

**CALIFORNIA ENERGY COMMISSION
DOCKET 13-ALT-01
In the matter of
Electric Vehicle Supply Equipment (EVSE) Interoperability**

Staff Workshop of the State's Role in Supporting Interoperability of Electric Vehicle Supply Equipment

PUBLIC COMMENTS

**Submitted by
ChargePoint, Inc.
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Thank you for the opportunity to provide post-workshop comments on the “State’s Role in Supporting Interoperability for Electric Vehicle Supply Equipment.” The workshop provided an excellent format to allow for a robust discussion of the technology and policy options for the State’s consideration. It was a thorough exploration of the options for roaming as well as options for EVSE network standards. These comments will address the key questions and issues posed by the Background Paper as well as address issues raised in the workshop.

Background

ChargePoint is a California based Silicon Valley company manufacturing and deploying charging stations and business software systems for electric vehicle charging—necessary ingredients for the successful adoption of electric vehicles.

ChargePoint has consistently testified and provided comments advocating that the State support industry efforts to develop interoperability standards. These actions include:

- Richard Lowenthal, CTO and Founder of ChargePoint participated in the Staff Workshop on the State’s Role in Supporting Interoperability for Electric Vehicle Supply Equipment on August 15th
- ChargePoint submitted public Comments to the Governor’s ZEV Action Plan on November 1, 2012 addressing the need for State support of Industry efforts to provide standards for Interoperability
- ChargePoint participated in the Governor’s Office Summit on Zero Emission Vehicles held on September 29, 2012
- Richard Lowenthal, CTO and Founder of ChargePoint testified at the AB 118 2013-2014 ZEV Investment Plan Advisory Committee Hearing on December 4, 2012

- ChargePoint submitted Comments on September 28, 2012 in Docket 12-ALT-02 the AB 118 2013-2014 ZEV Investment Plan and recommended funding to support industry efforts in interoperability

In addition, ChargePoint has testified before the California legislature and actively participate in the CPUC ongoing proceedings to remove barriers to PEV adoption. ChargePoint has partnered with the Energy Commission in AB 118 funding opportunities to both manufacture the software systems as well as deploy charging infrastructure throughout the State.

NETWORK INTEROPERABILITY IS NETWORK ROAMING

Technical presentations at the workshop provided clarity to the industry definition of “interoperability”—and that is to enable driver roaming to interconnect charging networks. There was no disagreement that it is in the public interest, in the words of the Governor’s ZEV ACTION PLAN to “allow PEV Drivers to locate and reserve public charging stations and be billed regardless of driver’s EVSE company membership.”

Some advocated that an alternative to network interoperability is the use of credit cards. Credit card transactions add considerable costs to the consumer, and will not address mapping, pricing or reservation capabilities that clearing house proposals will provide.

NETWORK ROAMING EXAMPLES

a. What is current business models exist in the EVSE market with regard to interoperability?

The only approach presented at the workshop for driver roaming is to interconnect the charging networks through Collaboratev, or something similar. Everyone agrees that it is in the public interest to, in the words of the Governor’s ZEV Action Plan “allow PEV drivers to locate and reserve public charging stations and be billed regardless of driver’s EVSE company membership.”

Since the announcement of the ZEV Action Plan, ChargePoint has worked to develop an industry-driven solution to address the Interoperability Issue, for current and future EV drivers, in a forthright manner, to prevent the stagnation of this very promising market. We have researched many potential solutions before proposing Collaboratev, and we have consistently found that a network clearing house appears to be the only solution for roaming that has surfaced. While not in the Company’s competitive interest, the roaming solution is required to grow the California market. The benefits will accrue to drivers, as well as EVSPs because the market will expand by providing a better EV driving experience.

b. Should the State provide support for these interoperability business models? If so, why and what kind of support?

The record on the need for interoperability funding has been established and supported by the Governor’s ZEV Action Plan for close to a year and the State should support these business models. Without direction on funding, the EV market momentum in California will be compromised and the opportunity will languish and eventual costs for implementing a solution will rise substantially.

At this critical point, we think it is time for the State to provide investment with the urgency it requires.

This should be a competitive solicitation that provides the opportunity for any model to step up with proposals. The criteria the State should enable could include: open membership, reasonable consumer fees, mapping and data services. Industry cost share of 50% should be mandatory. The total state cost-share requested for this industry developed solution would not exceed \$3 million to resolve this market impediment if action is taken now.

Beyond the clearing house, the other work that needs to be done is to have the EV Networking companies make the changes necessary to adapt to the new national standards for roaming. The concept for funding could be a “set aside” funding within the CEC’s next EV Infrastructure PON, for cost share support of existing EVSE equipment change-out for all existing EVSP and EVSE owners, would be the most timely and cost-efficient way to accomplish this necessary goal.

We see an opportunity for the California Energy Commission to play a role in leading this effort to ensure drivers in the California market, the largest EV market in the United States, will be able to access charging stations seamlessly and enable the applications that will grow the market in the State.

Following are funding recommendations and support:

- **WE RECOMMEND that the Commission provide funding for the formation of a roaming clearing house that multiple EV Networks can use in order to present a uniform driver experience in which any driver can charge at any EVSE.**
- **WE RECOMMEND that the Commission provide funding for the conversion to a standard authentication mechanism that will replace charging cards used by network providers with cards that have roaming ability**
- **WE RECOMMEND that the Commission provide funding for the software modifications to California EV Network Providers to allow roaming and unified station mapping. Any company can apply for the funding as well so long as they are California based and demonstrate their presence in the California market.**

SB 454 and INDUSTRY STANDARDS

SB 454 would create the “Electric Vehicle Charging Stations Open Access Act”. The bill mandates the State to put in place interoperability standards for network roaming payment methods as well as interoperability billing standards by January 1, 2015.

Consistent with the Governor’s call for a solution to roaming in the ZEV Action Plan of September 2012, and the requirement for roaming by January 2015 in Senate Bill 454, it is clear to us that it is time to act on the roaming issue without delay.

OPEN CHARGE POINT PROTOCOL AND HARDWARE INTEROPERABILITY

What are the overlapping issues and relationships between network and hardware interoperability?

The workshop provided important technical background to distinguish the role of hardware interoperability and network interoperability.

- OCCP is a station owner benefit which does not address an existing problem.
- Network interoperability is purely a driver benefit.
- The Governor's ZEV Action plan called for addressing the driver issues to advance the market.

ChargePoint supports OCCP, the international standard for connecting electric car charging stations into a service network. For example, the ChargePoint network is compatible with the OCPP allowing a charging station network operator to connect OCPP charging stations to that network with few technical challenges.

ChargePoint would support the requirement that EVSE hardware is OCCP compliant. However this is not an alternative to support for interoperability funding.

TIMING FOR STATE SUPPORT

Parties calling for more study or a "wait and see" approach are looking to delay. The ZEV mandate as well as the Governor's GHG goals set market requirements that cannot wait. Furthermore, this is an exciting technology opportunity that is seen as a product of the Silicon Valley. Other states may well step up to this and California could lose its leading edge. The Commission should act expeditiously.

