chargepoint.com

ChargePoint, Inc.
254 East Hacienda Avenue | Campbell, CA 95008 USA
+1.408.841.4500 or US toll-free +1.877.370.3802

February 9, 2018

New Jersey Board of Public Utilities
Attn: Michael Hornsby, Chief Project Development Officer
44 S. Clinton Avenue
Trenton, NJ 08625

Re: New Jersey Board of Public Utilities Electric Vehicle Stakeholder Group – Follow-up Task 1 Questions: Comments by ChargePoint

Dear Mr. Hornsby,

Attached for electronic filing in the above-referenced matter, please find comments on behalf of ChargePoint, Inc. Please let me know if you have any questions.

Respectfully,

Kevin George Miller
Director, Public Policy
ChargePoint

FOR THE NEW JERSEY BOARD OF PUBLIC UTILITIES

Electric Vehicle Stakeholder Group

Follow-up Task 1 Questions

COMMENTS OF CHARGEPOINT, INC

Introduction

ChargePoint is pleased to offer comments to the New Jersey Board of Public Utilities ("BPU", or "the Board") in response to its request for comments on Follow-up Task 1 Questions.

Background

ChargePoint is the leading electric vehicle (EV) charging network in the world, with charging solutions in every category EV drivers charge, at home, work, around town and on the road. With more than 45,000 independently owned public and semi-public charging spots and more than 7,000 customers (businesses, cities, agencies and service providers), ChargePoint is the only charging technology company on the market that designs, develops and manufactures hardware and software solutions across every use case. Leading EV hardware makers and other partners rely on the ChargePoint network to make charging station details available in mobile apps, online and in navigation systems for popular EVs. ChargePoint drivers have completed more than 31 million charging sessions, saving upwards of 30 million gallons of gasoline and driving more than 732 million gas-free miles.

ChargePoint sells EV charging equipment and network services that enable EV charging station owners to provide charging services to their own or other EVs. In almost every case, ChargePoint does not own or operate the equipment. ChargePoint sells charging solutions to a wide variety of customers, including residential EV owners, employers, commercial and industrial businesses, cities and public agencies, ports, schools, public transit, delivery truck fleet operators, and multi-unit dwelling owners. ChargePoint offers a broad array of products and services that can serve light, medium or heavy duty electric vehicles.

The site host network services offered by ChargePoint enable customers to manage their charging infrastructure using cloud-based software tools. These tools provide the station owner or operator with everything needed to manage and optimize utilization of their charging stations, including online management tools for data analysis, billing and payment processing, load management and access control. Maintenance and customer service are a priority for our company. ChargePoint offers a comprehensive set of support services, including: a 24/7/365 hotline for station users, parts and labor warranty, site qualification, installation and validation services, and a help line for site host specific questions.

Responses to Follow-up Task 1 Questions

1 USDOE – AFDC Findings

1.1 Are the analysis and findings of the USDOE AFDC and ANL accurate and supported by other independent analysis? Please cite why or why not.

1.2 Should the NJBPU run the ARL GREET model for several different types of EV, ICE vehicles and other alternate fuel vehicles under different New Jersey driving conditions for various New Jersey electric generation mixes? Or not?

1.3 If the Rutgers LESS energy efficiency evaluation shows favorable results for PEVs under NJ driving conditions and a NJ energy mix, how should that information be leveraged by the BPU to accelerate the pace of EV adoption in NJ? If not what actions should be taken by BPU?

2 Energy Efficiency

2.1 Would an EV fueled by electricity from the current New Jersey electric generation sources be more efficient, less efficient or the same level of energy efficiency than the EVs noted in the ANL analysis? If so why? If not why not?

Based on the BPU's Follow-Up Task 1 Questions issued on December 20, 2017, ChargePoint understands that Rutgers University is currently under contract with the BPU to conduct the above referenced analysis.

2.2 Would an EV fueled by a New Jersey electric generation mix meet the definition of conserving energy in the definition for energy efficiency as set forth at N.J.S.A. 48:3- 98.1? If so why? If not why not?

No, an EV fueled by a New Jersey electric generation mix would not meet the definition of conserving energy in the definition for energy efficiency as set forth at N.J.S.A 48:3-98.1 ("RGGI Act") for technological, statutory, and practical reasons.

The above referenced scenario would not meet the definition of conserving energy in the definition for energy efficiency given EV and EV charging technology. As ChargePoint explained in its answer to the BPU's Task One Questions:

> *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 the definition of demand side management and energy efficiency as set forth at N.J.S.A. 48:3-51 and/or N.J.S.A. 48:3-98.1.d. Some electric vehicles and charging equipment have the capability to undertake load management*

> *functions and ensure the efficient use of energy... Furthermore, 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 are outside of the scope of the above referenced statutory definitions.*[1]

Furthermore, the statutory definition of energy efficiency in the RGGI Act is unrelated to the above-referenced scenario. As noted by the Division of Rate Counsel in their responses to the BPU's Task 1 Questions, the intent of the RGGI Act was to support "a reduction of electric load as a result of EE and conservation programs", which would provide utilities with "a full return on invested capital and foregone electric and gas distribution fixed cost contributions associated with the implementation" of energy efficiency programs.[2]

2.3 Would an EV fueled by a New Jersey electric generation mix meet the definition of using less electricity or natural gas in the definition for energy efficiency as set forth at N.J.S.A. 48:3-98.1? If so why? If not why not?

See answer to 2.2.

3 Electric Systems Impacts

3.1 What could be the expected percentage increase in electric energy attributable to EVs result in by 2025, 2030 and 2050?

3.2 What could be the expected impacts and costs (positive and negative) on generation, transmission and distribution systems by the years 2025, 2030 and 2050?

4 Grid Integration, Demand Response and V2X (consisting of Vehicle to Grid (V2G), Vehicle to House (V2H), etc.

4.1 What is the state of the technology that could allow the EV to be utilized as a demand response technology? What is the availability of the technology now and how/when will that availability evolve? What actions should NJBPU take to take advantage of the use of EVs as demand response technology? If not why not?

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[1] ChargePoint, Inc. "Responses to Task 1 Questions". October 16, 2017. Accessed on January 30 at http://www.bpu.state.nj.us/bpu/agenda/stakeholdercomments.html

[2] NJ Division of Rate Counsel. "New Jersey Board of Public Utilities Electric Vehicle Stakeholder Group Task 1 Questions: Comments of the New Jersey Division of Rate Counsel". October 16, 2017. Similarly accessed.

ChargePoint's stations and cloud services provide the ability for independent station operators to conduct load management/demand response of the allowable power level in real time. The allowable power levels can be completely shed, partially shed on a percentage basis of the actual load, or a lower power level ceiling can be set. This load management event can be scheduled to expire after a period of time, returning to the equipment normal maximum power output, or the event can be immediately rescinded at any time. These demand response events can be programmed to occur for individual charging ports or any desired groups of ports.

In order to support utilities, which may not necessarily own or directly operate stations at home or in the commercial space, ChargePoint also provides the ability for station operators to grant access rights to utilities to conduct demand response on their stations. Like any other utility demand response program, the participants would likely receive some incentive in exchange for offering this capability. ChargePoint also offers the ability to utilize standards-based application programming interfaces, or APIs, to automatically send demand response commands to the ChargePoint Cloud and control stations in the field. Furthermore, the ChargePoint server is certified as OpenADR2.0b compliant, providing a common and open standard based interface for utilities to conduct load management events.

The most common and value-added demand response application for EV charging is to target charging at the home where over 80% of total charging needs occur. Vehicles are often parked for over 12 hours at home, yet only needs to actively charge for several hours to fully refill the battery. Without incentives or guidance, EV drivers will just plug in when they arrive home and this often can often be in the late afternoon/early evening when peak coincident times also occur. With existing technologies provided by networked charging solution providers, utilities can easily integrate with a variety of platforms (similar to smart thermostats) to issue load shedding commands, confirm response, and analyze charging data. In addition to load shedding events, utility programs can also use price signals to encourage off-peak charging of EVs.

ChargePoint recommends that the Board encourage utilities to explore demand response and load shifting programs targeted at reducing system peak, relieving distribution system congestion, and supporting renewable integration via smart charging at the home. It is also recommended that utilities be encouraged to work in concert with automakers and the EV charging industry to develop solutions that leverage existing "consumer electronics" products and driver interfaces while being agnostic to specific vendors.

4.2 V2X: Is the two way communication of the EV to the grid a commercially available technology or not? If so why? If not why not? What is the availability of the technology now and how/when will that availability evolve? What actions should NJBPU take and when to take advantage of the use of EVs in V2X technology?

Two-way communication between EVs and the grid can be incorporated into a variety of different applications. From a communications standpoint, ChargePoint's stations already have the capability of communicating through standardized communication protocols, such as

OpenADR2.0b. Advanced vehicle-to-grid (V2G) applications are also being explored through the utilization of other protocols, such as ISO 15118. California's Vehicle Grid Integration Working Group identified more than 70 different V2G applications that were possible through the use of ISO 15118.

One of the more commonly discussed "two-way" V2G functions is the ability of the EV to feed back, or "export", energy back onto the grid for the purposes of providing frequency regulation or other ancillary services. The technology and standards around this particular use case is less developed than other more commercial applications discussed in the previous response. There are several challenges to the mass deployment of this type of functionality, including: vehicle battery warranty concerns, vehicle technological capabilities, metering and telemetry requirements, interconnection rules to ensure safe grid operations, comprehensive control algorithms, and contractual requirements that would provide sufficient value to all parties. Each of these challenges would likely require multiple policy actions, some which may include necessary action by PJM to address the ability of EVs to export energy onto the grid.

ChargePoint recommends that the Board work with stakeholders to identify the practical applications of V2X/V2G for the utilities distribution system management and address specific barriers related to those functions.

4.3 Could the EV electric customer access the energy markets directly, through an aggregator or Network Operations Center (NOC), through the electric utility or blockchain?

It would be feasible for a range of stakeholders to participate in energy markets. Regardless of which market actor participates, it is essential that market participants are accountable and can ensure reliable and accurate data.

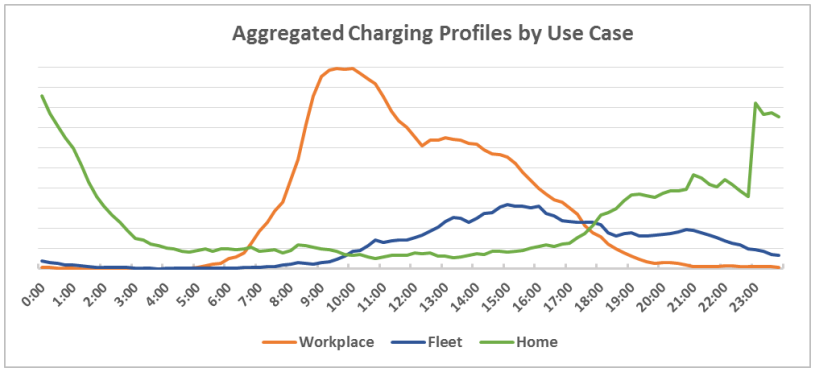
4.4 If the EV could be utilized as a demand response technology in a two way communication with the grid, distribution and/or transmission, would the EV meet the definition of demand side management in N.J.S.A. 48:3-51? If so why? If not why not?

No, the scenario in 4.4 would not meet the definition of demand side management in N.J.S.A. 48:3-51. The extent to which EVs or EVSE can be incorporated into demand response programs will not materially change the fact that the primary purpose of EVs and EVSE is not demand side management. Rather, their primary purpose is the conveyance of drivers, riders, and goods between destinations.

4.5 What are the types and level of benefits to the grid of EVs in a demand response program and what would be the overall costs to develop and implement this program?

Demand response is just one of many ways to carry out energy management programs associated with EV charging. 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:

Fig. 1: EV charging utilization profiles by use case



ChargePoint recommends that the Board keep two key questions in mind before evaluating 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?

Workplace charging naturally aligns with incorporating renewable generation to mitigate the "duck curve", or over-generation of solar assets, where such issues are relevant. In addition, there are opportunities to flatten out the workplace load through direct load management, as well as frequency regulation possibilities. However, workplace charging is mismatched for traditional, afternoon demand response programs, as workers tend to leave during or before afternoon peak.

Fleet charging, on the other hand, typically aligns well with traditional demand response and frequency regulation programs. In the event that active demand response programs are not implemented, load can otherwise be managed to shift charging away from the afternoon peak.

Residential charging is perfectly suited for load management. In addition, numerous studies have shown that residential charging is extremely responsive to price signals through TOU rates.[3] As such, demand response is not the only demand side management tool available to encourage off-peak charging.

[3] See, e.g., Electric Power Research Institute. "Duke Energy: Charging Demos Inform PEV Readiness Planning". 2013; Nexant. "Final Evaluation for San Diego Gas & Electric's Plug-in Electric Vehicle TOU Pricing and Technology Study. 2014; EPRI. "DTE Energy: Driving the Motor City Toward PEV Readiness". 2014

Commercially-available charging, such as those deployed at retail or destination sites, are much less well suited for demand response programs due to greater unpredictability in utilization and the inherent need of drivers to charge when they need to charge at public stations. The transient nature of such station users adds additional challenges.

4.6 If the EV could be utilized as a demand response technology, should the BPU consider changes to demand charges? If so why? If not why not?

ChargePoint encourages the Board to consider demand response opportunities separately from the challenges posed by traditional, demand-based commercial rate structures.

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 options 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. 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.
- 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.
- A demand charge "credit" could be applied for a period of time to qualifying service application that only provide power to support electric vehicle charging.
- 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.

4.7 Should the BPU consider the use of telematics (such as Con Edison's SmartCharge New York program) in any demand response program and to address changes to demand charges. If so why? If not why not?

We recommend that the BPU consider technology-neutral approaches to demand response programs that could include traditional fixed devices associated with utility accounts (e.g. networked charging stations at a residential or commercial property), in addition to alternative means including telematics that are associated with mobile assets.

4.8 If the EV is not using less electricity or natural gas per the definition for energy efficiency as set forth at N.J.S.A. 48:3-98.1 and the EV could be utilized as demand response for the EV to meet the definition of demand side management in N.J.S.A. 48:3-51, what could be the expected impacts on the grid for increased generation capacity by 2025, 2030 and 2050? What could be the level of costs and over what timeframe?

4.9 If there is an increase in electric energy usage from the increase in EV but not a generation capacity increase because of demand response of EV what would the increase efficiency of the grid be in 2025, 2030 and 2050? If not why not?

5 Electric Vehicle Supply Equipment (EV Charging Station) State of the Competitive Market

5.1 Is vehicle charging a fully competitive market across all market sectors (e.g. residential, public L2, public DCFC, low income communities and Multi Unit Dwellings)? If not, which market sectors are not competitive and why not? Which market sectors are competitive? What is the business case for the EVSE industry and where does the business case fail?

The EV charging market is growing and dynamic, and there is no one static business case for the EVSE industry or for EV charging site hosts. The business case, or value proposition, for various entities to install and operate charging stations incorporate many different value streams and varies across use cases. Site hosts balance costs against the value created by hosting a station, which are often beyond direct revenue that may be generated. Non-financial benefits include providing fringe benefits to attract and retain employees, attracting new customers and have them stay for longer periods of time for businesses, meeting sustainability goals for local governments and businesses, appealing to new tenant, amongst many others. Residential customers acquire EVSEs for use at home in order to take advantage of faster charging rates and provide for a connected, user interface to support scheduling and tracking of charging at home.

Costs related to deploying EV charging infrastructure can be broadly categorized as either upfront ("capital") costs or ongoing ("operating") costs. Capital costs include the cost of the station, installation costs (which often exceed station costs), any potential distribution service or system upgrades, additional electric infrastructure (meters, panels, disconnect switches), etc. Barriers related to operating costs include electricity costs (including demand charges), ongoing operations and maintenance, and network services.

Different EV charging technologies present EV charging site hosts with differing capital and operating cost barriers. For example, operating costs are much higher for DC fast charging site hosts at corridor and urban hub locations that they would be for site hosts with a few AC Level 2 charging stations. Capital cost barriers are similarly higher for DC deployments, whereas installation cost barriers for AC Level 2 stations can be significantly mitigated by adopting EV Ready building codes to ensure that the necessary wiring and conduit is in place to facilitate installation at a later date.

Participants in different market segments may have differing abilities to support the financial costs and derive value from deploying and operating charging stations. For example, workplaces, destination locations, and retail businesses can often more immediately derive value from the provision of charging services. However, capital and operating costs may serve as greater barriers for site hosts in environmental justice communities to enter the EV charging market.

5.2 If the charging market sections are not competitive should the utilities be allowed to develop managed charging programs for the non-competitive charging market sections? If not why not?

ChargePoint respectfully suggests that the Board consider whether managed charging programs 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 Jersey'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 Jersey's market today and how it is growing into tomorrow's market. The private sector is actively selling EV charging stations around the

state. There is demand for charging stations as evidenced by the more than 600 charging spots sold to customers in New Jersey by ChargePoint alone to date. These charging spots have been purchased by workplaces, hotels, public entities, retail sites, residential locations, and more.

Well-designed utility programs can complement current market activity, but do not necessarily do so by default. Please see the answer to 5.5 for further detail on recommendations on guidelines for utility EV charging programs.

5.3 If the charging market sections are competitive should the utilities be allowed to develop managed charging programs for the competitive charging market sections? If not why not?

See answer 5.2 and 5.5.

5.4 If the utilities are allowed to develop managed charging programs is there a time limit or other criterion that should be imposed on this participation? If so what timeframe? Should any utility managed charging program have a sunset date?

Please see answer to 5.5.

5.5 If the utilities are allowed to develop managed charging programs what guidelines should be developed for this participation? If not why not?

ChargePoint encourages the Commission to identify clear criteria and guidelines for evaluating utility EV charging programs. Identifying "rules of the road" for utility programs up front can ensure that programs complement the competitive market, are reviewed efficiently, and support continued innovation in transportation electrification.

Most managed charging programs can be implemented in a way that does not presuppose that the utility must own the asset and can be agnostic to the specific vendor which a local site host or EV driver may wish to choose. Established EV charging network features exist today to allow for utilities to received detailed interval level charging data and to conduct load management through rights granting, or via open standard based platforms like OpenADR2.0b.

In the event that utilities are permitted to expand their traditional role to provide incentives or own assets on the customer side of the meter in New Jersey, we recommend that the following three guidelines be included for any utility program:

- Support equitable access to electric transportation & electric mobility in EJ/economically disadvantaged communities;
- Complement private market activity without duplicating it; and
- Allow for site hosts to have a choice in EV equipment and services.

A number of jurisdictions have already identified guidelines for utility programs that could serve as case studies for the Board. For example, the Massachusetts Department of Public Utilities (DPU) developed a three-pronged set of criteria to evaluate proposals in which costs would be recovered through rates:

> "For Department approval and allowance of cost recovery, any proposal must: be in the public interest; meet a need regarding the advancement of EVs in the Commonwealth that is not likely to be met by the competitive EV charging market; and not hinder the development of the competitive EV charging market." *See* D.P.U. 13-182-A at 13.

The Massachusetts criteria are specific enough to ensure that ratepayer investments complement, rather than compete with, private market activity. This focus on complementing the private market ensure that market power of regulated utilities is focused on overcoming market segments that face the highest barriers to entry.

In addition, the Massachusetts criteria are flexible enough to account for differences in program design, support technological innovation, encourage multiple business models. For example, the Massachusetts DPU recently evaluate of two very different utility EV charging programs: Eversource Energy's $45 million make ready program (Docket No. 17-05) was recently approved, and National Grid's $24 million rebate-based approach (Docket No. 17-13) is currently awaiting a decision.

The California Public Utilities Commission implements a "balancing test", which requires "that the benefits of utility ownership of PEV charging infrastructure must be balanced against the competitive limitation that may result from that ownership". *See* CPUC Decision 14-12-079 at 5.

6 Utility Role in "Charge Ready"

6.1 Should electric utilities engage in rate-based "Charge Ready" programs? What additional measures beyond Charge Ready are appropriate in non-competitive markets? Should utilities offer rebates on EV chargers or own/operate EV chargers in non-competitive markets?

There are several ways in which ratepayer-funded investments in EV charging can expand access to charging while also complementing the private market:

"Charge Ready" (or "Make Ready") Programs
A potential program design for a utility pilot would target the utility's involvement on the installation of the electrical infrastructure on the customer side of the meter up to, but not including, the EV charging station itself. This is commonly referred to as the "make ready." The utility would construct, own and maintain the electric infrastructure from the distribution transformer through the customer meter up to the charging station. By covering this electrical

infrastructure, the utility reduces costs for customers to deploy charging stations without the need to own and operate the charging station itself. The utility can still guide the capabilities of charging stations through a qualification process to ensure that the necessary charging data and/or load management capabilities are enabled. This program approach has been approved in cases before the California Public Service Commission by Southern California Edison and Pacific Gas and Electric, as well as by Eversource in Massachusetts.

Utility Rebates

One program design that is structured with simplicity in mind is the issuance of rebates for a set percentage of project costs. The rebate would apply to costs associated with private businesses or entities deploying EV charging infrastructure that meet functional requirements of the utility program to ensure that grid benefits are created.

Under this program design, participating EV charging site hosts receive a utility incentive to support the purchase and installation of smart EV charging infrastructure that meet core functional requirements, such as collecting data and providing the ability for load management, thus creating opportunity for grid benefits. Rebate programs have been utilized by investor owned utilities for years supporting energy efficiency programs so there is already an administrative framework making it simple to add EV program incentives without driving utility costs upward required under larger construction projects. This program design also allows utilities to avoid the need to obtain permanent easements, which can reduce administrative and operational burdens for the utility and program participants.

Cost recovery for utility rebates can be approached in several ways. One approach would be to treat the rebate as a regulatory asset, thereby allowing both cost recovery and a rate of return on the investment similar to other capital investments. Another approach, which was recently proposed by National Grid in Massachusetts, would recover a performance-based incentive tied to achieving the program's deployment target. A third approach would be to provide cost recovery to help accelerate the deployment of charging infrastructure without the ability for a rate of return, with the focus being on adding beneficial load at times when the utility system has excess capacity and the cost can be justified by the new energy revenues created by the electric vehicle charging, particularly at night when most vehicles are parked at the residential setting.

ChargePoint would recommend that rebate levels be based on guidelines that are supported by the Commission with broad stakeholder input, including residential, workplace and other commercial locations that would still requiring private investment by site hosts ("skin in the game") when possible.

Utility Ownership of Stations

Should the Board consider direct ownership of EVSE by utilities, ChargePoint respectfully recommends that the Board identify program requirements associated with such ownership to avoid any unintended market impacts.

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

7 Advanced Metering Infrastructure (AMI) - Smart Grid / Smart Meters

7.1 What policies should the Board establish to take advantage of AMI, Smart Grid / Smart Meters with respect to the EV market?

It is not clear to what extent AMI/Smart Meters are necessary to support the EV market or a managed charging program. Networked charging stations can include their own energy meters, using two-way communications to transmit that data to a central service hosted by the EV networking service company. This data can be run through reports, filtered, and accessed by the operator of the station as well as a third party, such as a utility. Where allowed and desired, the data can also be accessed and merged with meter data management systems to associate with utility meters and customers of record for tracking or billing purposes. The same technology platform and network can also provide the necessary load management signals to control chargers.

ChargePoint recommends that utilities take advantage of the existing consumer solutions that are present in the market that include secure, cloud-based communication protocols to access charging data and conduct load management. Doing so will complement the existing network and solution features that are already designed to support site hosts and EV drivers without potentially having to pick winners or shut out solution providers in a rapidly evolving market.

One potential policy area that could support managed charging of electric vehicles would be if AMI and smart meter technology can enable more nuanced TOU rates to a customer of record (residential or commercial), which themselves operate a charging station behind that meter. The customer of record can then use those pricing signals to support their own charging decisions, or to factor into pricing that they set for other EV drivers using their station.

7.2 Would a utility managed charging program support and supplement any smart grid (SG) or automatic meter initiatives (AMI)? If not why not and what programs should be developed instead of AMI? If so what would be the level and value of the benefit to and from the AMI programs. If not describe why not and what would be the level of value in any other program?

See answer for 7.1