

Exhibit No.: **650**
Issue: ChargeAhead Program Tariff
Witness: James Ellis
Sponsoring Party: ChargePoint, Inc.
Case No.: Case No. ET-2018-0132

CHARGE POINT, INC.

Case No. ET-2018-0132

REBUTTAL TESTIMONY

OF

JAMES ELLIS

Campbell, California
October 2018

ChargePoint Exhibit No. 650
Date 12-4-18 Reporter TM
File No. ET-2018-0132

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Union)
Electric Company d/b/a Ameren Missouri)
for Approval of Efficient Electrification)
Program.)

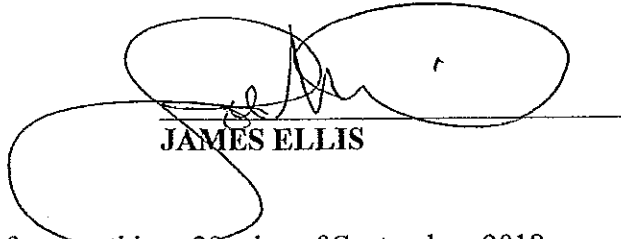
Case No. ET-2018-0132

AFFIDAVIT OF JAMES ELLIS

STATE OF TENNESSEE)
) ss.
COUNTY OF DAVIDSON)

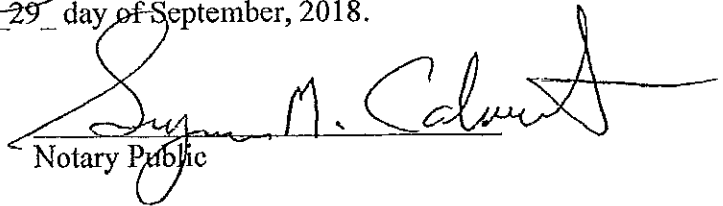
JAMES ELLIS, being first duly sworn on his oath, states:

1. My name is James Ellis. I am the Senior Director for Utility Solutions of ChargePoint, Inc.
2. Attached hereto and made a part hereof for all purposes is my Rebuttal Testimony.
3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my personal knowledge, information and belief.



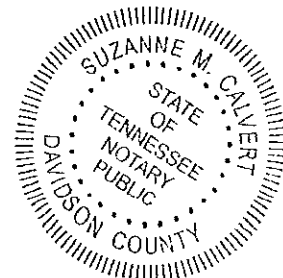
JAMES ELLIS

Subscribed and sworn before me this 29 day of September, 2018.



Notary Public

State of Tennessee
County of Davidson
Sworn to and subscribed before me on
the 29th day of Sept, 2018
Suzanne M. Calvert
Notary Public
My Commission Expires 5/2/2022



1 **I. INTRODUCTION AND SUMMARY OF RECOMMENDATIONS**

2 **Q: Please state your name and address.**

3 A: My name is James Ellis. My business address is 254 E. Hacienda Avenue,
4 Campbell, CA 95008.

5 **Q: Please describe your background, experience, and expertise.**

6 A: Prior to joining ChargePoint, Inc. ("ChargePoint") I served as the Director of
7 Electrification and Electric Vehicles for Pacific Gas and Electric Company
8 ("PG&E") with a focus on developing products and programs to support customer
9 needs in the fastest growing electric vehicle ("EV") market in the United States.
10 During this time, I also served as a board member for the California Electric
11 Transportation Coalition supporting advocacy for low carbon fuel standards,
12 vehicle and infrastructure incentives and supported policies for an increased
13 utility role in transportation electrification. I also served as board member for the
14 California Plug-In Vehicle Collaborative, working with government and industry
15 stakeholders to identify and advocate for accelerated transportation electrification
16 through education and outreach initiatives. Before PG&E, I was the EV Regional
17 Manager for Nissan North America in the Corporate Planning and Sales and
18 Marketing organizations. At Nissan, I was responsible for market acceptance
19 activities including strategy development and implementation for EV
20 infrastructure in key markets to support the 100% battery electric LEAF. During
21 this time, I developed financial tools and strategies that enabled the deployment of
22 hundreds of DC fast chargers in the US. I also served as Senior Manager for
23 Transportation and Infrastructure at the Tennessee Valley Authority (TVA),

1 leading research and development activities related to clean transportation
2 technologies, utility plug-in readiness activities across the 80,000 square mile
3 service territory and worked on carbon reduction strategies to enhance economic,
4 environmental and societal benefits. I hold a Master of Business Administration
5 degree from the Massey School of Business at Belmont University and a BS
6 degree from Appalachian State University.

7 **Q: On whose behalf are you testifying?**

8 A: I am testifying on behalf of ChargePoint, where I serve as Senior Director for
9 Utility Solutions.

10 **Q: Please describe your job responsibilities?**

11 A. In my role at ChargePoint, I manage a team that advises electric utilities and other
12 key stakeholders in North America on EV market engagement and investment,
13 and support the development of policies and programs to accelerate the adoption
14 of EVs and EV charging equipment and services.

15 **Q: Have you provided testimony before a utility regulatory body in any previous
16 proceedings in this State or any other?**

17 A: Yes. I have provided written testimony serving as ChargePoint's witness in
18 Michigan for Case No. U-17990 and Case No. U-20134 regarding Consumers
19 Energy, and in California as the Company witness for Application 15-02-009 with
20 PG&E.

21 **Q: Are you sponsoring any exhibits?**

1 A: No.

2 **Q: What is the purpose of your testimony in this proceeding?**

3 A: The purpose of my testimony is to address Union Electric Company d/b/a Ameren
4 Missouri's ("Ameren") application and accompanying tariff sheets seeking
5 approval of two new tariffed programs collectively referred to as the "Charge
6 Ahead" program, as filed at the Commission on February 22, 2018. The
7 application proposes a rebate program for electric vehicle charging stations in the
8 Company's service territory. Section II of my testimony will summarize the
9 proposed rebate program, which appears in the application as Charge Ahead –
10 Electric Vehicles. Section III of my testimony will detail ChargePoint's principles
11 for utility investment in electric vehicle charging infrastructure, focused on the
12 foundation of the competitive market for charging equipment in Missouri. Finally,
13 Section IV of my testimony will explore how the proposed Charge Ahead –
14 Electric Vehicles program aligns with ChargePoint's principles for investment. It
15 will show how the proposal supports the competitive market for EV charging
16 throughout the State and mitigates risk to ratepayers in deploying charging
17 infrastructure.

18 **Q: Please summarize your recommendation for the Commission.**

19 A: I recommend that the Commission approve the application, as it supports charging
20 industry principles detailed in Section III. Under the terms outlined in the
21 application, rebates provided through Ameren will incent development of
22 charging infrastructure in a way that will stimulate technology innovation,

1 encourage competition in the market, and enable customer choice for EV charging
2 equipment and services. Rebates for EV charging hardware and installation
3 represent an efficient, low-risk model for utility investment and will encourage
4 customer investment in competitive charging technologies and electric vehicle
5 adoption, long-term.

6 **Q: Please describe ChargePoint's expertise in the EV charging market.**

7 A: ChargePoint is a leading manufacturer of EV charging equipment and provider of
8 network, maintenance and associated services. ChargePoint designs, develops,
9 and deploys residential and commercial AC Level 2 ("L2") and DC fast charging
10 ("DCFC") stations, software applications, data analytics, and related customer and
11 driver services aimed at creating a robust, scalable, and grid-friendly EV charging
12 ecosystem. Using ChargePoint products and services, our customers operate more
13 than 54,000 Level 2 and DC fast charging spots, including more than 1,300
14 publicly available workplace, commercial, and private residential charging spots
15 in Missouri.

16 **Q: What is ChargePoint's business model?**

17 A: ChargePoint's business model is to engineer, manufacture, and sell the hardware,
18 cloud-based network and associated services necessary for EV charging station
19 owners to effectively provide charging services to drivers that patronize their
20 properties. In almost every case, ChargePoint does not own or operate the
21 equipment, but provides a portfolio of products and services to individuals and
22 site hosts.

1 ChargePoint sells residential charging solutions directly to individuals and EV
2 drivers, and commercial charging solutions to a “site host,” such as an employer,
3 business, city, fleet operator, or multi-unit dwelling. In addition, ChargePoint sells
4 “network services” to commercial site hosts to manage their charging
5 infrastructure using cloud-based software tools, as well as preventative
6 maintenance and related customer services. The commercial site host operates the
7 station, including granting access to EV drivers and setting the price that EV
8 drivers pay to use the charging station service on their property. ChargePoint
9 does not set the pricing to drivers at stations that are owned and operated by site
10 hosts and conveys all revenue collected from drivers as a service, other than a
11 small transaction fee, to the site host.

12 **Q: What are the products and services that ChargePoint offers to the market?**

13 **A:** ChargePoint offers a complete line of L2 and DCFC products and services,
14 including the CT4000 family of Level 2 charging stations for public and
15 workplace charging, ChargePoint Home for single-family residential use,
16 ChargePoint Multi-Family for commercial multi-unit dwellings, ChargePoint
17 Fleet, and both 24 kilowatt (“kW”) and 50 kW DC Fast Charging stations for
18 rapid-charging needs. ChargePoint’s next generation DCFC platform solutions,
19 ChargePoint Express 250 and Express Plus, are capable of charging from 62.5 kW
20 to 500 kW to meet the needs for today’s vehicles and prepare for tomorrow’s
21 vehicles, including medium and heavy-duty transportation options.

22 For drivers, ChargePoint provides a unified mobile and web application for all
23 aspects of public, workplace, and home EV charging. ChargePoint drivers have

1 access to real-time information, payment, and support services through the
2 information available on the screen of the charging station, in their mobile app,
3 via email and text notifications, or on the ChargePoint website. ChargePoint also
4 provides services to drivers, free of charge, which allow them to easily find and
5 access the EV charging infrastructure provided by station owners through a
6 mobile app, in-vehicle navigation, and our website.

7 For site hosts, ChargePoint provides subscriptions to our cloud-based platform.
8 This provides the station site host with everything needed to manage EV charging
9 operations, including access control, billing and payment processing, driver
10 queuing and advanced load management, and online management tools for
11 charging utilization data collection and analysis. We connect stations to the
12 ChargePoint cloud over a secure, payment card industry (“PCI”) compliant,
13 cellular data network allowing station owners to manage all their charging
14 operations from a single dashboard.

15 Maintenance and customer service are a priority for our company. ChargePoint
16 offers a comprehensive set of support services for both EV drivers and station
17 hosts, including: a 24/7/365 hotline for drivers, the industry’s first parts and on-
18 site labor warranty, site qualification, installation and station validation services
19 and help line for site host specific questions.

20 **Q: How do ChargePoint stations communicate to ChargePoint Network for**
21 **drivers?**

1 A: All of the stations deployed with ChargePoint are connected via cloud to form a
2 data-driven, cohesive global network. Stations with cloud connectivity and data
3 collection features can be referred to as smart, connected, and/or networked
4 charging stations.

5 **Q: What are the capabilities of smart, connected EV charging stations?**

6 A: “Smart” EV charging stations is a broad term, but generally refers to the electric
7 vehicle supply equipment (“EVSE”) having at least the ability to meter electricity
8 passing through the unit, provide load management and scheduled charging
9 features, provide for point of use payment and access control, and incorporate
10 two-way communication from the EVSE to the driver as well as the station
11 operator. These capabilities can be of significant importance to a utility as it can
12 provide a wealth of information related to charging behaviors and load profiles
13 and enable various program designs, including demand side management. Those
14 programs could include interval data collection, emergency curtailment via
15 demand response, or modulated vehicle charging rates. The associated
16 communication, back office, and technology platform can also be leveraged to
17 provide enhanced station management features for site hosts and well as an
18 improved driver experience through greater visibility and interaction.

19 **Q: Who are ChargePoint’s typical customers?**

20 A: Customers include workplaces, governments, hotels, colleges and universities,
21 hospitals, electric utilities and other energy companies, parking garages, airports,
22 multifamily housing, auto dealerships, and other businesses.

1 A: The total cost of the incentives in the rebate program is estimated to be \$10
2 million, and incentives are allocated to different market segments according to the
3 number of ports expected and level of charging in each segment. The program
4 includes an additional proposed \$1 million budget for marketing and promotional
5 program activities.

6 **Q: How does the Company propose to allocate incentives among market**
7 **segments?**

8 A: Ameren proposes the following allocations among market segments:

- 9 • Multifamily – \$4 million
- 10 • Workplace – \$1 million
- 11 • Public Around Town – \$1 million
- 12 • Long Distance Corridor – \$4 million

13 **Q: What is the expected number of ports developed in each category as a result**
14 **of the incentives?**

15 A: Ameren projects the following expected ports:

- 16 • Multifamily – 800 Level 2 ports
- 17 • Workplace – 120 Level 2 ports and 16 DCFC ports
- 18 • Public Around Town – 120 Level 2 ports and 16 DCFC ports
- 19 • Long Distance Corridor – 10-12 DCFC ports

20 **Q: What are market segments covered and incentive amounts for Level 2**
21 **charging station rebates?**

1 A: The incentives are directed at the costs of the charging equipment, as well as other
2 installation-related costs, such as line extension and site development.

3 **Q: Where will the charging stations be located?**

4 A: The rebates are designed to incent deployment of charging infrastructure
5 throughout Ameren's service territory at multifamily, workplace, and public
6 around town sites where customers are willing to provide the required 50% cost
7 share. The program is driven by private investment and competitive market
8 activities, and the utility will not select specific locations for charging stations.

9 **Q: Will Ameren enable multiple providers of EV charging infrastructure to**
10 **participate in the Charge Ahead program?**

11 A: Yes. Ameren proposes to establish an "EV trade ally network" to ensure that
12 multiple contractors are available to perform installations of equipment from
13 various EV charging manufacturers.

14 **Q: Would EV charging site hosts have a choice of the charging stations installed**
15 **on their premises under the Charge Ahead program?**

16 A: Yes. Site hosts will have a choice of electric vehicle charging products that will
17 be eligible for rebates in the program.

18 **Q: Would the EV charging site hosts have control over the charging stations**
19 **installed on their premises under the Company's proposal?**

1 A: Yes. Site hosts receiving rebates under the Charge Ahead program will operate
2 and maintain the charging infrastructure installed on their premises and interact
3 directly with the drivers that use the stations.

4 **III. PRINCIPLES OF UTILITY INVESTMENT IN**
5 **ELECTRIC VEHICLE CHARGING**

6 **Q: Should utility commissions be considering utility investment in EV charging**
7 **infrastructure?**

8 A: Yes. ChargePoint believes that there is a need for commissions to consider the full
9 range of roles for utilities that will help support and encourage transportation
10 electrification, both in Missouri and nationwide. Investments should be
11 thoughtful, deliberate, and risk averse to help develop a robust and sustainable EV
12 market that promotes grid benefits for all ratepayers. ChargePoint believes that
13 through consideration of the various models for EV charging station deployment
14 that involve utility investment commissions can support near- and longer-term
15 goals for wider EV adoption.

16 **Q: Should the utilities be playing a role in the EV charging market?**

17 A: Yes. Utilities are well situated to help address some of the obstacles currently
18 preventing wider deployment of EV charging equipment. Commissions should
19 authorize strategic, risk averse activities and cost-effective ratepayer-funded
20 infrastructure investments that will help accelerate expansion of EV charging and
21 EV adoption. Critically, utilities should engage in program designs that support

1 the diverse and competitive market for electric vehicle charging infrastructure and
2 site hosts' choice in investing in charging solutions.

3 **Q: Why do charging station site hosts invest in EV charging solutions available**
4 **in the competitive market?**

5 A: EV charging station site hosts choose to invest in EV charging for a wide range of
6 reasons, and each site host has its own business model for providing charging
7 services. For many employers, it may be a low-cost benefit provided to employees
8 to encourage adoption of clean transportation technologies that support corporate
9 sustainability. Apartment building owners may provide charging as an amenity
10 and will typically charge for the service as they do for a coin-operated laundry.
11 Cities and counties may deploy charging stations to encourage low-emission
12 driving and support local air quality, and they may charge cost-recovery fees in
13 order to avoid giving away charging services at taxpayer expense. Fleet operators
14 seek a lower total cost of ownership using electricity as a transportation fuel.

15 **Q: Why is it important for site hosts to have a choice in the type of EV charging**
16 **equipment and services?**

17 A: As stated above, each site host has different reasons and preferences regarding the
18 hardware and services related to EV charging. The Yale Center for Business and
19 the Environment reviewed a range of EV charging equipment and business
20 models and concluded that “[n]o single technology or business model available
21 today is exactly right for all charging scenarios. There are pros and cons to each
22 alternative, depending on the location and the driver base that the charging station

1 aims to serve.”¹ The range of choices in EV charging goods and services is a
2 strength indicating that the quickly evolving market is meeting the varied needs of
3 its wide range of consumers. Site hosts are able to tailor the particular options for
4 station fees, driver authentication, accessibility, payment collection and other
5 transaction capabilities, advertisement, and data management and output (e.g.,
6 energy, station usage, and environmental benefits). Site hosts are also the best
7 suited to make choices about the number of charging stations needed on their site.
8 This is especially true when site hosts participate in the purchase of the charging
9 station, which will help ensure that charging stations are deployed efficiently and
10 in places where they will get the most use and be well maintained.

11 **Q: Based on successful utility programs, what is ChargePoint’s preferred**
12 **approach for utility investment in charging infrastructure?**

13 A: In ChargePoint’s experience, the rebate-based approach has been successfully
14 employed in other utility service territories. Rebate-based programs have the
15 fastest deployments of charging stations, greatest competitive choice for
16 customers, and least administrative burden to utilities and customers.

17 **Q: Explain the rebate-based approach to utility investment in charging stations.**

18 A: In a rebate model, utility investment is directed toward the hardware, services,
19 and installation of charging infrastructure. In incenting hardware, services, and
20 installation, a utility can decrease barriers for private investment in EV charging.

¹ Yale Center for Business and the Environment, 2015, “Financing Electric Vehicle Markets in New York and Other States” page 6, available at http://cbey.yale.edu/files/YALE-CBEY-EVSE%20PAPER_FINAL.pdf.

1 For rapid deployment, the site make-ready work can be performed by a licensed
2 electrician, as scheduled by a participating site host, and the utility may offset the
3 costs of that installation in lieu of scheduling, performing the construction
4 management and carrying higher program costs.

5 **Q: Does the rebate model preserve customer choice and competition in EV**
6 **charging markets?**

7 **A:** Yes. In this program design, utilities provide a direct financial incentive to site
8 hosts for the installation of the qualified EV charging equipment of their choice.
9 Since utility investment is directed to offset the costs of deploying charging
10 stations to customers, site hosts can choose, purchase, own, and operate charging
11 stations on their properties. This arrangement allows for competitive market
12 participants to continue to meet unique customer demands and serve the evolving
13 market, while also allowing utilities to invest in charging deployments without the
14 risks of large-scale ownership and operation. Additionally, rebate programs may
15 allow utilities to gain insights into the grid through data collection from
16 networked charging, without building and maintaining the complex networking
17 capabilities already offered in the competitive market. Overall, this program
18 design reduces risks and lowers the cost barrier to EVSE deployment, allows the
19 charging station site host to determine which equipment and services best meet
20 their needs, and builds a sustainable EV charging marketplace to help accelerate
21 EV adoption.

22 **Q: Are there any examples of proposed and approved rebate-based utility**
23 **programs in other jurisdictions?**

1 A: Yes. There are many proposed or approved programs in diverse jurisdictions that
2 offer rebates for EV charging infrastructure, including programs from Pacific Gas
3 & Electric (CA), Southern California Edison (CA), AEP Ohio (OH), DTE Energy
4 (MI), Consumers Energy (MI), NV Energy (NV), National Grid (NY), and Rocky
5 Mountain Power (UT).

6 **Q: Does ChargePoint have a position on the choice between networked and non-**
7 **networked charging stations in utility investments?**

8 A: Yes. ChargePoint believes smart and connected charging infrastructure can
9 enhance the effectiveness of utility program investments. Networked charging
10 provides visibility into load growth, giving the utility better data to plan system
11 upgrades, support reliability, and enable grid benefits over traditional load
12 management. Based on the data collected from smart charging stations, new
13 processes can be created to better integrate electric vehicle charging with the
14 increasing renewable generation interconnected with the grid – helping balance
15 intermittent loads and reduce costs of providing clean energy.

16 **IV. SUPPORT FOR THE CHARGE AHEAD – ELECTRIC VEHICLES**
17 **PROGRAM AND ALIGNMENT WITH UTILITY PROGRAM PRINCIPLES**

18 **Q: Does ChargePoint have a position on the Charge Ahead – Electric Vehicles**
19 **program offerings?**

20 A: Yes. ChargePoint supports the Charge Ahead program structure. ChargePoint
21 believes that the program’s proposed rebate incentive program enables customer
22 choice of charging equipment and will promote the competitive market for

1 electric vehicle charging stations and significantly advance the adoption of
2 electric vehicles in Ameren's service territory and throughout Missouri.

3 **Q: Please explain why you support an incentive program for an estimated 1,040**
4 **Level 2 and 42 DC fast charging ports.**

5 A: The Charge Ahead program's approach to utility investment in EV infrastructure
6 aligns and satisfies the principles laid out in the previous section. As noted above,
7 the rebate-based approach represents an efficient and cost-effective model to
8 deploy charging stations through utility investment. We strongly believe that the
9 program design the parties advance will foster a scalable and sustainable
10 competitive market for electric vehicles and charging stations in Missouri.

11 **Q: Does the rebate program acknowledge the role of site hosts in selecting**
12 **technologies most appropriate for their properties?**

13 A: Yes. Under the program description, site hosts will choose among a range of
14 charging technologies. In maintaining customer choice, the program supports the
15 competitive market for EV charging solutions and allows site hosts to choose the
16 solution that is best for site circumstances.

17 **Q: Does the proposed rebate program's approach to site host pricing align with**
18 **ChargePoint's principles for utility investment in charging stations?**

19 A: Yes, the Charge Ahead program allows for site host pricing control. In
20 maintaining site hosts' ability to set pricing for charging services they provide, the
21 program may enable site hosts to manage their charging assets more effectively.
22 Through pricing tools, site hosts can motivate EV drivers to visit their facility,

1 utilize the charging stations as needed and encourage responsible charging
2 behavior. Furthermore, site host pricing will improve the quality of data collected
3 and the conclusions drawn about charging station investments in the Company's
4 service territory.

5 **Q: Would the Company's rebate program encourage innovation in Missouri's**
6 **EV charging market?**

7 A: Yes. Site hosts will have a choice among multiple vendors of charging
8 technologies, including smart charging offerings, enabling a market that is
9 dynamic, competitive, and innovative. The rebate program will allow for the
10 introduction of new, more innovative products and solutions as they become
11 available to the market and concurrently decrease cost barriers to adoption of
12 those solutions.

13 **Q: Will the rebate program result in the efficient and effective siting of EV**
14 **charging infrastructure?**

15 A: Yes. As the rebates are designed to cover a range of costs of equipment and
16 installation, a majority of site hosts may still be required to invest in EV charging
17 stations in this program. This investment gives site hosts "skin in the game,"
18 which mitigates risks to ratepayer funding and gives motivation to choose
19 appropriate sites for the greatest utilization. Site hosts receiving rebates will be
20 invested in the management, use, and maintenance of EV charging stations on
21 their properties, which will increase the overall benefits and success of the Charge
22 Ahead program.

1 A: Yes. The program provides the opportunity for gaining valuable data from
2 networked charging stations. As noted in Section III above, networked charging
3 provides grid benefits over traditional load management, and valuable data can be
4 collected to inform better utility planning decisions and help maintain reliability
5 and affordability. The data collected from smart chargers incented in the rebate
6 program may include utilization insights, price signals to drivers, load profiles,
7 and preferred features. These insights will be key to assessing the effect of the
8 program and advancing beneficial EV adoption in Missouri.

9 **Q: Does this conclude your testimony?**

10 A: Yes.