BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Consider Alternative-Fueled Vehicle Programs, Tariffs, and Policies.	Rulemaking R.13-11-007 (Filed November 14, 2013)

REPLY COMMENTS OF EMETER, A SIEMENS BUSINESS ON ASSIGNED COMMISSIONER'S RULING SEEKING COMMENT ON VEHICLE-GRID INTEGRATION COMMUNICATION PROTOCOL WORKING GROUP ENERGY DIVISION STAFF REPORT

CHRIS KING
Global Chief Policy Officer
Siemens Digital Grid
4000 E. Third Ave., Suite 400
Foster City, CA 94404
(510) 435-5189
chris_king@siemens.com

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In accordance with Assigned Commissioner Carla Peterman's Ruling (Ruling) issued on February 23, 2018, eMeter, A Siemens Business (hereafter referred to as Siemens), submits these reply comments on the California Public Utilities Commission (Commission) Energy Division's Staff Report on the Vehicle-Grid Integration (VGI) Communication Protocol Working Group (Staff Report).

Siemens received opening comments from the Joint Parties, ORA, Kitu Systems, ChargePoint, Greenlots, Tesla, and, jointly, Volkswagen, Audi, Porsche, Daimler (Mercedes-Benz), Lucid Motors, and Iotecha (together, "Joint OEMs").

1. INTRODUCTION

Our reply comments remain within the principles we articulated in our Opening Comments. Those principles call for the Commission to refrain from mandating adoption of any standards, which is generally consistent with the Staff Report (except for Table 4, discussed below). We respectfully suggest that the Commission:

a. as the Joint Parties suggest, focus on the most important use cases: "The CPUC's primary objective going forward should be to define what VGI grid services and use cases are the most valued"[1],

b. focus on the use cases in which the Commission has jurisdiction (i.e., equipment procured or funded by the utilities),

c. identify promising standards,

d. promote the use of standards for any publicly-funded EV charging infrastructure,

e. endorse standards adopted via open and transparent standards development processes, and

f. permit the utilities to jointly select the specific standards to implement.

Below, we address specific comments made by the parties. Please note that Siemens retains the right to disagree with any comments that we do not address explicitly.

2. EDITS RECOMMENDED BY THE JOINT PARTIES

The Joint Parties recommend a number of edits to the Staff Report.[2] Siemens agrees with the vast majority of these recommended edits. However, Siemens respectfully suggests the following regarding some of the Joint Parties' recommendations:

a. **Edits to second paragraph of Section 4**: we agree with the Joint Parties that "Having other alternatives is not a significant reason for not selecting IEEE2030.5."[3] However, the paragraph contains important, factual information that should be

[1] - March 21, 2018 Opening Comments of the Joint Parties on Assigned Commissioner's Ruling Seeking Comment on Vehicle-Grid Integration Communication Protocol Working Group Energy Division Staff Report, at 4.
[2] - Ibid, beginning at page 5.
[3] - Ibid at 6.

retained. Rather than delete the paragraph, as proposed by the Joint Parties, we suggest replacing it with the edited version below that retains the factual content but deletes the recommendation:

> *The Working Group's documentation suggest that IEEE 2030.5 supports most of the use cases identified by stakeholders and can complete the communication end-to-end from PFE to EV without the need for an additional communication protocol. At the same time, other protocols have been developed to communicate specialized information between specific actors. For example, a utility could use OpenADR to communicate real-time pricing to a network service provider, which then uses OCPP to communicate a price schedule to the EVSE, which uses ISO 15118 to conform a charge rate that is consistent with a driver's preferences, which were communicated to the EVSE by the EVBS. In addition, vehicle telematics may also be capable of supporting communication between a PFE and EVBS using a standard protocol.*

b. **Explanation of why a communications protocol should not be mandated**: Siemens agrees with the Joint Parties' proposed additional reasons.

c. **Figure 2**: Siemens agrees with the Joint Parties' proposed changes.

d. **Table 4**: Siemens believes the Joint Parties' proposed changes do not resolve major problems with Table 4 and we strongly object to the proposed "Minimum Hardware Functional Requirements." For the reasons below, we suggest:

i. Change the title from "Minimum Hardware Functional Requirements" to "Suggested Hardware Functionality"

ii. Change the heading "Requirement Description" to "Functionality Description"

iii. Change the heading "Recommended EVSE Hardware Functionality/Physical Layer" to "Potential EVSE Hardware Functionality/Physical Layer"

iv. Delete the last row specifying a requirement for a physical layer for EVSE to EV communications, because it is unnecessary and not cost-effective

First, specifying these requirements directly contradicts the recommendations of all of the parties that additional work is necessary.[4] This statement applies equally to the proposed hardware "requirements" in Table 4, and in particular to the proposed requirement to "Incorporate PLC communications module compliant for HomePlug GreenPHY specifications."[5]

Second, the proposed PLC module requirement is premature, adding significant cost without justification. Based on our global experience of delivering hardware for approximately 100,000 Level 2 chargers we estimate such a module would increase the cost of those chargers from 18 percent to over 100 percent, depending on purchase quantities and utility program specifications. A key driver of this cost increase is the need

[4] - Ibid at 7. Also see: Comments of Volkswagen, Audi, Porsche, Daimler (Mercedes-Benz), Lucid Motors, and Iotecha on Vehicle-Grid Integration Communication Protocol Working Group Energy Division Staff Report at 3; Opening Comments of Greenlots on Assigned Commissioner's Ruling Seeking Comment on Vehicle-Grid Integration Communication Protocol Working Group Energy Division Staff Report at 4.; Opening Comments of ChargePoint on Assigned Commissioner's Ruling Seeking Comment on Vehicle-Grid Integration Communication Protocol Working Group Energy Division Staff Report at 2; Opening Comments of Tesla on Assigned Commissioner's Ruling Seeking Comment on Vehicle-Grid Integration Communication Protocol Working Group Energy Division Staff Report at 3; and Comments of the Office of Ratepayer Advocates on the Assigned Commissioner's Ruling Seeking Comment on Vehicle-Grid Integration Communication Protocol Working Group Energy Division Staff Report at 3.

[5] - Ibid at 10.

to develop, test, certify, and manufacture a customized, California-IOU specific product for which no other markets exist at this time. By adopting requirement for the PLC module **the Commission would force ratepayers to pay for functionality for which the benefits have not been proven, nor have they been quantified**. As ORA points out, "the Working Group did not have enough time or information to evaluate costs and benefits."[6] In other words, there have been no economic analyses justifying the significant cost increase and future cost burdens resulting from adopting the PLC mandate. **Moreover, based on our global experience, the vast majority of VGI benefits can be captured for AC chargers without a PLC module – specifically the V1G benefits that were the scope of the Staff Report**. As the Joint Parties note, "There are a variety of ways that VGI can be executed, including methods that accomplish VGI without a hardware component in the charging station."[7] **Importantly, there has been no demand in the global AC charger market for such chargers, indicating that purchasers perceive minimal to no value in such functionality**. This is a robust market, with products available from over a dozen manufacturers and hundreds of thousands of units shipped. We are not aware of any Level 2 charger sold outside of very small pilot projects that has PLC functionality.

e. **Cybersecurity**: Siemens agrees with the Joint Parties' proposal for additional consideration of this issue.

f. **Table 5:** Siemens agrees with the Joint Parties that "Recommended" should be removed from the heading. We prefer using the heading "Available Protocols", because it is unclear what "Supportable" (proposed by the Joint Parties) means.

[6] - ORA comments at 4.
[7] - Joint Parties' comments at 4.

g. **EVSE standards for privately-accessible locations (e.g. home charging):** we agree with the Joint Parties that EVSEs in these locations should be excluded from EVSE hardware requirements, because we oppose having EVSE hardware requirements (as opposed to incentives and recommendations) in general. There are significant benefits from supporting and promoting standards for all EVSE, including privately-accessible locations. The logic for having open standards – which reduce costs and the risk of stranded assets – applies in all locations.

- **EVSEs becoming stranded assets**: the Joint Parties suggest a potential situation where "the EVSE that meets the requirements in Table 4 becomes a stranded asset."[8] We believe the comments were referring NOT to the entire value of the EVSE, which is still the required electrical connection to the EV. Instead, we believe the Joint Parties were referring to the Table 4 elements that could become UNUSED should certain future scenarios occur (e.g. the use of telematics for VGI or continued use of current practices that already enable VGI without the Table 4 mandates). Those Table 4 mandates would raise the cost of EVSE significantly, as noted above. Should the scenarios mentioned by the Joint Parties, or should the market continue to obtain VGI benefits utilizing approaches already in use today, the entire supplemental cost resulting from imposing Table 4 mandates on ratepayer-funded EVSEs could become stranded. Siemens agrees.

[8] - Ibid at 23.

3. THERE WAS NO CONSENSUS ON THE HARDWARE REQUIREMENTS

The Joint Parties state that the Working Group reached consensus on the hardware requirements (Table 4).[9] **Siemens strenuously disagrees that "consensus" was reached, particularly regarding the PLC requirement in the hardware requirements**. There was no formal voting process, and input to the Working Group consisted of an informal mix of participation in meetings and written comments. Given this loosely defined nature of input to the Working Group, it is difficult to define "consensus" for the group. In any case, **Siemens disagrees with the hardware requirements for the compelling reasons described above regarding lack of cost-effectiveness and lack of need for the EV-EVSE communications link for Level 2 chargers to capture VGI benefits.**

4. SIEMENS SUPPORTS MAINTAINING THE OPTION OF IEEE 2030.5

The Joint OEMs suggest deleting IEEE 2030.5 from the Table 5, row 3 list of "Recommended Protocols Currently Available."[10] Siemens supports open standards, of which IEEE 2030.5 is one. The Joint OEMs provide good reasons to include ISO/IEC15118, reasons with which we agree. However, these are not reasons to exclude IEEE 2030.5, which many members of the Working Group find to have excellent promise. Accordingly, Siemens recommends keeping IEEE 2030.5 in Table 5, row 3.[11]

5. CONCLUSION

We thank the Staff and the Commission for the opportunity to provide these comments and for their efforts to move forward this deliberative process.

[9] - Ibid at 14.
[10] - Joint OEMs' comments at 4.
[11] - Joint Parties' comments at 13.

Respectfully submitted,

/s/ Chris S. King

Chris King
Global Chief Policy Officer
Siemens Digital Grid
Tel: (510) 435-5189
E-mail: chris_king@siemens.com

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