Palo Alto, CA: 2018. 3002014832. Pg. 1-1.

[16] *Smart Charging 101: The Basics of Managed Electric Vehicle Charging.* EPRI, Palo Alto, CA: 2018. 3002014832. Pg. 1-1.

77. EV Connector – The connector is the plug that connects the charging station to the EV and delivers electricity to the battery. It also facilitates communication between the car and the charging station so the charging process is automatic once the car is plugged in. All EVs, except Tesla, use a standard SAE J1772 connector for Level 1 and Level 2 charging. There are two industry standard connectors for DCFC; CHAdeMO adopted by Asian automakers, and SAE Combo adopted by European and American automakers. Tesla uses its own proprietary connector.

	SAE J1772 standard connector used with charging station.	Level 1 Level 2	3.3kW – 19.2kW
	SAE Combo connector used with American and European cars that are fast-charging capable.	DC Fast Charge	30kW – 100kW
	CHAdeMO connector used with Asian cars that are fast-charging capable.	DC Fast Charge	30kW – 50kW
	Tesla connector used only with Tesla Model S and Model X.	Level 2	10kW – 20kW
		Supercharger	Up to 145kW

78. The majority of European and American automakers have adopted the Combined Charging System ("CCS") standard for Level 2 and DCFC. The CCS standard incorporates the connector, charging communication, charging stations, the electric vehicle and various functions for the charging process as e.g. load balancing and charge authorization.[17] Asian manufacturers and Tesla do not follow this standard.

[17] https://en.wikipedia.org/wiki/Combined_Charging_System

79. Charge Network Protocols – There is one legacy and two emerging standard protocols for EV charging networks that provide the communication between an EV charging station and a EV Charge Network Service Provider's network control system: 1) The Open Charge Point Protocol ("OCPP") v1.x developed by the Open Charge Alliance ("OCA") and is the most commonly supported standard protocol by EV charge station suppliers today 2) OCPP v2.0 was published by the OCA in 2018 and due to patent disputes, this version will not be backwardly compatible with the OCPPv1.x. OCA now plans to move the OCPPv2 protocol into an IEC Standard (63110). 3) The Institute of Electrical and Electronic Engineers ("IEEE") also has a standards body is working on a charge station management protocol under IEEE P2690. Today charging station interoperability is implemented with OCCP v1.x and it is not clear how the industry will deal with the two, newer competing standards as they continue to evolve.

80. Smart Charge Management Protocols – Currently there is no generally accepted industry standard protocol established for smart charge communications between the utility or the site owner's building management system with the EV Charge Network Service Provider's network control system or with the EV charging station directly. Depending on the smart charging communication requirements, several protocols have been implemented including: the OCA Open Smart Charge Protocol ("OSCP"), Smart Energy Profile 2.0 (IEEE 2030.5), Open Automated Demand Response ("OpenADR") 2.0b, and proprietary vendor protocols. Only IEEE 2030.5 and OpenADR2.0b define end to end communications between the utility or aggregator and a charging station or the PEV itself. It should also be noted that the California Public Utility Commission ("CPUC") Smart Inverter Working Group selected IEEE 2030.5 as the recommended standard protocol for communications between the utilities and manufacturer's grid tied smart inverters for managing distributed energy resources. The reasoning being that IEEE 2030.5 has established certifiable DER functional feature sets that can provide direct integration between utilities and DER

inverter systems (including PEVs). Also, these protocols are easily leveraged through the use of the existing PEV communications data transfer technologies.[18]

81. EV Driver Charge Network Roaming – Similar to credit cards, an EV driver should be able use their charge network card at any charging network and the transaction would be billed to their personal account. There have been at least two failed attempts to establish a clearinghouse that would allow for consumer roaming across charging networks. More recently, the Open Charge Point Interface ("OCPI") protocol has emerged to support EV driver roaming between EV networks. While no clearinghouse has yet emerged for North America, EV driver roaming is being facilitated by through vendor to vendor collaborations using the OCPI protocol. Currently, EV drivers that are members of the CCN and ChargePoint charge networks have the greatest roaming flexibility through ChargePoint's roaming agreements with Flo, Greenlots, and EVBox. [19] [20] [21]

4) Energy Storage with EV charging stations for mitigation of demand charges.

82. Battery energy storage is only one of several technologies that a provider of EV charging services can use to manage energy demand and the associated demand charges. While the cost of battery storage continues to decline, it is still an emerging technology and a considerable cost element. Compared to the modest level of demand related charges under most Missouri commercial rates, some jurisdictions have significantly higher demand charges which would make energy storage more financially viable as a demand mitigation solution. With Level 2 charging, the demand impact can be effectively managed through active charge management at the EV electric panel level or in conjunction with a building management system. With DCFC charging, most light duty EVs

[18] *Open Vehicle-Grid Integration Platform: Systems Approach to Standards and Interoperability*. EPRI, Palo Alto, CA: 2016. 3002008866. pg. 4-1.
[19] https://electrek.co/2018/10/16/electric-car-drivers-roam-us-canada-chargepoint-flo-charging-networks/
[20] https://ocpi-protocol.org/global-partnership-between-evbox-and-chargepoint/
[21] https://ocpi-protocol.org/ocpi-roaming-agreement-between-greenlots-and-chargepoint/

commonly charge at a 50kW rate and the demand impacts can still be mitigated through charge balancing. Which technology the charging service providers uses to manage demand should be left to the charging service provider and should not be universally required or excluded from a utility program or rebate/incentive.

83. Battery energy storage has the greatest potential to support EV charging at highway corridor charging locations in rural areas with weak distribution systems and as higher capacity DCFC charging becomes more common. Energy storage may also become a significant technology for managing charging demand as commercial heavy duty and municipal transportation electrification continues to evolve. Battery storage will be the most efficient if it is coupled with the EV charging station at the DC level, but this level of storage integration is still in the experimental stage. EPRI is also researching the concept of "DC as a Service" where the utility distribution transformer would be replaced with power electronics unit that would provide DC service directly from the primary (15 kV) distribution system.

5) What are the anticipated system impacts of EV charging on-peak on the grid?

84. Through KCP&L's participation in the EPRI Electric Transportation research program, EPRI conducted an analysis the impact of EV adoption and valuation of the CCN. The EPRI analysis of generation and transmission level system impacts suggests that the KCP&L bulk power system can support a significant level of PEV adoption and that EV charging, if unmanaged, would have the greatest impact during the late afternoon system peak load hours. The analysis shows that with managed home charging, the peak capacity needed is significantly less than what might be needed in the case of unmanaged charging.[22] Subsequent analysis by EPRI and the Company, estimate that the system level impact of unmanaged EV charging will be 1.0-1.25 kW per EV. However, if charging is

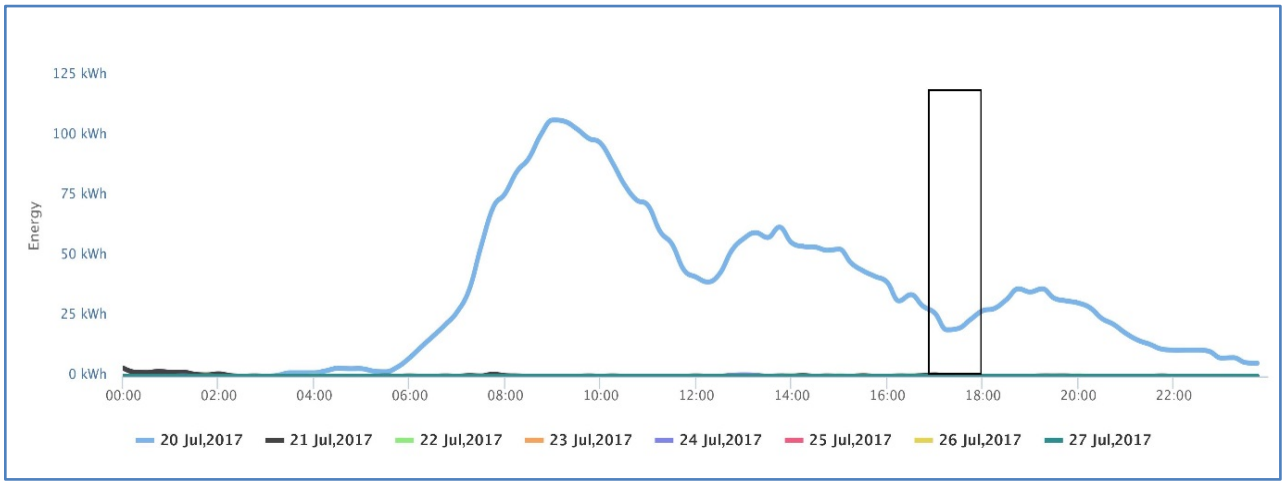
[22] *Kansas City Power and Light (KCP&L) Clean Charge Network: Phase 2 Analysis and Valuation of PEV Adoption.* EPRI, Palo Alto, CA: 2018. 3002012248, pg. VIII.

aggressively managed with TOU rates for home charging and demand response is used to manage workplace and public charging this system level impact could be as low as 0.25 kW per EV.

6) What are the potential impacts on the local distribution system?

85. The EPRI analysis of EV adoption impacts found that KCP&L's commercial distribution grid has sufficient capacity available to support a large number of EVs. In this analysis of public, retail and workplace charging patterns, EPRI found some small potential contribution to system peak during the 4:00 - 6:00 pm hours as illustrated in the following figure. EPRI does not expect any significant loading issues on the Company's commercial distribution feeders resulting from workplace, retail, or public charging in the near future.[23]

CCN Level 2 - 2017 System Peak Day Composite Load Profile



86. The EPRI study also provided an initial assessment of the impact to the local neighborhood grid due to home charging. Analysis of the KCP&L automated metering infrastructure ("AMI") data found residential customers have on average a 15-minute peak demand of approximately 8 kVA. Considering that most new BEVs will charge at 6.6 kVA or higher, adding a single BEV in a home could have significant impacts on individual customer peak demand. The

[23] *Kansas City Power and Light (KCP&L) Clean Charge Network: Phase 2 Analysis and Valuation of PEV Adoption.* EPRI, Palo Alto, CA: 2018. 3002012248, pg. VIII.

study showed that if EVs are randomly distributed approximately 0.08% of residential transformers could be overloaded in 2025, but that this could be reduced by 90% with TOU rates. "Overall, these results indicate that, in the near term, the impacts of EV adoption on the residential distribution grid will be modest and manageable.[24]"

87. While the EPRI analysis found that a significant number of PEVs can be supported on the KCP&L system with minimal system peak and distribution grid impacts for the foreseeable future, it also suggests that further study is warranted to better understand the charging behavior of KCP&L customers to better predict how and to what level EV charging can be actively managed. A better understanding of how EV charging changes over time would improve the utility's ability to predict system impacts, particularly as EV adoption is expected to grow over time.[25]

7) Ratemaking Policies – What will facilitate the most benefit for the grid?

88. KCP&L provided comments regarding EV rate design for EV charging earlier in Section II F 2). With EV adoption is in its nascent stage of adoption it is important to approach rate design cautiously to not create a deterrent to EV adoption. It will be important to identify price signals that need to be sent in the near-term and recognize that some may need to evolve over time as EV adoption increases and EV charging patterns evolve.

89. As discussed earlier, EPRI identified home EV charging as having the most significant impact on the grid due to its coincidence with the Company's daily late afternoon peak usage periods. In part to address this potential grid impact and to develop grid-friendly home charging behaviors early on, KCP&L will be offering a whole house TOU rate provides price

[24] *Kansas City Power and Light (KCP&L) Clean Charge Network: Phase 2 Analysis and Valuation of PEV Adoption.* EPRI, Palo Alto, CA: 2018. 3002012248, pg. 5-22

[25] *Kansas City Power and Light (KCP&L) Clean Charge Network: Phase 2 Analysis and Valuation of PEV Adoption.* EPRI, Palo Alto, CA: 2018. 3002012248, pg. IX.

incentives for EV drivers to not charge on-peak (4-8 pm) and to charge their vehicles from Midnight to 6 am.

90. The KCP&L analysis also shows that workplace charging improves grid utilization with minimal contribution to system capacity requirements. Therefore, at this juncture, KCP&L believes it is best to maintain the flat CCN rate and to manage the system peak impact through charge reduction in concert with KCP&L-initiated demand response events.

91. With regards to electric rates that apply to separately metered EV charging service locations, KCP&L's analysis presented in our last rate cases, ER-2018-0145/0146, concluded that the current commercial rates were appropriate.[26] Further as cited earlier, a large EV charging project, power balance and demand response may be better strategies for managing demands at these locations.

92. As we discussed previously in Section II, the utility has an important role to play in addressing the current lack of charging infrastructure and is well positioned to address this need while managing the increased usage from EV charging within the existing grid capacity and minimize the need for grid expansion. The financial benefit to the utility and to all ratepayers from EV charging are not merely from the additional electricity sales resulting from EV charging, but also from more efficient utilization of the grid. All ratepayers will ultimately receive benefits from spreading the utility's fixed costs over a greater volume of usage creating rates that are lower than if there was less usage.

93. The current regulatory treatment of the CCN established through the previous rate case proceedings provides for many elements of a Utility Ownership Model to promote EV charging services, but it is lacking several essential elements and considerations. Placing the restriction that

[26] Tim M. Rush Testimony ER-2018-0145, pg. 12-15.

none of the EVSE class costs can be born be any other customer class creates a significant inequity as many of the benefits derived from EV charging actually flow to the other customer classes. As the EPRI study shows and the Commission found in the Ameren docket that EV charging provides benefit to all customers, the restrictions of EVSE class costs associated with CCN model may need to be reconsidered in the future.

IV. KCP&L COMMENTS ON NEED FOR RULEMAKING

94. This section provides KCP&L's comments regarding the Staff's question regarding the need for a rulemaking to address EV charging and the infrastructure to support it.

Stakeholders may also submit exemplar rules from other jurisdictions.

95. KCP&L believes that rulemaking to address EV charging and EV charging infrastructure would be premature at this time. The EV market is still evolving and utilities and commissions across the nation are exploring various ownership and incentive models to stimulate the deployment EV charging stations. In KCP&L's opinion, it will require investment by all parties (individuals, private companies, third-party service providers, and utilities) to deploy the charging infrastructure that will be required to support meaningful EV charging and transportation electrification.

96. Instead of formal rulemaking the Commission should consider development of an EV charging policy that would provide guidelines for the regulated utilities to use when developing programs for EV charging infrastructure. An EV policy statement developed by the Commission could provide guidance regarding:

- Support for transportation electrification in Missouri
- Utility pursuit of various ownership and incentive models for EV charging infrastructure
- Line Extension Allowance and Make-Ready programs

- Recovery of utility investments are appropriate, just and reasonable

CONCLUSION

97. KCP&L appreciates the opportunity provide comments and participate in continuing dialog to evaluate potential mechanisms for facilitating the installation of EV charging stations. Transportation electrification represents a growing area of focus for the electric utility industry as it provides significant benefits for all customers with minimal grid impacts, if charging is managed properly. It is KCP&L's position that a combination of EV charging infrastructure ownership models (host site, 3rd party, and utility) will be needed to enable EV adoption to grow with maximum benefits for customers, the grid and the environment. Additionally, the three incentive models referenced by the Commission for comment are not mutually exclusive. Utilities need the flexibility to bring forth various programs to the Commission to stimulate the market in different ways. There is no need for the Commission to pick one 'model' for Missouri. Regardless of the incentive model, it will require investment by all parties (individuals, private companies, third-party service providers, and utilities) to deploy the charging infrastructure that will be required to support meaningful EV charging and transportation electrification. KCP&L welcomes continued and specific discussion of these issues.

WHEREFORE, KCP&L respectfully requests that the Commission and Staff consider its response.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing have been mailed, hand-delivered, transmitted by facsimile or electronically mailed to all counsel of record this 30th day of April 2019.

Robert J. Hack

Robert J. Hack