BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Consider Alternative-Fueled Vehicle Programs, Tariffs, and Policies.	Rulemaking 13-11-007

CHARGEPOINT, INC. COMMENTS ON VEHICLE-GRID INTEGRATION COMMUNICATION PROTOCOL WORKING GROUP ENERGY DIVISION STAFF REPORT

In accordance with the February 23, 2018 Assigned Commissioner's Ruling Seeking Comment on Vehicle-Grid Integration Communication Protocol Working Group Energy Division Staff Report, ChargePoint, Inc. (ChargePoint) respectfully submits the following comments on the Energy Division Staff Report and questions set forth in the Assigned Commissioner's ruling.

I. INTRODUCTION

ChargePoint appreciates the opportunity to provide these comments on the Energy Division's Staff Report on the Vehicle-Grid Integration (VGI) Communication Protocol Working Group (Staff Report). ChargePoint was a member of the VGI Working Group and provided input during the stakeholder process that led to the development of the Working Group Report. As stated in the Report, each of the conclusions drawn through the Working Group process were not unanimously supported by each member of the Working Group. It was understood by Working Group members that this process was not intended to produce unanimously supported conclusions, but rather to provide feedback and possible recommendations for the Commission's consideration. ChargePoint would like to provide clarity and feedback regarding specific recommendations in the Staff Report.

As a general matter, it is important to note that the initial genesis of the VGI Working Group was to address potential inconsistencies regarding VGI as it relates to the deployment of

charging infrastructure through the investor-owned utilities transportation electrification plans pursuant to SB 350. In the September, 2016 Assigned Commissioner's ruling regarding the filing of SB 350 applications, the Commission directed the utilities to address compliance with ISO 15118 within their applications.[1] At the March 2017 prehearing conference regarding the SB 350 applications, ChargePoint voiced support for the formation of a working group to address barriers to the implementation of ISO 15118. In order to address compliance barriers raised by different parties, the Commission issued another Scoping Ruling in April, 2017, forming the Working Group.[2]

As detailed in the Staff Report, the Working Group decided to broaden the scope and focus on a larger analysis of a variety of different vehicle-grid integration use cases and different protocols. This expanded scope has broad ranging, expanded implications in terms of evaluating the total impact on not just the EVSE provider's hardware development, but also the software, engineering, and commercialization cost considerations regarding compliance with potentially multiple communication protocols. It should be understood that though this process is focused on implementation in California, the impacts of any specific adoption will be global given the current market for EVSE deployment. ChargePoint has significant concerns regarding the potential impacts of the Working Group's recommendations that focus on embedded hardware requirements that may lead to the continued implementation of multiple communication protocols. If the Commission feels it is necessary to adopt a specific requirement in order to enable the various VGI use cases at this time, ChargePoint would recommend that the Commission align with the original recommendation in the September 2016 Ruling, and focus on

[1] Assigned Commissioner's Ruling Regarding the Filing of the Transportation Electrification Applications Pursuant to Senate Bill 350 (September 14, 2016), p.29.
[2] Scoping Memo and Ruling of Assigned Commissioner and Administrative Law Judges (April 13, 2017), p.18.

the implementation of ISO 15118. As an existing international standard that is already widely recognized across a variety of markets in Europe, the adoption of ISO 15118 will ensure that California's utility programs are aligned with the direction of the majority of the rest of the international EVSE market.

Table 6 (at pages 38-39) indicates that the hardware standards discussed in the Working Group Report would not apply to the pending SB 350 applications. However, in order to avoid any confusion, delay or unnecessary market disruption that could result from ambiguity regarding program standards and requirements going forward, the final report should address applicability clearly and categorically.

ChargePoint's responses to the specific questions posed in the Ruling are below.

II. RESPONSE TO QUESTIONS

1. *Overall feedback on Staff Report*

   a. *Does the Staff Report accurately reflect Working Group discussions?*

      ChargePoint believes that the Report does reflect the discussions of the Working Group, and would reiterate that the recommendations were not unanimously supported by Working Group members.

   b. *Are there any key stakeholders comments that are missing from or misrepresented in the Staff Report?*

      Though the Report identifies a discussion of costs associated with implementing the different recommendations, the Report only references "incremental hardware costs" and does not make a note of potentially substantial software engineering costs that are associated with supporting multiple communications protocols and hardware requirements. It should be understood that any of the requirements adopted will have cost implications that go beyond the purchase of the physical components.

c. *Are all of the Deliverables referenced in the Staff Report, such as the VGI Glossary, complete and accurate based on Working Group discussions and findings?*

ChargePoint has no recommended additions to the deliverables at this time.

2. *Scope of electric vehicle service equipment (EVSE) hardware performance requirements*
a. Is it appropriate, as described in the Staff Report, to exclude single-user EVSE in privately-accessible locations (e.g., home charging) from the EVSE hardware requirements for utilities?

While ChargePoint supports withholding on the adoption of specific hardware requirements for this sector, it should be understood that residential charging applications have a very high potential for many of the VGI use-cases. Therefore, more analysis should be done in order to understand how EVSE vendors can provide products to residential customers that will unlock grid integration capabilities.

b. *Is it appropriate, as described in the Staff Report, to exclude workplaces or fleets that only use their EVSE for business vehicles from the EVSE hardware requirements for utilities?*

See previous response.

c. *If a third party, such as an aggregator, plans to aggregate residential or private workplace charging loads to provide grid benefits, would the recommended hardware requirements be appropriate to apply to these use cases?*

ChargePoint does not believe that the specific hardware requirements, with deeply embedded components or layers in a communication protocol stack, are necessary in order for EVSE to be aggregated in order to provide grid benefits. Other approaches to product design can meet the need for the kind of functional extensibility that VGI use cases require, without adding this strange and onerous requirement. ChargePoint noted during the VGI Working Group process that OpenADR 2.0b is a very good example of a way to accomplish this. Compliance with communication protocols, such as ISO 15118

and OpenADR 2.0b, can be achieved without the need to adopt specific hardware requirements.

i. *If so, should the scope of the hardware requirements be extended to single-user residential or private workplace EVSE?*

See previous response.

ii. *If not, what EVSE hardware is necessary to enable an aggregator to provide VGI services (e.g. demand response) to residential and private workplaces in addition to any utility program offerings?*

See response above.

3. *Identifying future VGI work*

a. *Are there specific research or technology pilots underway that could aid in identifying the value of use cases and/or the business case(s) for implementing VGI?*

Yes, ChargePoint is participating in a California Energy Commission EPIC pilot with SDG&E regarding the implementation of ISO 15118 in residential applications. Additionally, ChargePoint is participating in PG&E Excess Supply Pilot that is focusing on shifting charging patterns to align with solar generation. The results of these, as well as other ongoing pilots, should be analyzed to understand the value and capabilities of the different VGI uses cases prior to the adoption of any specific hardware requirements.

b. *Are there ideas for new research, development, or deployment pilots that would help utilities, electric vehicle service providers, and/or automobile manufacturers to identify the value of use cases and/or the business case(s) for VGI?*

ChargePoint would support additional pilots, similar to the EPIC research project that ChargePoint participated in with SDG&E in order to test implementation of ISO 15118 for residential applications that look at additional market sectors (fleet, workplace, multifamily, etc.) to understand and address implementation of communication protocols.

c. *Are there any policy proceedings not identified in the Staff Report that should be included in the VGI discussion going forward?*

ChargePoint recommends that in addition to the identified proceedings, these findings should be coordinated with the variety of different distributed energy resources proceedings underway at the Commission, including the Rule 21, IDER, Demand Response, DRP, and Storage proceedings. Additionally, there should be coordination with the California ISO's ESDER Phase III stakeholder process.

III. SUMMARY

ChargePoint would like to thank the Commission, the other state agency staff, the utilities, and other stakeholders for continued engagement to address vehicle-grid integration issues and impacts. We look forward to continuing efforts in this process moving forward.

Respectfully,

/s/

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