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April 30, 2017

VIA ELECTRONIC FILING

Morris L. Woodruff
Missouri Public Service Commission
Governor Office Building
200 Madison Street
Jefferson City, MO 65102

RE: Request for comments regarding emerging issues and subsequent workshop meeting
File No. EW-2017-0245

Dear Secretary Woodruff,

Attached are comments filed on behalf of ChargePoint. Please let me know if you have any questions.

Respectfully,

A handwritten signature in blue ink, appearing to read "David Schatz".

David Schatz
Director, Public Policy
ChargePoint

FOR THE MISSOURI PUBLIC SERVICE COMMISSION

In response to request for comments on the promotion of a competitive market for plug-in electric vehicles

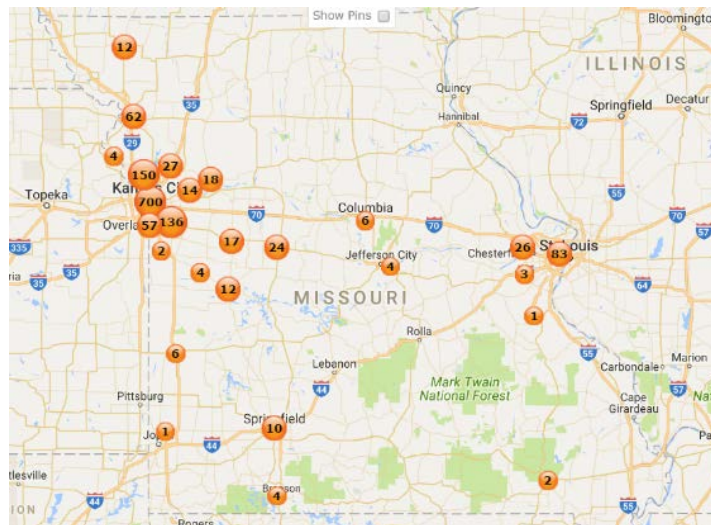
COMMENTS OF CHARGEPOINT, INC

I. INTRODUCTION

ChargePoint thanks the Commission for the opportunity to provide these comments on the forthcoming collaborative, targeted discussions on emerging issues related to utility regulation. In initiating this study, Missouri will develop a set of recommendations to explore aspects of the grid of the future, which is customer-centered, affordable, reliable, and environmentally sustainable.

ChargePoint is the world's largest and most open electric vehicle ("EV") charging network with more than 34,000 Level 2 EV and DC fast charging (DCFC) spots around the country, including 744 public and private stations in Missouri. A map of these charging locations is featured below in Figure 1.

Figure 1. ChargePoint charging ports in Missouri.



ChargePoint has more than 6,500 customers, including major employers, municipalities, universities, utilities, real estate developers and parking garage facility owners and operators that

provide EV charging and related services to EV drivers. ChargePoint customers in Missouri include the Novus, Missouri Botanical Garden, BMW, Wells Fargo, Mastercard, Busch Stadium, and Tanger, among others.

ChargePoint was established by Silicon Valley entrepreneurs with the sole mission to ensure that consumers do not hesitate to purchase electric vehicles because they could not find a place to charge them. ChargePoint's business model is to engineer and sell networked charging station hardware and services to third parties: businesses, governments, workplaces, multiunit dwellings, and homes. This business model is similar to Uber, which operates a network of privately-owned vehicles, or Airbnb, which is a network of privately-owned properties. ChargePoint is credited with delivering the first networked "smart" charging station in the US market, and is building a global EV community, connected through a unified network. ChargePoint has been recognized for its contributions to innovation, including several prestigious industry awards. In addition, the company was one of 16 companies from around the world invited to the COP 21 meeting in Paris to accept the United Nations Momentum for Change Award, which recognized ChargePoint's innovative and scalable approach to tackling climate change.

II. RECOMMENDATIONS FOR EMERGING ISSUES DISCUSSION

ChargePoint recommends that the following issues be considered by the Commission as part of its workshop discussions:

- Establishing guidelines for a utility role in EV charging that supports innovation, competition, and customer choice in equipment and services;
- Ensuring equitable access to the benefits of transportation electrification;
- Evaluating how smart, connected charging stations can be utilized to optimize grid benefits from EV charging; and,
- Considering alternative rate structures for fast and high-speed charging sites.

Guidelines for a Utility Role in EV Charging

Commission proceedings in various states, including the Ameren EV charging proposal here in Missouri, have initiated an important dialogue around determining the appropriate utility role in supporting sustainable and scalable growth in EV adoption and the EV charging infrastructure industry. ChargePoint recommends that the Commission consider this utility role as part of its proceedings as a critical and growing feature of the grid of the future in Missouri.

ChargePoint encourages the Commission to consider issuing guidelines to shape utility engagement similar to those approaches that have been taken in California, Oregon, Massachusetts, and New York. Importantly, in 2017 the MPSC determined that charging services constitute a competitive marketplace outside of the jurisdiction of the Commission.¹ In continuing to clarify this competitive space and EV charging infrastructure's role in grid modernization, the Commission can incent smart and connected charging to provide the greatest benefits to the grid and enable more tools for grid management and reliability. We would recommend that the Commission consider possible guidelines that:

- Support competitive EV and EV charging markets;
- Stimulate innovation and increased choices in charging equipment and the networks enable this beneficial load;
- Determine ratepayer benefits of increased EV adoption, including improved grid efficiency, operational flexibility, and reliability; and,
- Retain customer choice in equipment and services and empower site hosts to set pricing and access controls to ensure the highest utilization of charging assets.

Equitable access to transportation electrification

The Commission's workshop should also explore the critical issue of equity with regard to transportation electrification. ChargePoint recommends that the Commission consider the

¹ Missouri Public Service Commission. File No. ET-2016-0246, Tariff No. YE-2017-0052

question of equity in EV charging not only in terms of the distribution of grid benefits, which can positively affect all ratepayers through grid utilization, providing a downward pressure on rates, but also the importance of ensuring equity in the distribution of transportation and environmental benefits, as well. The workshop should seek to establish a baseline understanding of the significant benefits that smart EV charging brings to all ratepayers, and inform policies to deploy these technologies to critical areas of the grid. The discussion should prioritize programs and policies that seek to increase access to electrified transportation all areas, including in underserved and low- and moderate- income communities, including light duty vehicles, car sharing, and buses.

Smart Charging

As EV adoption increases, load created by EV charging will impact the electrical grid. It will be important for utilities to work with stakeholders and the Commission to establish programs and rate structures that encourage off-peak charging through load management, demand response, and increase charging when it is most beneficial to the grid.

Time-of-use (“TOU”) rates may be implemented for residential customers to encourage EV charging during off-peak times. ChargePoint encourages consideration of residential EV-only TOU rates that leverage the embedded metrology within connected home EV charging stations, in lieu of adding a second utility meter to measure EV load. Investor-owned utilities in California recently filed advice letters to pursue a second phase of their embedded pilots; Decision 12-11-002 approving the first phase of the embedded pilot is available for review online [here](http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M081/K786/81786001.PDF).² ChargePoint recommends that utilities establish pilots to gather data on how connected charging stations can be leveraged to allow residential customers in Missouri to

² <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M081/K786/81786001.PDF>

subscribe to an EV-Only TOU rate while avoiding the additional costs of deploying new meters at every charging station.

Alternatives to demand charges

Utilities use peak demand to properly size electrical facilities for their individual customers, guarantee adequate generating capacity is available for all customers, and ensure cost recovery. Demand charges to commercial customers are typically based on the highest average 15 minutes in a monthly billing cycle. Unfortunately, high-speed DC fast charging stations are currently characterized by having a low load factor with sporadic instances of very high energy use due to a limited, but growing number of vehicles in the market. This means that in the near term, site hosts face high demand charges, which could amount to hundreds of thousands of dollars annually, due to the few peak charging sessions that occur each month. The risk of high operating costs creates a barrier to EV infrastructure deployment, limiting EV adoption and grid benefits.

ChargePoint recommends that the Commission evaluate alternative rate structures for high energy use charging stations to capture costs. There are several options to consider that would still allow utilities to recover all costs while at the same time encourage sites to operate fast chargers. Examples include:

- Demand charges could be replaced with or paired with higher volumetric pricing to provide greater certainty for charging station operators with low utilization. This rate could be scaled based on utilization or load factor as charging behavior changes over time with increased EV adoption.
- The bank of charging stations could be put on a separate meter in order to use a unique “EV charging” rate that is designed to reflect charging needs. Note: it is not necessary to separately meter every single charging station, since many charging stations have embedded metrology.

- A pilot rate could be developed specifically for fleet operators, particularly those that operate electric bus fleets that may charge overnight and provide time of use benefits to the grid.
- The utility could consider pricing signals to the station operator, such as time-of-use or critical peak pricing.
- Utilities should factor in the overall EV load from all vehicles in its service territory and its benefit to the grid not just that metered at the DCFC. With increased EV adoption, there will be increased load, which could lead to greater grid benefits in the future.

III. CONCLUSION

Thank you for the opportunity to provide comments. ChargePoint looks forward to continuing the discussion and working with the Commission, utilities, and other stakeholders on EV and EV charging issues in Missouri as part of its emerging issues workshop.