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Consolidated Group Public Comment - VGI Roadmap Update

Additional submitted attachment is included below.

November 2, 2018

California Energy Commission
Docket No. 18-MISC-04
1516 Ninth Street
Sacramento, CA 95814

The following companies would like to submit these consolidated comments.
Companies:

Audi, BTC Power, Electrify America, Greenlots, HEVO Inc., Hubject, IoTecha, LUCID Motors, Porsche AG, and Volkswagen Group

Consolidated Comments:

Audi, BTC Power, Electrify America, Greenlots, HEVO Inc., Hubject, IoTecha, LUCID Motors, Porsche AG, and Volkswagen Group appreciate the opportunity to provide input on the California Vehicle-Grid Integration (VGI) Roadmap Update. We commend the State of California, California Energy Commission (CEC), California Air Resources Board (CARB), California Public Utilities Commission (CPUC), and California Independent Service Operator (CAISO) for their dedication to increasing electric vehicle (EV) adoption.

We fully support the VGI Roadmap's goal to advance communication and hardware technology standardization and interoperability. As the Commission shapes the VGI Roadmap Update, we offer the following responses to the technology questions:

What standards and methods of communication need to be considered in vehicle-grid integration programs (e.g. unidirectional charging, bidirectional charging, high-powered, inductive, pantograph and automated connection charging)?
We ask for the inclusion of ISO/IEC 15118 as the standardized protocol in order to maximize all vehicle-grid integration (VGI) capabilities between EVSEs and EVs. Including ISO/IEC 15118 will enable the Plug & Charge use case resulting in an easy and seamless charging experience for the EV driver through an internationally recognized, interoperable and secure protocol. ISO/IEC 15118 also enables bi-directional electricity flow, inductive and wireless charging, which paves the way towards future autonomous charging. Furthermore, ISO/IEC 15118 supports smart charging functions such as demand response, active load management, and the optimization of renewable energy. This international standard ensures these above capabilities as well as enables functionality to energy management systems, load management and home charging.

With many of the largest global automotive OEMs, EVSE manufacturers and charging network operators already developing the ISO/IEC 15118 standard into their vehicles, equipment, and systems, we recommend that the Energy Commission use ISO/IEC 15118 as the communication standard for EV charging and consider retrofitting existing stations with the standard. As it can take years for automotive OEMs to bring a vehicle to market with technology and standards choices often being made at least 4-6 years in advance, we must enable the market now. This will allow these technologies and standards to appear in today's production models. Deployment and utilization of ISO/IEC 15118 is growing in the US market and should be a part of the State's VGI Roadmap. Indeed, Electrify America will be offering ISO 15118 Plug & Charge on their 2,000+ high power charging stations. Only by standardizing a single charging

protocol can large-scale interoperability between EVs and EVSEs be achieved. Furthermore, this will allow the industry, and ultimately the consumer, to reap the benefits of economies of scale.

How can policymakers, researchers, and industry foster advanced technologies into to a global, vibrant e-mobility market to save customer costs and minimize emissions?
We respectfully encourage having a worldwide standard to enable the global competitive electric vehicle market. Worldwide and proven standards make it more efficient for global stakeholders to participate in the e-mobility ecosystem. In order to jumpstart the market, government agency grant money from programs like ARFVTP should focus on supporting publicly-funded EV charging stations to be ISO/IEC 15118 enabled.

In addition, funds from programs like EPIC should continue to be used to validate the additional use cases of ISO/IEC 15118 that include smart charging, bi-directional, wireless and inductive charging. We recommend that these pilot programs include both public and private stakeholders such as auto OEMs, utilities, backend network providers, EVSE manufacturers, the CPUC and CAISO to prove out financial business models, grid benefits, and technical advancements in automation that can result from ISO/IEC 15118.

Problems / Issues: All makes of PEVs and charging equipment are not interoperable. The charging and payment process for workplace and public charging is evolving, but needs to simplify for drivers as PEV infrastructure is deployed.
In addition to the technology solutions, we want to comprehensively enhance the consumer experience at EV charging stations. We believe that interoperability of EV charging is essential to eliminate range anxiety as well as the hassle and need for EV drivers to register for various service providers and use multiple RFID cards and mobile apps to access and pay for charging. Protocols like the Open Charge Point Protocol (OCPP), the Open InterCharge Protocol (OICP), and the Open Charge Point Interface (OCPI) as an open standard and without modification or extensions could be used in combination with ISO/IEC 15118 in order to create a holistic public charging ecosystem. Thus, we recognize that the charging and payment processes are evolving and need to simplify in order for drivers to easily and seamlessly utilize PEV charging infrastructure.

We thank you for your consideration and look forward to continuing to work with the CEC, CARB, CPUC, and CAISO to make EV charging easy and accessible for everyone. Please feel free to contact us if you have any questions.