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VIA ELECTRONIC FILING

September 21, 2018

Hon. Kathleen H. Burgess
Secretary to the Commission
New York State Public Service Commission
Empire State Plaza, Agency Building 3
Albany, New York 12223-1350

Re: Matter No. 18-E-0138 – Proceeding on Motion of the Commission Regarding Electric Vehicle Supply Equipment and Infrastructure

Dear Secretary Burgess,

Attached for electronic filing in the above-referenced matter, please find comments by ChargePoint, Inc. in response to the Notice of Working Group Meeting and Request for Post-Conference Comments issued on August 16, 2018. Please let me know if you have any questions.

Respectfully,

A handwritten signature in black ink, appearing to read "Kevin Miller", written in a cursive style.

Kevin George Miller
Director, Public Policy
ChargePoint

1. What role should the utility play in supporting Electric Vehicle Supply Equipment (EVSE) deployment? Please address this question from the perspective of utility ratepayers, Electric Vehicle (EV) suppliers, and providers of EVSE. How should utility investment costs, if any, be compensated or recovered? Should utilities have the opportunity for earnings adjustment mechanisms related to successful EVSE deployment?

There are a range of actions that the Commission, utilities, public agencies, and the private market can undertake to increase access to electric transportation across New York. ChargePoint respectfully suggests that the Commission consider approaches that provide for net benefits for participants and non-participant utility ratepayers, meet drivers' needs, support innovation in equipment and services, and complement private market activity.

Utilities have very important roles to play in meeting New York's transportation electrification goals. First and foremost, utilities are ideally situated to ensure that the associated new load is incorporated in a safe, reliable, and efficient manner. ChargePoint is proud to be a partner of utilities around the country in deploying utility-supported charging infrastructure and pilot programs that incorporate capability for load management. We believe that there is a vital role for utilities in supporting efficient integration of EV load and that the right program design can encourage the installation of more charging stations around the state in a manner that complements, and does not duplicate or conflict with, the private market.

When considering whether to expand the role for utilities to utilize ratepayer funds for cost recovery of incentives or assets on the customer side of the meter (i.e., the competitive EV charging market), it is important to consider New York's market today and how it is growing into tomorrow's market.

Public Charging Infrastructure

Publicly-available EV charging infrastructure (also known as electric vehicle supply equipment, or EVSE) is installed by a range of different entities to provide charging services to customers, employees, tenants, and other EV drivers. These entities, commonly referred to as "site hosts," provide EVSE for a wide variety of reasons. Private businesses, including retailers, grocery and convenience stores, hotels, multi-unit dwelling (MUD) owners, among others, may install EVSE to attract new customers or tenants with a valuable amenity. State and local governments may install EVSE to support their emission reduction goals, electrify their own fleet vehicles, attract visitors, and provide a valuable amenity to the community. A wide variety of site hosts may also find it valuable to demonstrate their commitment to sustainability.

Regardless of the reason for hosting a station, site hosts may use pricing as a signal to incentivize charging behavior. Some site hosts offer free charging for customers and some charge a nominal fee, while still others offer free charging for the first hour or so and then begin charging in order to encourage drivers to make the EVSE available to others. EV drivers

New York Public Service Commission, Matter No. 18-E-0138

Post-Conference Comments by ChargePoint, Inc.

can typically find these charging locations, along with information about applicable fees and the number of charging ports, in smartphone apps.

Potential Program Design Options for Utility Programs

There are several ways in which ratepayer-funded investments in EV charging can expand access to charging while also complementing the competitive EV charging market. As discussed in Question 2, it would be valuable for any of these options to be evaluated by the Commission based on a set of criteria that ensure that programs lead to widespread grid benefits and complement the competitive EV charging market.

Make Ready Programs

“Make ready” refers to the line extension on the customer side of the meter as well as wiring, conduit, and sub-panels that are often needed to provide power to EVSE located in a site host’s parking lot on the customer side of the meter. Make ready infrastructure is essentially an extension of distribution system infrastructure, except that most of it is located behind the site host’s meter and so would usually be considered the responsibility of the site host. However, deploying and maintaining distribution system infrastructure is one of a utility’s core competencies. Accordingly, one of the most effective ways for a utility to support EVSE is for it to support make ready deployments. A make ready program could take the form of a rebate or upfront payment to a site host to use toward make ready costs, or the utility could use existing personnel and resources to construct, own and maintain the make ready for interested site hosts. Either way, the utility can receive valuable charger utilization information by providing this consideration and prepare for future load management programs to better integrate vehicles and the grid.

One advantage of make ready programs that will be discussed in more detail below is that the utility effectively leverages the private capital of the site host to purchase the actual EVSE. When site hosts share in the total cost of installing the EVSE, program dollars can go further. A make ready program also has the advantage of leveraging one of the utility’s core competencies – long-lasting distribution infrastructure – while allowing the site host to maintain choice of the charging equipment and network services that best meet its needs and support its own goals for installing the EVSE.

As long as the utility spends funds prudently in a way that minimizes costs and maximizes benefits to ratepayers and meets criteria established for the program by the Commission, a utility should be allowed to capitalize and recover the full cost of a make ready program from customers, including the cost of the make ready and administration costs. Program criteria should be established in advance and be based on the principles we discuss in our response to Question 2. Because make ready is essentially distribution infrastructure, a utility should be allowed to recover make ready costs in the same manner as it recovers the cost of distribution system investments made in the ordinary course of business, namely, by putting the value of the make ready investments into its rate base. Recovering make ready

New York Public Service Commission, Matter No. 18-E-0138

Post-Conference Comments by ChargePoint, Inc.

costs in this manner would allow a utility to earn its authorized rate of return on the value of these investments, thereby incentivizing and rewarding a utility for supporting the deployment of public EVSE and helping it maintain visibility in to this new and unplanned load.

Utility Rebates

A rebate program would work similarly to a utility's demand-side management (DSM) rebate programs (e.g., incentivizing energy efficiency) in that it would offer a specific dollar amount to site hosts for installing qualifying EVSE. It is important that the utility create a list of equipment that qualifies for the rebate to ensure that any EVSE that is installed meets functional requirements and supports the goals of the program, such as providing an open network, port level charging data, and managed charging capabilities. The utility should also update the list of qualifying equipment regularly to keep up with the pace of innovation and allow site hosts to install the newest products.

As with make ready programs, if the utility spends funds prudently in a way that minimizes costs and maximizes benefits to ratepayers and meets the program's criteria, a utility should likewise be allowed to recover the full cost of a rebate program for customers, including both the cost of rebates and administration costs. Such costs can be recovered similar to how the utility recovers costs for its DSM programs. Alternatively, the Commission should consider allowing a utility to earn an authorized rate of return on the value of the rebates it provides by amortizing the value of the rebates. While rebates are not typically included in a utility's rate base, treating them similarly provides an efficient and effective mechanism to incentivize the utility for supporting the nascent transportation electrification market and promote reliability.

Similar to the Commission's role supervising a utility's investments in its distribution system or administration of a DSM program, the Commission's role in a make ready or rebate program is to review, approve, or modify the utility's proposal and supervise the utility's implementation of the approved program. Prior to a utility proposing a transportation electrification program, the Commission should consider establishing evaluative criteria, standards, and guidelines for any utility proposal leveraging industry best practices and input from industry stakeholders.

Utility Ownership

Should the Commission consider allowing direct ownership of EVSE by utilities, ChargePoint respectfully recommends that the Commission identify program requirements associated with such ownership to avoid any unintended negative market impacts that would unduly prefer a single vendor or disassociate the local site hosts from playing their important role.

For example, the Commission could ensure that such programs include local site host choice of the EV charging network solution and EVSE vendors as well as control over the pricing to the EV driver. In doing so, market forces can still be in play, private market actors will be

New York Public Service Commission, Matter No. 18-E-0138

Post-Conference Comments by ChargePoint, Inc.

encouraged to invest their own capital and local site hosts will be able to maximize station utilization and optimize the driver experience. Examples of such programs that include utility ownership with local site host choice and control include San Diego Gas & Electric “Power Your Drive” and Pacific Gas & Electric’s EV Charge Network in California.

Earnings Adjustment Mechanisms

ChargePoint supports further exploration of utility incentives in the form of Earnings Adjustment Mechanisms (EAMs) related to transportation electrification. The integrity of transportation electrification EAMs hinges on developing reliable metrics whose outcomes can be solely attributed to a utility’s actions. We recommend convening formal or informal working groups to explore this topic further.

Utility Role in Supporting Workplace and Residential Charging

Utility make ready programs and rebate programs for EVSE are also effective measures of promoting the deployment of workplace chargers. Providing EVSE for employees is a great way for employers to attract and retain talent and meet their own sustainability goals. Supporting workplace charging is also an effective and targeted way for a utility to promote transportation electrification. Because roughly 90 percent of EV charging takes place either at home or work, the convenience of workplace charging encourages many prospective EV drivers to purchase an EV, especially for employees who may not have convenient charging options at home (for example, renters or MUD residents). ChargePoint encourages the Commission and New York’s utilities to consider workplace EVSE programs, in addition to programs to support publicly accessible EVSE.

One important difference between workplace EVSE programs and publicly available EVSE programs is that participating employers must be permitted to restrict access to the EVSE to employees. When employers install EVSE, many employees come to rely on it either as their principal means of charging their EV or as a way to ensure that they can complete their commute home. Employers can also use internal systems to facilitate communication between employees who drive EVs to ensure that everyone who needs a charge can get one before the workday is over. Any utility program to support workplace charging should allow employers to offer charging only to their employees.

ChargePoint has supported utility make ready and rebate programs for residential customers that minimize costs and maximize benefits to ratepayers and complement the competitive market. We recommend that utilities interested in exploring an in-home charging program should consider incorporating EV-specific time-of-use (TOU) rates and other load management mechanisms to maximize the value that managed charging can provide to the grid. Additionally, program designs should be flexible enough to leverage any homeowner that already has an EVSE to participate in the utility program.

2. What are the most significant changes the Commission can make in order enhance the utilities' roles in supporting EVSE deployment? What are the benefits and problems with utility ownership of EVSE?

The most significant action that the Commission can take would be to establish clear guidance that allows for utilities to play increasingly active roles in EV charging market in a manner that complements, and does not compete or unduly interfere with, the private market.

ChargePoint recommends that the Commission adopt straightforward criteria that any utility transportation electrification program would need to meet in order to receive approval. This would provide assurance to New York's utilities that they will be able to recover eligible costs that are consistent with Commission-established criteria. The Commission's criteria should be clear enough that utilities and stakeholders can easily determine whether a program meets them, while allowing room for innovative program proposals.

ChargePoint recommends that the Commission establish criteria to ensure that utility transportation electrification programs:

- Protect site hosts' ability to choose the EVSE and network services provider from a list of pre-qualified vendors, equipment, and network services;
- Promote innovation and competition in the private EVSE market;
- Make use of smart charging capabilities or innovative rate designs to ensure that EV charging provides benefits to the grid and other ratepayers; and
- Use ratepayer funds in a prudent manner and ensure that EVSE deployed under the program remains useful and available to ratepayers.

Several jurisdictions have established criteria for regulators to evaluate EV charging programs proposed by utilities. In addition to traditional cost-recovery considerations, these criteria often evaluate issues that are specific to the EV and EV charging markets. Some examples include

- California PUC Code 740.12 (a)(2)(b) as amended by SB 350 of 2015 (Sec. 32): "Programs proposed by electrical corporations shall seek to minimize overall costs and maximize overall benefits";
- Utah SB 115 of 2016: "54-20-103. Electric vehicle incentive program. (1) The commission shall, before July 1, 2017, authorize a large-scale electric utility to establish a program that promotes customer choice in electric vehicle charging equipment and service...";
- California PUC Code 740.12 (a)(1)(F) as amended by SB 350 of 2015 (Sec. 32): "The commission shall approve, or modify and approve, programs and investments in transportation electrification, including those that deploy charging infrastructure, via a reasonable cost recovery mechanism, if they are consistent with this section, do not unfairly compete with nonutility enterprises as required under Section 740.3, include performance accountability measures, and are in the interests of ratepayers as defined

New York Public Service Commission, Matter No. 18-E-0138

Post-Conference Comments by ChargePoint, Inc.

in Section 740.8.”

- In Massachusetts, the Department of Public Utilities established a clear set of criteria for evaluating whether utility EVSE investments are eligible for cost recovery without any direction by the Massachusetts General Court (state legislature). See D.P.U. Docket No. 13-182-A, Final Order.

While there is no “one-size-fits-all” model for utility EV charging programs, successful utility programs share a set of common principles that the Commission should consider when establishing evaluative criteria.

Successful utility transportation electrification programs stimulate customer choice, innovation, and competition; leverage matching payments from site hosts, whenever possible; support site host control over access and pricing; avoid island networks and ensure open access for EV drivers; support equitable access to electric transportation options; and encourage smart charging behavior to enable widespread grid benefits.

Stimulate Customer Choice, Innovation, and Competition

Utility transportation electrification programs should allow a site hosts to choose the type, number (within program caps), and brand of EV charging stations that are installed on the site host’s property, as well as the network services that connect and operate the charging stations. As discussed above, different site hosts install EVSE for different reasons and with different goals in mind. The EV drivers that will use a site host’s EVSE are also the site host’s customers, employees, tenants, or constituents, so the site host is well-positioned to assess their needs and provide the optimal charging solution. Further, some site hosts will look for the most cost-effective option while others will be more interested in offering the most advanced features to EV drivers, in addition to cost considerations.

When site hosts can choose the EVSE that best meets their needs, EVSE vendors strive to develop the most innovative and value-added products and compete to meet site hosts’ needs. In other words, a thriving competitive market that offers a wide variety of innovative products at competitive prices depends on a site host’s ability to choose the right product. By contrast, utility programs that rely on procurement of EV charging solutions through a request for proposal (RFP) process can actively hinder innovation and competition in the market. When a utility procures a “one-size-fits-all” option through an RFP that results in one single hardware offering or EV charging network operator, there is only one opportunity for competition – the RFP – and little incentive for innovation because EVSE vendors must design products to meet the specifications of the utility RFP rather than directly address site hosts’ and drivers’ needs. Such RFPs can determine the single vendor for many years and essentially prevent other competitors from having a fair chance to compete in those specific markets outside of the program. However, RFP processes can be supportive of continued market innovation if they are used to pre-qualify multiple hardware and network service options based on minimum functional criteria. This ensures that charging solutions meet minimum specifications without picking winners and losers.

The most effective utility transportation electrification programs protect a site host's ability to choose and, by so doing, stimulate the development of an innovative and competitive market. Further, "one-size-fits-all" utility procurement programs that cover all costs of EV charging solutions by definition places the entire cost burden on ratepayers whereas a competitive market supplemented with private capital cost share creates a sustainable market that can sustain itself after the conclusion of any ratepayer-funded programs.

Leverage Private Funding

The most efficient and cost-effective utility EVSE programs do not rely exclusively on ratepayer funding. Instead, effective EVSE programs require site hosts to have some "skin-in-the-game" by sharing in the cost of the EVSE that is deployed. For make ready and rebate programs, skin-in-the-game typically means that a site host will pay for any upfront costs of the EVSE, including installation costs not covered by the utility's make ready program.

Leveraging private funding has two major benefits. First, when site hosts contribute to the total upfront cost of EVSE, the ratepayer funds dedicated to the program go further and lead to the deployment of more EVSE than they would if the utility were covering 100 percent of the costs.

Second, when site hosts share in the cost of EVSE, they are motivated to maximize the value of their shared investment. In practice, maximizing the value of an investment in EVSE means that a site host will try to maximize the utilization of the EVSE by experimenting to find the most effective fee structures, providing visible signage to attract EV drivers, enforcing parking policies so that non-EVs do not block the EVSE, and generally ensuring that the EVSE remains functional and in good repair. By contrast, if a utility pays for the entire upfront and ongoing cost of the EVSE, a site host may not be motivated to maximize EVSE utilization or even know what is being installed in their own parking lot.

Support Site host Access and Control Over Pricing

In order to fulfill its own unique goals for hosting EVSE, a site host must be able to access the EVSE's back-end network and have control over pricing to drivers. When a site host has access to its EVSE's network, the site host gains valuable insights into how the EVSE is used, such as learning how many charging sessions have occurred, what time of day the EVSE is most often used, the average duration of charging sessions, where drivers are coming from, among other key utilization insights. When a site host can understand and measure how its EVSE is being used, it can manage the EVSE accordingly to maximize the value it provides both to itself and to EV drivers.

Further, a site host must be able to adjust pricing to drivers as it sees fit because different pricing schemes can help site hosts achieve their various goals. For example, a big-box retailer may want to offer free charging for the first hour to encourage EV drivers to shop in its

New York Public Service Commission, Matter No. 18-E-0138

Post-Conference Comments by ChargePoint, Inc.

store, but then charge a fee to encourage drivers to move their vehicles. MUD owners have a wide variety of unique characteristics (e.g., dedicated vs. shared-use parking), which may require specifically-tailored pricing to incentivize optimal use by residents and guests for their specific location. A convenience store may want to vary the fee it charges throughout the day to encourage charging and attract customers during slower times. Whatever the site host's goal, various pricing structures can help the site host achieve that goal. As with the skin-in-the-game principle, when a site host is invested in the success of the EVSE, drivers reap the benefits and ratepayers benefit from a higher utilized asset.

Avoid Island Networks and Ensure Open Access for EV Drivers

Any EVSE program should be designed with EV drivers in mind. Over the long term, transportation electrification efforts will only be successful if EV drivers' overall experience of EV ownership, including public charging, is positive. To ensure positive experiences, an EV driver should be able to charge her vehicle at any publicly available EVSE that is supported by ratepayer dollars regardless of the driver's make of vehicle or membership in an EV charging network. Many EV drivers may choose to join an EV charging network for the convenience that it provides, but membership should not be a requirement to use a charging station. Similarly, EVSE must not be restricted to customers of the utility that supported the deployment of the EVSE. Finally, publicly available EVSE should accept multiple forms of payment, including credit cards, to ensure that charging at public stations is easy and convenient.

Avoiding creating island networks – in which there are networks that only certain drivers can use and which make it difficult for members of the island network to use other charging stations – is crucial to the value proposition for drivers considering purchasing an EV. Island networks make it difficult for EV drivers to travel or move to new cities or in and out of specific utility territories. By contrast, protecting open access for EV drivers ensures a seamless, hassle-free experience that encourages other drivers to purchase EVs.

To ensure that EV drivers have access to EVSE, site hosts must also be empowered to oversee parking spaces that are restricted to EVs while actively charging. Site hosts should be allowed to install signage restricting parking spaces and permitted to tow vehicles that park in designated parking spots but do not use the EVSE. Such enforcement policies are crucial to ensure that EVSE is accessible to EV drivers when they need it.

Support Equitable Access to Electric Transportation Options

The transition to electric transportation should not leave any groups behind. Utility EVSE programs should include and even emphasize environmental justice and economically disadvantaged communities, perhaps through increased incentives and targeted technical assistance. These communities can often benefit the most from transportation electrification through reduced emissions and increased transportation options. The Commission should ensure that any utility transportation electrification proposals account for the unique needs of these communities and include them in their programs.

Encourage Smart Charging Behavior to Enable Widespread Grid Benefits

EVs can be more than simply new load for utilities. With the right policies, rate structures and incentives, EVs can be beneficial loads. For example, through EV-specific TOU rates, a utility can encourage EV drivers to charge during off-peak hours or during peak solar PV generation hours, depending on the utility's needs. Customers with smart chargers can also opt in to demand response programs.

ChargePoint recommends that the Commission should direct utilities to ensure that any EVSE that is supported with ratepayer funds are capable of smart or managed charging so that grid benefits can be realized as EV penetration increases. In practice, that means that EVSE must have smart charging capabilities built in, have two-way communications through an EV charging network, and comply with the OpenADR 2.0 standard.

It is important to note that it is not necessary for utilities to own or operate EVSE or manage the associated EV charging network in order to enjoy the benefits of smart charging capabilities. Using both incentives and targeted rate structures, utilities can manage energy flows through EVSE without directly owning or controlling the infrastructure itself. In the event the utility does own some EVSE, it can, and should allow site hosts to choose the qualifying network services in addition to the EVSE.

3. What role should the utility play in encouraging EV adoption? Should the role of the utility extend beyond customer education and awareness? Please address this question from the perspective of utility ratepayers, EV suppliers, and providers of EVSE. How should utility costs, if any, be compensated or recovered?

Utilities are well-positioned to provide outreach and education to their customers with respect to electricity as a transportation fuel. Utilities are a trusted resource for information regarding energy and electricity use. Utilities also have existing marketing and communication channels they can use to provide information to current and prospective EV owners, as well as customers that are prospective EVSE site hosts. Because both utilities and ratepayers (including non-EV owners) will benefit from increased EV load, it makes sense for utilities to promote transportation electrification through outreach and education and to recover the costs of such efforts from their customers.

Common effective outreach and education methods include: bill inserts, emails, sponsoring community events, partnering with auto dealerships to promote EVs, and providing information on the utility's website. Utilities can also hire or assign employees dedicated to transportation electrification. A designated person or team that provides technical assistance and is available to answer questions can help prospective site hosts determine their needs and get comfortable with hosting EVSE.

The Commission should review any utility outreach and education proposals, similar to how it would review any other utility outreach and education proposals, to ensure that ratepayer funds are spent wisely and effectively. The Commission should review and approve a reasonable budget for such efforts.

5. Are there any communities or customer groups that require special consideration in the placement of EVSE facilities? What role should the utility play in encouraging or facilitating increased EV usage by low- to moderate-income households?

In ChargePoint's experience in deploying over 54,000 charging spots, site hosts that make a financial contribution to the charging station are far more likely to actively support the successful installation and ongoing preventive maintenance of the charging station because they have "skin in the game." However, underserved market segments may present higher barriers for site hosts to enter into the EV charging market. In these instances, there is a case to be made for further incentivizing increased access to charging and electric transportation that would not otherwise be deployed. It is also essential to ensure that transportation electrification programs for underserved markets consider the wide range of ways to increase access to electric transportation beyond direct deployment of EVSE (e.g., public and private fleets, including bus electrification, ride-sharing, and ride-hailing).

6. What rules, requirements, and standards are needed to enable EVs and EVSE to operate as a source of grid services and system value, including possible data and instrumentation needs?

We recommend that the Commission consider rules that will increase access to publicly available EVSE and support the incorporation of EV charging into the grid.

ChargePoint strongly supports Open Access requirements for publicly available EV charging infrastructure (e.g., stations must accept multiple forms of payment and cannot require membership as a precondition). Such requirements have been adopted by statute in Connecticut, New Hampshire, Massachusetts, and California.

We also support utilizing open standards for EV charging network services. Open standards and protocols for EVSE will help regulators ensure that drivers, riders, site hosts, and utilities will be able to access and operate their charging stations even if the EVSE vendor or network services provider one day goes out of business. Similarly, open standards will allow regulators to minimize risk to ratepayers of assets becoming stranded. EV charging network service providers use communications protocols to carry out different types of network services.

Despite similarities in name, the Open Charge Point Protocol (OCPP) has no relationship to ChargePoint, Inc. While ChargePoint's products support OCPP network functionality, we did

not create and we do not maintain that specific communication protocol. OCPP is a network communications protocol for EVSE that was developed in Europe to support station to cloud communications. Another example of a communications protocol is OpenADR, which allows utilities and system operators to send automated demand response signals to customers participating in a demand response program, potentially including EVSE site hosts. OCPP is not related to Open ADR and OCPP functionality is not required for charging stations to participate in demand response programs.

It should be noted that the same communications protocol can support functional differentiation. This differentiation is an indicator of the strength of the EV charging market. Site host choice in both hardware and network services are essential to spur innovation in charging solutions, drive down costs, and meet unique site host and driver needs.

8. Should EVs and EVSE be treated as DERs? If so, what factors need to be addressed to include EVs and EVSE within the DER market and compensation structure for DERs?

Electric vehicles, in part or fully powered by electricity from the grid, along with the associated charging infrastructure, do not by themselves necessarily fall under existing definition of DERs. Some electric vehicles and charging equipment have the capability to undertake load management functions and ensure the efficient use of energy. Electrification of vehicles is generally considered to be a more efficient form of transportation and there are certain charging technologies that are more efficient in the provision of fuel than others. However, the primary purpose of EVs and EVSE is to support the conveyance of drivers, riders, and goods between destinations. These critical transportation functions require separate consideration from DERs.

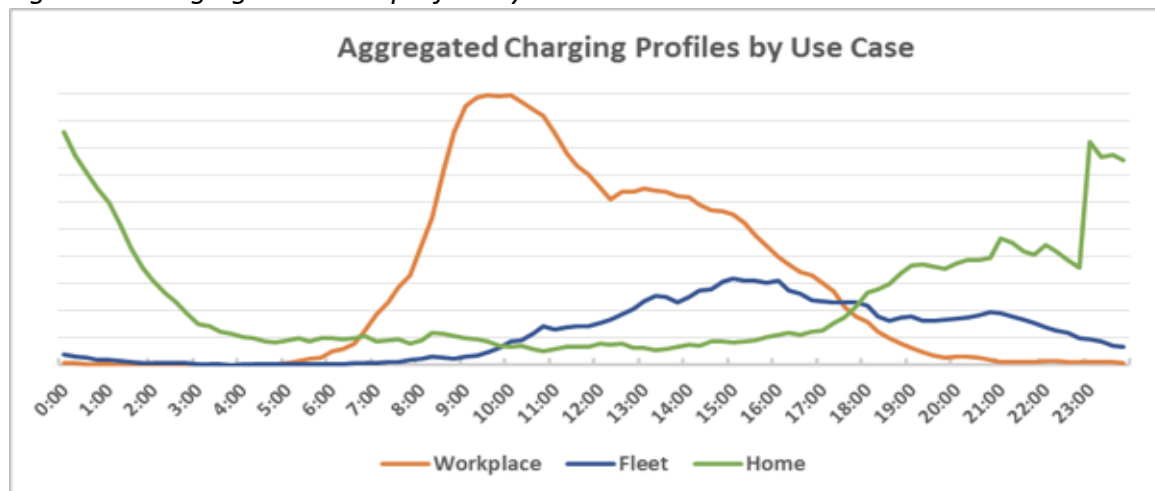
Broadly treating EVs and EVSE as DERs would not give due consideration for how best to create potential benefits to the grid, reduce costs for ratepayers, or avoid negative impacts to the competitive marketplace. We respectfully urge the Commission to explore the creation of a consistent, statewide framework to address the unique case of EVs and EV charging rather than apply existing DER transportation electrification technologies. By so doing, New York would be in a position to accelerate the sustainable and scalable growth of its EV and EV charging markets while also creating a beneficial load for the grid.

9. What considerations should be taken into account in designing rates for charging stations? For example, should a typical three-part tariff (customer, demand and energy charge) be applied? Should the rate design be different for residential versus commercial use? Should the rate design be expected to change over time as EV penetration increases? Should time-of-use rates be required for EV charging? Should utility residential EV charging tariffs (filed in

Case 18-E-0206) be modified? Please address these questions from the perspective of utility ratepayers, EV owners, and EVSE suppliers.

ChargePoint encourages the Commission to consider the variety of ways in which the new load stemming from increased adoption of EVs can be shaped to create widespread grid benefits through electric rate design and load management techniques. The types and levels of benefits to the grid from EV charging taking place under an energy management program will vary greatly by EV charging use case, as illustrated in Fig. 1.

Fig. 1: EV charging utilization profiles by use case



ChargePoint recommends that the Commission keep two key questions in mind when considering the relative value of energy management programs in different EV charging use cases: (i) what will be the impact on driver experience, and (ii) is this the best use case for energy management?

- Residential charging is perfectly suited for load management and effective integration of wind and other distributed energy resources. In addition, numerous studies have shown that residential charging is extremely responsive to price signals through TOU rates.
- Workplace charging presents opportunities to flatten out the workplace load through direct load management, and help utilities integrate solar generation during the day. However, workplace charging may not always be aligned with traditional, afternoon demand response programs, as workers tend to leave during or before afternoon peak.
- Fleet charging typically aligns well with traditional demand response opportunity. In the event that active demand response programs are not implemented, load can otherwise be managed to shift charging away from the afternoon peak.

New York Public Service Commission, Matter No. 18-E-0138

Post-Conference Comments by ChargePoint, Inc.

Technological Considerations

Several options exist today with EVSE technology to enable and incentivize EV charging behavior. These options include load management and using the embedded EVSE meter to support on-bill, or off-bill, incentives based on specific EV charging time-of-use.

Successfully implementing an EV-only TOU rate hinges on the accurate measurement of electricity usage that is solely attributable to charging an EV. This can be achieved through the installation of an additional utility meter, though the upfront costs of secondary meters can be a significant barrier to enrolling customers. However, there are a range of alternative methods available on the market that can facilitate the implementation of EV specific rates that don't require the added cost of secondary utility meters.

One such method is networked home charging station with embedded metrology such as the ChargePoint Home, our single-family residential Level 2 charging station product. The station is connected to our cloud via the home WiFi. This allows residential customers to track their energy usage using the ChargePoint Mobile App. Charging data is capable of being transmitted to a utility for billing purposes or simply used by a resident to manage their own home energy use on a whole-home TOU rate or other EV tariff. ChargePoint Home meets or exceeds the requirements set forth in the electricity-as-motor-fuel sections of NIST Handbooks 44 (device code). In utility terms, our charging stations, including Home, meet the accuracy requirements of ANSI C12.1-2008 (1% class) as applied to embedded EVSE metering.

Other jurisdictions are already exploring these opportunities. ChargePoint is currently providing the networked charging solution for Green Mountain Power's managed home charging program including both demand response and using embedded meter data to facilitate an unlimited off-peak charging plan. Additionally, the Minnesota Public Utilities Commission recently approved a pilot proposal by Xcel Energy to reduce the upfront cost burden for customers looking to opt into EV tariffs by implementing the tariff directly with a "smart" EVSE. See Minnesota Docket No. 17-817: Petition for Approval of a Residential EV Service Pilot Program.

ChargePoint recommends that the Commission order that utility residential EV charging tariffs filed in Case 18-E-0206, and any other off-bill incentive for EV load management, be modified to include non-utility meter options for implementation like the embedded metering in networked EVSE.

Role for Site Hosts in Incentivizing Charging Behavior

It is critical that a commercial site host have the ability to incentivize turnover at the EV charging station. Limiting the ability for site hosts to set pricing and incentivize drivers to leave once charging is complete would lead to an inefficient use of equipment and ultimately limits access to charging for all drivers.

New York Public Service Commission, Matter No. 18-E-0138

Post-Conference Comments by ChargePoint, Inc.

The nature of “refueling” an electric vehicle at an AC Level 2 station is inherently different than refueling an internal combustion engine (ICE) vehicle, and the business models for site hosts of both types of technologies are similarly different. Whereas refueling an ICE vehicle takes a matter of minutes and does not result in longer-term parking with the driver absent from the vehicle, charging an EV at an AC Level 2 station has a longer timeframe and often results in a parked, unattended vehicle. The combination of charging and parking services associated with EV charging infrastructure is unique.

Similarly, DC fast charging involves a driver plugging in for typically 10-30 minutes, where they may also park and leave their vehicle. The combination of pricing both the charging and parking services ensures that the driver returns to move the vehicle when fully charged and allows other drivers to use that charging resource. Pricing policies may also encourage the driver to visit the site and spend time shopping or otherwise provide value to the site host, which in turn will encourage the site host to set pricing policies that lead to the greatest possible utilization of that charging station.

Alternative Rate Designs for DC Fast Charging

Consistent with the comments we previously submitted in this proceeding, ChargePoint encourages the Commission to consider whether traditional, demand-based commercial rate structures are aligned with DC fast charging as New York’s EV market grows.

Utilities use peak demand to properly size electrical facilities for their individual customers and to ensure they have adequate generating capacity available for all customers. Demand charges to customers are typically based on the highest average 15 minutes in a monthly billing cycle. Unfortunately, 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 number of vehicles in the market that will use these stations in the near term. This means that site hosts can potentially face very high demand charges despite low utilization in the early years, which effectively penalizes site hosts for providing DC charging services in earlier stages of adoption.

Several alternatives for cost recovery can be considered in any future evaluation of rate design specific to providing service to DC fast charging stations and to encourage more site hosts to deploy such stations by providing a more predictive and manageable operating cost structure. As we identified in our comments submitted in this matter in response to the Petition by NYPA et al., examples include:

- Demand charge 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.
- A monthly bill credit representing a percentage of the nameplate demand associated with installed charging infrastructure behind a commercial customer’s metered service.

New York Public Service Commission, Matter No. 18-E-0138

Post-Conference Comments by ChargePoint, Inc.

- A retroactive and variable credit based on the difference of the effective blended per kWh distribution charge, including demand charges, and an agreed upon target blended rate, multiplied by the volumetric energy throughput in a given billing cycle for commercial customers with dedicated EV charging stations. (e.g. Long Island Power Authority's proposal in Matter Number 14-01299: PSEG Long Island Utility 2.0 PLAN)
- 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.
- Incentives such as ConEd's recently-approved Business Improvement Rate.
- 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.

10. How should the cost of recovering distribution network upgrades for EVSE be recovered if not through the demand charges?

As noted in the answer to Question 9, there are a range of ways in which cost recovery could take place with a rate that is structured as an alternative to traditional, demand-based rates. We look forward to working with Staff to explore these alternatives and supporting the Commission in reaching a determination on the circumstances in which different forms of cost recovery are prudent, support sustainable growth in transportation electrification, and bolster New York's efforts to achieve energy, environmental, and transportation goals.

12. Should the Commission address electrifying light-duty passenger vehicles, and medium and heavy-duty vehicles within this Case?

ChargePoint recommends that the Commission consider light-, medium-, and heavy-duty vehicle electrification, as well as for the particular needs of fleets of all vehicle classes. Including consideration of MD/HD, and fleet, infrastructure needs is vital to ensuring a comprehensive effort to accelerate widespread transportation electrification in New York.

Heavier-duty sectors and fleet operators use electric vehicles and charging technologies that are increasingly commercialized and available on the market. Private and public users of MD/HD vehicles and fleet operators are interested in conversion from fossil-fueled to electric vehicles.

Many of the benefits of MD/HD vehicle electrification are shared with those of light-duty vehicle electrification. In addition, MD/HD vehicles are large contributors of greenhouse gases and criteria pollutants that are often in close proximity to disadvantaged communities. Electrifying MD/HD sectors can offer significant benefits to environmental quality and public health and ensure widespread benefits to transportation electrification.

We recommend that MD/HD vehicle electrification be evaluated using the same set of criteria identified in our response to Question 2.

13. How should Staff structure future stakeholder engagement in this proceeding? Should additional issue-specific working groups be held prior to Staff issuing recommendations?

ChargePoint recommends that Staff convene additional stakeholder engagement in advance of issuing recommendations. Transportation electrification impacts a wide range of interests, industries, and policy priorities, with diverse stakeholders having equally diverse perspectives. Additional working groups or technical conferences would provide Staff with the opportunity to further examine the range of issues and priorities identified by stakeholders in response to Staff's questions.