



November 8, 2017

California Public Utilities Commission  
California Energy Commission  
California Air Resources Board  
California Independent System Operator  
California Governor's Office of Business & Economic Development

Re: October 27 Straw Proposal

Dear Agency, ISO, and GO-Biz Staff:

Greenlots offers the following comments in response to questions posed during the October 30 VGI Working Group meeting around the agency Straw Proposal.

*Would requiring the hardware with the previous criteria encourage scaled EVSP and OEM charging investments that provide VGI capability?*

Greenlots has seen minimal charging investments made by EVSPs and OEMs. While Tesla has made well known investments in this space, and Greenlots has helped deploy charging infrastructure with other OEM partners, including Nissan, BMW, and Kia, there has been a very modest investment thus far. Likewise, EVSPs have made minimal infrastructure investments, with the majority of past and future investments being driven by legal settlements, led by EVgo and Electrify America.

Greenlots sees a much more sustainable infrastructure investment path through electric utilities. With the above question in mind, Greenlots sees utilities, the Public Utilities Commission, ratepayers, and other stakeholders being much more confident in utility charging investments that include the described hardware criteria. Utilities and other investors (e.g. Electrify America) looking at large scale charging investments have sought best in market functionality and communications capabilities. While thus far this has been primarily focused around OCPP and OpenADR, an expanded set of hardware communications capabilities will increase confidence in the future relevance and therefore minimization of risk of these investments. That said, until there are widely available hardware options that can accommodate all of these criteria, there may be a slowdown or bottleneck in deployment.

*How could hardware change over time, given design innovations and new use cases?*

Greenlots expects a continued commoditization of charging hardware. That is, as charging hardware sales and manufacturing scales, there will be more and more options available, with increasing downward pressure on prices. That said, if more and more is expected of chargers, the additional costs associated with that functionality may slow the downward price pressure, or further squeeze hardware manufacturers' profitability.

A future trend will be for charging hardware to be simpler and simpler in terms of form and cost as more functionality and smarts transitions to the software operating systems and indeed, the vehicles themselves.

*Do today's commercial EVSEs meet the proposed hardware functions?*

There are few if any commercial EVSEs that meet all of the proposed hardware functions and communications methodologies. There are, and Greenlots provides many hardware options that support both OCPP and OpenADR. Many of our hardware partners are thinking about or are in the process of adding 15118 functionality.

*Can VGI software be implemented within the proposed hardware?*

Yes, VGI software can be implemented or integrated with the proposed hardware/hardware functionality. Greenlots and others have implemented varying degrees of these communications methodologies and functionalities.

*Will the hardware proposal assist in vehicle/EVSE/utility connectivity across California?*

Yes. It remains to be seen what the preferred communications methodologies will be for each utility/OEM, etc., but an umbrella or catch-all approach is a reasonable strategy to provide flexibility for future business strategy.

*How can utilities and regulators best ensure that EVSEs which include the proposed hardware are functional with grid-integrated vehicle charging?*

At a fundamental level, it is critical that a certification or compliancy mechanism be put in place. While we cannot at this time recommend regulation of vehicle communications through the Air Resources Board, at a minimum, it will be necessary to keep an open dialogue with automakers as they bring more advanced vehicles into the California market.

Greenlots looks forward to the next steps in this process, and is available to answer any questions that arise.

Sincerely,



Thomas Ashley  
Vice President, Policy  
Greenlots