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EVBox comments on AB 2127 assessment

Additional submitted attachment is included below.

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February 26, 2021

CEC Commissioners and Staff
California Energy Commission
Research and Development Division
1516 Ninth Street
Sacramento, CA 95814

Re: Comments for AB 2127 Electric Vehicle Charging Infrastructure Assessment

Dear California Energy Commission,

The EVBox Group (EVBox) welcomes the opportunity to provide comments to the California Energy Commission's (CEC) AB 2127 report. EVBox is headquartered in Netherlands (global) and Illinois (North America), and is a manufacturer of EV charging equipment and related cloud-based services.

- **CEC should prioritize deploying ISO 15118-ready charging hardware to ensure maximum preparedness for future vehicles and vehicle-grid integration features.**

EVBox in general supports the implementation of the International Organization for Standardization (ISO) developed ISO 15118 communication between EVs and chargers. Adoption of ISO 15118 will provide a bi-directional digital communication standard based on a widely accepted industry protocol.

However, the effective implementation of this standard is rooted in market readiness; therefore, it is important that mandating ISO 15118 as a hardware standard should not be premature. ISO 15118 has several significant advantages including an identification and authorization mode, where the EV driver and user of the charger can plug their EV into the charging station without any additional user authorization like a RFID card or mobile app. This functionality can also be extended to bill the EV driver for charging the vehicle. For this functionality to be truly operable, it is essential for the ISO 15118 standard to be supported by a Public Key Infrastructure (PKI). A PKI is a system for managing digital certificates that are used for securing digital communication. Such a PKI would need to be in place before ISO 15118 can be introduced to the EV charging ecosystem on a large scale, and that EV users can start making use of its benefits. Currently, the industry is not even close to PKI development and adoption.

Another advantage of ISO 15118 is that it enables EV and charging stations to transfer energy data between each other; therefore, allowing the central software system to enabling smart charging. However, while the automotive sector has expressed continued support for ISO 15118, drivers are yet to see cars on the road that have fully embraced the standard. This will happen with time, but in the interim, it is impossible to apply ISO 15118 enabled smart charging to any real use case beyond simulated lab conditions.

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The ISO 15118 standard was published between 2013 and 2015 by the ISO. It has since then been adopted by the International Electrotechnical Commission (IEC) and currently a joint working group of IEC and ISO continue the further development of the standard. Since testing and certification is not in place yet, the Commission should be cautious before imposing certification requirements on EVSE. We recommend that the Commission mandate ISO 15118 as an EVSE requirement but not before 2023, and in the interim focus on specific implementable use cases, develop a testing requirement, and keep an eye on vehicles adopting the standard.

- **Given the capabilities and growing use of both ISO 15118 and OCPP, CEC should prioritize deploying chargers that support both standards.**

OCPP is an open communication protocol that allows electric vehicle charging stations and central management software to communicate with each other. The protocol has been adopted by dozens of leading charging station manufacturers and around the world. The lack of widely agreed upon standards for the backend communication networks (between charger and central management software) can hinder the ability to effectively integrate the charging stations into the energy infrastructure. Interoperable and open networks allow data to be easily accessed, shared and collected to improve charging services and plan for infrastructure development. However more importantly, OCPP allows customers to have real choice regarding hardware and network without the prospect of vendor lock-in. EVBox continues to integrate its hardware with over eight networks in North America. With OCPP compliant hardware and software, customers truly have the ability to choose a network that meets their needs and budget and the option to switch the network if it does not. With more and more networks entering the North American market, it is only prudent to invest ratepayer funds in a truly open EV charging ecosystem. The Open Charge Alliance ("OCA"), a non-profit foundation with 125 members from 29 countries has handled the specification development, certification program development and testing tool development for OCPP for over a decade. The certification program is a joint effort of the OCA and several independent test laboratories around the world to test conformance to the OCPP specification. OCPP testing and certification can be performed by the independent testing lab DEKRA in Virginia.

OCPP 2.0 can unlock the true potential of vehicle-grid integration. OCPP 2.0, the follow up to OCPP 1.6, offers a wide range of control functionalities for utilities, charge point operators and EVSE owners and is a suitable standard with additional support for ISO 15118. With ISO 15118 and OCPP 2.0, the vehicle sends the requested absolute state of charge in kWh to the charger via ISO 15118, and the charger forwards this information to the backend system via OCPP 2.0. The smart charging functionality uses this precise and accurate information to plan the charging event correctly. However, OCPP 2.0 is not finalized yet but when it is, it should be mandated along with OpenADR to standardize V1G functionalities.

- **CEC should build capacity for Independent Lab Certification**

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We commend the CEC for being forward looking with the lens of future-proofing EV charging infrastructure and the establishment of Vehicle-Grid Innovation Lab (ViGIL) to provide certification related to all California mandated requirements including California Type Evaluation Program (CTEP) , OCPP, ISO 15118 etc.

- ## CEC should adopt standard communication protocols for Vehicle to grid integration

EVBox supports the establishing a standard communication pathway could send a strong signal to the EVSE market and supports incorporating these pathways into its product roadmaps. The standards will be different for both V1G and V2G.

For V2G, commercial use cases are very limited and can only be applied to a direct current charger. The CCS charging standard does not support V2G and the only charging standard that theoretically supports vehicle to grid bidirectional charging is CHAdeMO. In the absence of more data, activity and cars that allow V2G transfer of energy, it is premature to adopt any standard for V2G.

For V1G, OpenADR 2.0 standard was established as an IEC standard and is widely used in demand response programs across the nation. OpenADR is a message exchanging model since it does not directly control end devices, but rather "informs" the device but OpenADR when combined with OCPP 2.0 can unlock the true potential of vehicle-grid integration.

Sincerely,

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