

## DOCKETED

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**OEM Consolidated Response to CEC VGI Communications Standard Workshop 7  
Dec 2016**

*Additional submitted attachment is included below.*

## OEM Consolidated Response:

### CEC VGI Communications Standard Workshop 7 Dec 2016

**Represented Automakers: BMW, Ford, GM, Nissan, Toyota, Tesla, Fiat-Chrysler, Honda**

**The Represented Automakers strongly contend that it is unnecessary for California to pick a single exclusive standard for VGI communication.**

BMW specifically, in its May 18, 2016 opening comments and supported by Ford, urged the Commission to not select a single communication standard for the SB 350 investments, but instead suggested the Commission encourage innovation in smart charging by “remaining open to innovative communication pathways that offer benefits to customers and the grid.”<sup>1</sup> The BMW Opening Comments directly addressed this issue of whether a single standard is appropriate at this time:

*“While BMW supports the development efforts for [the 15118] standard, at this time we do not believe that it is appropriate for the Commission to endorse this standard, or any other communication standard, as the exclusive way for conducting VGI communication. Additional research and implementation experience is required to understand the effectiveness of a single standard in this area. It is more appropriate for the utilities to pursue multiple communication avenues that do not limit or direct the technology in ways that might prove to be counterproductive. While a single standard may offer the best benefits in the long-term, it is not clear that a single standard is necessary to support broad scale adoption of vehicle-grid integration at this time.”<sup>2</sup>*

Additionally, without defined use cases it is impossible to determine if any standard is a good fit from a performance, cost, and time-to-market perspective.

**The represented Automakers strongly believe that a vehicle telematics communication system is a valuable and necessary augmentation to any VGI communication system.**

The Automakers believe that using the existing vehicle telematics is a communication option that avoids additional infrastructure costs and stranded assets in implementing VGI and provides a quick path toward initiating the VGI market. The BMW ChargeForward pilot, which BMW is currently conducting with PG&E, has demonstrated that vehicle telematics is a viable method for accomplishing vehicle-grid integration. The BMW-PG&E pilot does not require any communication with a charging station – demand response events are communicated via the OpenADR standard through the BMW software system to the vehicle and the driver, using the on-board vehicle telematics system to receive messages and manage the vehicle’s charging. This pilot requires no modifications to the vehicle or a host site to participate, which reduces program costs.

Telematics based VGI also addresses legacy EVSEs in homes and workplaces, and non-networked EVSEs in areas that are not part of a VGI program that is under CPUC control (California Municipal Utilities, not to mention other states).

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<sup>1</sup> BMW of North America, LLC May 18, 2016 Opening Comments to Amended Scoping Memo and Ruling of the Assigned Commissioner and Administrative Law Judge for Rulemaking 13-11-007 at page 5.

<sup>2</sup> BMW of North America, LLC May 18, 2016 Opening Comments to Amended Scoping Memo and Ruling of the Assigned Commissioner and Administrative Law Judge for Rulemaking 13-11-007 at page 6.

**The Represented Automakers strongly believe that barriers to implementation of VGI are value-based, not standards-based.**

The primary obstacle to scaling smart charging in California is not the need for the endorsement of 15118 as the smart charging standard, but rather the uncertainty around the grid value of smart charging and lack of clear contracting opportunities to access this value. The California VGI Roadmap<sup>3</sup> states the barriers to VGI are:

- *the value of VGI is not clear*
- *VGI-eligible products, programs, and enabling policies must be defined and implemented; and*
- *technical functionality must be improved and technical standards and specifications must be developed and coordinated*

And further states *“To spur investment in VGI and to promote customer adoption, the VGI value proposition must be understood and the benefits must outweigh the costs across the entire value chain”*. The predominant conclusion related in the California VGI Roadmap as stakeholder feedback is that *“Market participation, policies and settlement rules need to be defined. VGI cannot thrive under a “one size fits all” approach. Customized and balanced solutions and products must be allowed”*. Additionally, the Olivine Report<sup>4</sup> provided the following which also specified the lack of revenues as the number one barrier for DER:

*“By far the number one barrier to entry for direct participation of demand response in the ISO, after completion of Electric Rule 24, is the lack of revenues available to resource owners from the wholesale market. Outside of the development of a long-term capacity market, the clearest approach to address this is counting bid-in demand response towards resource adequacy.”*

This was a topic of significance discussed at the Third Annual California Multi-Agency Update on Vehicle-Grid Integration Research Workshop 12 Dec 2016. It was related that depending on the market application (i.e. ancillary services) there may be limited revenue versus the cost for VGI, especially based on the current CAISO energy market pricing structure, and that without access to resource adequacy long term procurement programs it would be difficult to maintain a sustainable aggregation business.

We suggest that the CEC and the CPUC focus its efforts in addressing these VGI value questions/issues, rather than picking interoperability standards that impose a business model on smart charging; and risk limiting opportunities for innovation by stakeholders in the vehicle charging value chain.

**To move rapidly, the Commission should modify the CPUC Energy Storage Procurement Plan to allow for controlled charging (V1G) as an eligible storage resource to be procured by the utilities through contracts with OEMs and Aggregators offering V1G services.** This would allow V1G to have a clear basis for utility investment, spurring innovation and stakeholder collaboration through utility issued Request for Proposals (RFPs) for contractual managed charging. We believe this approach would lead to immediate scale in VGI and would provide parties with the necessary catalyst and incentive to address the business model challenges that currently face VGI. This would provide significant learning experiences to drive scaling in California and would accelerate similar investments in other parts of the world. The Commission can encourage broad participation in these RFPs by requiring multiple winning

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<sup>3</sup> California Vehicle-Grid Integration (VGI) Roadmap: Enabling vehicle-based grid services, February 2014

<sup>4</sup> Distributed Energy Resources Integration Summarizing the Challenges and Barriers; Robert W. Anderson Spence Gerber Elizabeth Reid; January 24, 2014

bids. We believe that SB 350 provides the justification for this program and relieves the commission of an obligation to do a detailed cost-benefits analysis to support this procurement. As an alternative pathway to the storage mandate, the Commission could request that the utilities issue RFPs specifically for grid services from managed charging.

**We support the implementation of a working group to explore VGI communication standards.**

At the December 7<sup>th</sup> workshop, CPUC staff suggested the implementation of a working group to explore the need for adopting specific VGI communication standards. We strongly support this concept. We believe that this working group can work quickly to provide the Commission with a technical understanding of the 15118 protocol and telematics as communication pathways and how they relate to VGI. We specifically urge the Commission to task the working group with the following question: “Should the Commission mandate a VGI standard?” A necessary step to answering this question will be to define specific use cases and estimating their value to the grid.

This working group can be modeled on the Smart Inverter Working Group. We are supportive of Frances Cleveland leading the VGI Standards Working Group, especially based on the successful outcomes from the Smart Inverter Working Group. To meet the time constraint for the working group of 6 to 9 months, the leader of the working group will need to have direct access to technical and administrative support which could be provided by EPRI. EPRI, in their proposal response to CEC GFO 16-303 Titled “Smart and Efficient Charging Enabled by Transportation Electrification SB350 and CPUC R.13-11-007 through End to End Secure, Open and Scalable Infrastructure” provides a framework and deliverables for the working group process. The working group can happen simultaneously with utility VGI RFPs – it is not necessary to wait to issue RFPs while this work is ongoing.

The VGI Standards Evaluation Working Group is necessary for the stakeholders and the representatives of the cognizant California agencies to understand the standards, application for VGI, and readiness of the standard to expedite VGI commercial implementation. The evaluation should address the 11 VGI Principles defined in Appendix B of the CPUC Scoping Memo and additionally the following recommended criteria:

- Consistency with Rule 21 SIWG DER Integration Principles, avoiding new silos for PEVs as DERs
- Meets functional and safety requirements for integrating EVs as a behind the meter DER asset
- Conformance to NISTIR 7628 Cybersecurity Guidelines for Smart Grid communications protocols
- Consistency across Medium and Heavy Duty Vehicle Segments RE: High Power Charging
- Flexibility to address dynamic data exchange and functional requirements from multiple stakeholders/actors - Between and amongst primary and secondary actors
- Ability to foster 3<sup>rd</sup> party innovation, customer choice, and competitive marketplace
- Reduce up front and end use costs to site hosts and end customers

The standards working group should have a singular purpose to equitably address all VGI standards against the criteria and should not be established as a parallel process comparing ISO/IEC 15118 and all other alternatives. There needs to be collective collaboration amongst all viable stakeholders, IOUs, OEMs, and cognizant California agencies to derive a clear understanding of the content and functionality of the standards and application to the VGI grid service use cases with emphasis on driver value, long term sustainability, innovation, and competitiveness. The technology focus should be on the application

of standards within a viable open architecture that leverages internet protocols and technologies to allow exponential growth in VGI applications into the future.

Standards are never “finished,” or “complete.” They are constantly modified and improved with the results of learning and experience and changes in technology. Through its activity, the working group should identify gaps and opportunities for improvement within the existing standards, to give the standards making groups direction for future improvement such that the standards meet the needs of the State of California and California’s Plug-In Vehicle Drivers.