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<b>Project Title:</b>	Vehicle Grid Integration Roadmap Update
<b>TN #:</b>	224885
<b>Document Title:</b>	Joint Party Comments Re VGI Roadmap Webinar
<b>Description:</b>	Joint Parties: California Electric Transportation Coalition, Southern California Edison, Pacific Gas & Electric Company, Fiat Chrysler Automobiles, American Honda Motor Co., Inc., San Diego Gas & Electric Company, Toyota Motor North America, Inc., Electric Power Research Institute, Nissan Technical Center North America, General Motors, LLC, Sacramento Municipal Utility District, BMW of North America, LLC, Southern California Public Power Authority, Kitu Systems, Inc., Los Angeles Department of Water & Power and Ford Motor Company
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*Comment Received From: Hannah Goldsmith  
Submitted On: 10/4/2018  
Docket Number: 18-MISC-04*

## **Joint Party Comments Re VGI Roadmap Webinar**

Please upload the attached version instead of the previous joint-party letter. This one has the correct date. Thank you!

*Additional submitted attachment is included below.*

October 4, 2018

California Energy Commission  
Docket Office, MS-4  
1516 Ninth Street  
Sacramento, CA 95814  
**Docket No: 18-MISC-04**  
**Project Title: Vehicle Grid Integration Roadmap Update**

*Submitted via online docket*

**Re: Staff Webinar on the California Vehicle-Grid Integration Roadmap Update**

The joint parties, listed in the signatory section at the end of this letter, appreciate the opportunity to provide feedback on the California Energy Commission (CEC) Staff Webinar on the California Vehicle-Grid Integration (VGI) Roadmap Update, held on September 6, 2018 in partnership with the California Independent System Operator, California Public Utilities Commission, and the California Air Resources Board.<sup>1</sup>

We support the efforts of the CEC to promote the adoption of zero-emission vehicles (ZEVs) and equipment. Although California is leading the nation in ZEV adoption, our state still has a long way to go to reach the goals in the new Governor's Executive Order B-48-18: 5 million ZEVs on California roads by 2030 and specified levels of ZEV fueling infrastructure by 2025 to support the transition to these vehicles. In addition, the state must implement SB 1275 (De León) [Chapter 530, Statutes of 2014] and SB 1204 (Lara) [Chapter 524, Statutes of 2014], which set targets for the deployment of 1 million zero- and near-zero-emission vehicles by 2023, access to these vehicles by disadvantaged and low- and moderate-income communities, and deployment of zero- and near-zero-emission medium- and heavy-duty vehicle technologies. We appreciate the CEC's efforts to coordinate appropriate agencies and update California's VGI Roadmap, in order to achieve effective integration of electric vehicles (EVs) with the electrical grid, to determine the value of grid services that can be offered by EVs, and to promote grid stability and reliability while meeting drivers' mobility needs.

In addition to the California Electric Transportation Coalition (CalETC) comments on the California Vehicle-Grid Integration Roadmap Matrix of Goals and Problems/Issues (attachment 1), we submit for your consideration the following additional comments on the VGI Roadmap Update:

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<sup>1</sup> This is a revised version of the letter submitted by the California Electric Transportation Coalition (CalETC) on September 21, 2018. The signatories to this letter are endorsing the content of the letter only, and not the attachments. The attachments are submitted solely on behalf of CalETC, and remain unchanged from CalETC's prior submission.

**I. We support the emphasis on determining the value of VGI benefits and costs.**

During the California Public Utilities Commission (CPUC)-led VGI Communications Protocol Working Group (VGIWG), we provided comments highlighting that the most important part of the VGI path forward is to understand the value of VGI benefits, as well as the costs. We recommend that this be done through funded studies and large-scale demonstrations. We are pleased to see, in the CEC's initial presentation on the VGI Roadmap Update, that staff are planning to include VGI costs and benefits in the Roadmap Update. We have provided detailed feedback on this topic in the Roadmap Matrix (attachment 1). In addition, attachment 2 documents prior comments on this and other VGI-related issues. Generally, we see value in finishing up Tasks 2 & 3 from the VGIWG effort (identifying costs and benefits, as well as identifying and valuing policy actions).<sup>2</sup>

We encourage the CEC to include studies on VGI benefits and costs in the VGI Roadmap Update's consideration of VGI value. We note that the answers or solutions to these key issues will likely differ for different use cases and are dependent on whether the solution is near- or long-term. Please also see attachment 3, the consolidated benefits framework from the VGIWG, which contains prior work that started to address the value of VGI benefits and costs.<sup>3</sup> We are pleased to see many of these value themes included or alluded to in the Matrix.

**II. We recommend the VGI Roadmap Update encompass all aspects and use-cases of EV integration with the grid, and not de-emphasize residential charging.**

The Vehicle-Grid Integration Roadmap - Kickoff Webinar document, on page 7, states that the scope of this VGI Roadmap is "*transportation electrification broadly, with emphasis on actions for integrating fleet, workplace, and public charging.*" We are concerned that this statement may signify an intention to de-emphasize actions for integrating *residential* charging. Given that more than 70% of light-duty vehicle charging today is residential, we see residential charging as a key component of VGI, and therefore request that it be included, and not de-emphasized, in this VGI Roadmap Update. In addition, residential charging is important to include in the Roadmap Update due to the anticipated timing of grid impacts caused by the electricity load from residential charging and the potential coincidence with electric system needs.

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<sup>2</sup> See June 6th version of VGIWG workplan which had a longer version of task 3, including but not limited to: identify pilot or deployment recommendations to enable VGI use cases that use rate designs, financial incentives, procurement targets, customer education, valuation frameworks or others. Summarize stakeholder recommendations for utility, market, or policy actions to more appropriately value, procure, or operate VGI resources and use cases.

<sup>3</sup> The VGIWG stakeholders examined over 10 existing frameworks and combined them into a consolidated framework (which also helped with the VGIWG glossary) and identified who needs the benefit, what the need is, what meets the need, and how the need is met and measured.

More broadly, we strongly recommend that the scope of the VGI Roadmap Update encompass all aspects and use-cases of EV integration into the grid, including, but not limited to, all:

- User sectors: residential, commercial (e.g., fleet, workplace, and public), and ride-share;
- Types (managed): V1G and V2G, including V2B and V2H;
- Applications: customer load management, distribution and transmission reliability services, wholesale energy and resource adequacy services;
- Control approaches: indirect control (e.g., price signaling), direct control (e.g., dispatching);<sup>4</sup>
- VGI communication pathways;<sup>5</sup>
- Vehicle classes: LDV, MDV, and HDV, including non-road classes; and
- Charging levels: AC (L1 and L2) and DC.<sup>6</sup>

Understanding and prioritizing the scope of grid impact issues in the different charging market sectors, and for the different types of vehicles, is an important first step to frame the potential of VGI in the different sectors. In addition, we see a need to evaluate customer acceptance and the user experience as related to these use cases. User preferences should be analyzed so that VGI-related programs are not designed in a way that could hurt the EV driver's experience or dampen EV uptake.

### **III. We support the CEC's stated objectives to (1) prioritize actions to overcome barriers to advancing VGI and (2) leverage agency and stakeholder relationships.**

We support the objectives to develop and prioritize actions assigned to responsible entities that are necessary to overcome the highest-priority barriers to advancing VGI; and to leverage existing interagency relationships and processes, and foster stakeholder participation. We recommend the CEC identify, as part of the VGI Roadmap Update efforts, potential resources or opportunities for funding action items and assignments, like existing research and development funding. As stated above, we see as a critical action item: funded studies and large-scale demonstrations to determine and validate the value of VGI benefits and costs.

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<sup>4</sup> As included in the Roadmap Matrix, and noted in our comments during the VGIWG process, we believe that voluntary indirect control measures or policies present an important opportunity for managing EV charging. These measures may include TOU rate design, demand charge design, Low Carbon Fuel Standard program design, storage mandate design, design of rebates to encourage certain technologies or outcomes, and other options.

<sup>5</sup> Including, but not limited to, communication to the charger or directly to the EV, such as through telematics.

<sup>6</sup> In order to be inclusive and appropriately consider all aspects and use-cases of EV integration into the grid, we are including DC charging in this list. However, due to EV driver needs and expectations, we recognize that the use case for DC Fast Charging may not present an ideal scenario for all VGI functions. We expect the distinctions between the use cases will help inform the solutions and prioritizations portions of the Roadmap Update.

Regarding leveraging interagency and stakeholder relationships, we recommend a collaborative, on-going effort with other related CEC and CPUC proceedings, and stakeholders including researchers; local government, air district, and utility charging infrastructure program administrators; vehicle manufacturers, and others to share data about charging-infrastructure programs. This recommended effort would incorporate and not duplicate the existing programs and standards already being implemented under guidance from the regulatory agencies. Given that charging-station and EV data is being collected in multiple forums, we support this recommendation so that experts can be brought together to compare and understand existing data, and determine what gaps need to be addressed. Such an on-going effort would help address many of the issues regarding data, identified in the California Vehicle-Grid Integration Roadmap Matrix of Goals and Problems/Issues. As we mentioned in prior letters, we support a voluntary effort as the best way to address the data needs of the state agencies, utilities, and other stakeholders, rather than a mandate from the CEC.

Related to interagency coordination, we support the CEC including other relevant state agencies in the VGI Roadmap Update process, as described during the webinar. In addition to California Air Resources Board (CARB) staff working on Open Access, we recommend the CEC include CARB Low Carbon Fuel Standard (LCFS) staff in the working group, as the revised LCFS program presents a great opportunity for advancing smart charging. We also suggest that the CEC include the Division of Measurement Standards (DMS), as this agency is currently determining the appropriate action to take regarding charging station labeling and accuracy standards. We see overlap between the Roadmap Update, CARB's Open Access proceeding, and the DMS proceeding because all of these processes will likely affect charging station technology and cost.

Additionally, we see value in engaging representatives from disadvantaged communities or community-based organizations. We support the goal statement in the matrix on prioritizing and tracking the benefits of managed EV charging to low-income consumers and disadvantaged communities.

#### **IV. We support the emphasis on cybersecurity and privacy for the VGI Roadmap Update.**

As included in our comments on the Roadmap Matrix (attachment 1), we believe addressing cybersecurity and privacy is critical for VGI solutions that involve data transfer and management. Cybersecurity for end-to-end (EV to the utility or aggregator back-office) communications is and will be a critical differentiator among the various alternative mechanisms for data transport. Discussions and decisions about VGI must account for cybersecurity and privacy.

**V. We recommend the CEC hold multiple workshops on the VGI Roadmap Update and release the Oct. 29-30 Workshop Discussion Document at least 2 weeks before the Workshop.**

During the VGI Roadmap Update webinar, CEC staff mentioned that there will be workshops on the Roadmap Update on Oct. 29th and 30th. Additional opportunities to engage and provide feedback would be helpful to achieving a useful and successful VGI Roadmap Update. We recommend the CEC hold additional workshops following the release of the Draft Roadmap Update. We also anticipate that there may need to be additional workshops following the Oct. 29th and 30th workshops to inform the development of the Draft Roadmap Update.

We also suggest that the Workshop Discussion Document, for the Oct. 29th and 30th workshops, be released at least 2 weeks before the workshop, so that all stakeholders have sufficient time to review and prepare.

Thank you for your consideration of our comments. Please do not hesitate to contact Hannah Goldsmith at (916) 551-1943 or [hannah@caletc.com](mailto:hannah@caletc.com) if you have any questions.

Sincerely,

Hannah Goldsmith  
**California Electric Transportation Coalition**

Lance Atkins  
**Nissan Technical Center North America**

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**Southern California Edison**

Jamie Hall, Jim Tarchinski  
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