

**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
(Filed February 23, 2018)

**MARCH 21, 2018 OPENING COMMENTS OF KITU SYSTEMS ON ASSIGNED
COMMISSIONER’S RULING SEEKING COMMENT ON VEHICLE-INTEGRATION
COMMUNICATION PROTOCOL WORKING GROUP ENERGY DIVISION STAFF
REPORT**

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In accordance with the February 23, 2018 Assigned Commissioner’s Ruling (“ACR”) Seeking Comment on Vehicle-Grid Integration (“VGI”) Communication Protocol Working Group, Energy Efficiency Division Staff Report in the above-captioned proceeding, the Kitu Systems hereby submit these comments.

1. **INTRODUCTION**

In September 2016, the CPUC provided the utilities with guidance on what types of programs the utilities should propose pursuant to the Clean Energy and Pollution Reduction Act of 2015, SB 350 (De León).¹ The guidance directed the utilities to address in their applications how they would comply with the International Organization for Standardization and International Electrotechnical Commission’s (“ISO/IEC”) 15118 Vehicle-to-Grid Communications Protocol in the transportation electrification infrastructure they were proposing to install, or explain what alternative approaches they proposed to meet VGI policy objectives.

Following various workshops, CPUC staff proposed developing a Working Group to evaluate the technical details of existing communication protocols and assess which, if any, might be appropriate for the CPUC to require to be used in ratepayer-supported infrastructure. The formation of this Working Group was later formalized in an April 13, 2017 Scoping Ruling of the Assigned Commissioner and Administrative Law Judges in Application 17-01-020 et al. Energy Division staff worked with staff from the California Energy Commission (“CEC”), California Air Resource Board (“CARB”), the California Independent System Operator (“CAISO”), and the Governor’s Office of Business and Economic Development to convene a Working Group comprised of 130 stakeholders interested in the state’s pursuit of bringing VGI to market economically and at scale. The Working Group met from April through December 2017.

On February 23, 2018, the Assigned Commissioner’s Ruling and Staff Report was issued, detailing the Working Group process and key deliverables, and included Energy Division

¹ Senate Bill 350: Clean Energy and Pollution Reduction Act (De León, Chapter 547, Statutes of 2015), https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350.

staff recommendations for hardware functionality requirements and discussion of communication protocols. The recommended hardware requirements are proposed to apply to utility investments that support Level 2, AC, conductive, multi-user electric vehicle charging equipment. The Assigned Commissioner's Ruling requests comments on any aspect of the Staff Report, as well as specific questions addressed below.²

Kitu Systems, participated in Vehicle-Grid Integration Communication Protocol Working Group meetings, contributed to process and deliverables definition, sub-workgroup leadership, and provided use cases and technical expertise.

² Staff Report, p. 5.

2. DISCUSSION

1. Overall feedback on Staff Report

- **Does the Staff Report accurately reflect Working Group discussions?**

- (1) Prior to the in-person Working Group meeting on November 14th Mike Bourton of Kitu Systems provided stakeholder comments on Deliverable 1.3 draft report to the effect that IEEE2030.5 complied with all of the VGI requirements (<http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442455315>). Mike Bourton presented these comments at the meeting (<http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442455443>). These comments were not included in Deliverable 1.3 and are also not reflected in the Staff Report.

As a side note, the latest version of IEEE2030.5 has recently completed committee ballot and is proceeding to RevCom for publication, which is expected end of April 2018. The **balloted** version does include all the VGI requirements as outlined in the comments.

- (2) The second paragraph in Section 4 of the Staff Report discussing the communication protocols that functional requirements support should therefore be edited to read as follows:

“The Working Group’s documentation suggest that IEEE 2030.5 supports ~~most~~ all 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. The Working Group’s documentation also suggest that both telematics and IEEE 2030.1.1 can “support-in-combination” all of the functional requirements in Table 3, and that IEEE 2030.5 directly supports ~~most~~ all of the functional requirements identified by stakeholders and can complete the communication end-to-end from PFE to EV without the need for an additional communication protocol. The IEEE2030.5-2018 version will allow IEEE 2030.5 to directly support ~~most~~ all of the functional requirements.”

- **Are there any key stakeholder comments that are missing from or misrepresented in the Staff Report?**

- (1) The report concludes that, “Based on working group results, Energy Division Staff determined it is too early to require the IOUs to implement a single existing protocol or combination of protocols to best enable widespread, economic VGI.”. However, the deliverables (Deliverable 1.1, 1.2 and 1.3) of the Working Group address use cases, protocol requirements and mapping of existing protocols. These results do not support the conclusion of the Staff Report that it is too early since the IEEE2030.5 protocol meets all the requirements and is ready for implementation. Furthermore, no other Working Group result supports the determination that IEEE2030.5 would not “enable widespread, economic VGI”. No economic analysis of the benefits of selecting a single protocol or conversely, of the effects of not making a determination at this time have been provided in the Working Group. Therefore, the current Energy Division Staff determination does not appear to be based on Working Group results.

(2) The Staff Report also states that “stakeholders were unable to reach consensus to support selecting IEEE2030.5 as a required protocol for several reasons”. One of the stated reasons is the existence of alternative protocols supporting communications between “specific actors”. This is not a valid reason since none of these alternative protocols meet all the requirements, as evidenced in the results of the Working Group. The second reason is that a particular pathway (“telematics”) could support communication between certain “specific actors” even without the IEEE2030.5 protocol. This reason also does not justify not selecting IEEE2030.5 as the “telematics” pathway does support IEEE 2030.5 as the only protocol that meets all the use cases and requirements.

- **Are all of the Deliverables referenced in the Staff Report,⁹ such as the VGI Glossary, complete and accurate based on Working Group discussions and findings?**

No Comments

2. Scope of electric vehicle service equipment (EVSE) hardware performance requirements

- **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?**

In the current proposal, adding complexity to single-user EVSEs is not appropriate. However, adding support for a single protocol such as

IEEE2030.5 would be not a burden as the EVSE would act as a simple bridge with no additional security and upgradeability requirements.

- **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?**

In the current proposal, adding complexity to workplace or “fleet” EVSEs is not appropriate. However, adding support for a single protocol such as IEEE2030.5 would be not a burden and instead provide capabilities for future utility programs and other customer benefits.

- **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?**

No Comments

- (1) If so, should the scope of the hardware requirements be extended to single-user residential or private workplace EVSE?
- (2) 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

3. Identifying future VGI work

- **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?**

No Comments

- **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?**

No Comments

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

No Comments