

DOCKETED

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RLG Comment

Additional submitted attachment is included below.

CEC Review

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CEC Bill 2127 Electric Vehicle Charging Infrastructure Assessment

Comments

Abstract Comment

1. abstract and therefore potentially the report is remiss in not discussing upfront the role of home charging as an important driver of the quantity and use of public charging infrastructure.

Home can also mean workplace charging for fleet vehicles before and after deployment.

2. The abstract also does not appear to address the fact that BEVs (250 mile average range) and now long range PHEVs will require less public infrastructure
3. Missing also in the discussion about innovation is the critical importance of VGI and the importance of accurate, reliable data flow between the vehicle, the manufacturer, the charger and the utility energy source – data management

Charging Infrastructure

include dedicated private chargers such as those installed for personal use at single-family'

This statement is included in the body of the discussion referring to the lack of emphasis on home chargers. I think this is a mistake and home charging should be a point of emphasis in this important discussion that eventually drives public charge usage factors and economic viability .

- “To the best of staffs knowledge, current data, including spatial data, on Level 1, shared private, or private chargers is limited, even though these chargers may account for a significant portion of statewide charging infrastructure (shared private chargers accounted for nearly 40,000 of California’s chargers as of September 30, 2020).”

The above is an important statement in the document and should become an critical analysis by the CEC in the future – the resulting factual data when developed will drive key investment decisions.

Californians are Driving More:

But are the driving long distances? What are the average miles per trip? Driving more does not mean need for public charging is greater? And potentially argues for the value of long range PHEV +50 miles that meet this driving pattern without public infrastructure.

TNC Increase

TNC use of DC fast charging may be the key to usage factors and economic viability but only in certain core areas – does this trend benefit low income and minority communities? Rural communities?

Shared and public charging:

- “While most existing PEV drivers charge at single-family homes, 39 shared and public charging infrastructure will be increasingly critical as PEV adoption spreads beyond early adopters. Even with declining vehicle sticker prices, several 40 recent reports 41 emphasized that continued growth in the PEV market will depend on driver confidence in charging infrastructure”

The above suggests that the authors took into consideration home charging – what appears to be lacking is the potential of emphasis of home charging and how this side of the charging infrastructure picture can be elevated in importance. What would it mean to the investment in public charging if home increased? Especially developing a solution to “home charging” at multi family dwelling locations – primarily low income.

Again no argument with need for public charging but this statement needs additional words:

- “Thoughtful charger deployment is a significant undertaking that demands careful attention to driver behavior, the local built environment, equity, resiliency, grid capacity, technical standards, and scalability for an assortment of charging solutions. “ and **total cost of operation, back office support, long term viability adaptability to new technologies,**

Modeling:

- “Furthermore, a decrease in the assumed proportion of home charging access 50 led to an increase in DC fast charging demand. This results in DC fast charging contributing a larger share of the load profile than prior analysis.”

Does the above statement also mean that if the home charging was increased – DC fast charging needs would be DC decreased. Possibly a wiser strategy

- “While access to home charging should still be a priority and remains one of the key benefits and incentives of owning an EV, “

A very important point that does not receive the level of emphasis in this report that reflects the priority.

Modeling Results:

- These numbers assume drivers will unplug their vehicle when the battery reaches around 80% state of charge, as charge power diminishes significantly at higher states of charge.”

Assuming the above is true today – will it be the same with continues battery and battery management system development? This type of comment might lead to unnecessary overbuilding of infrastructure.

- , “with most of the remaining stations at recreation and park areas (28 percent),

Why would this be true when most recreation and parks are long stay destinations that are better suited for the less expensive Level II option?

Bi Directional Charging

- “Vehicles capable of cleanly and quietly powering homes using the onboard battery can provide vital energy resiliency during grid outages, especially for communities affected by public safety power shutoffs. While the technologies to support such a setup exist, stakeholders must address several barriers before commercial vehicle-to-home solutions can become widely available, including vehicle-charger communication protocols, vehicle warranty agreements, and updated utility interconnection rules, among others

An additional important ingredient that must be added to this challenge is the “cost to the consumer: versus the value received”

A completely different argument if the consumer is the utility service truck or an Amazon delivery Van as an additional customer service but of the individual is the cost work the potential?

Communication Protocols:

“Given that many global automakers and charging networks have already announced their intention to adopt ISO 15118 for vehicle-to-charger communications, CEC should prioritize deploying ISO 15118-ready charging hardware to ensure maximum preparedness for future vehicles and vehicle-grid integration features. “

This is a critical important subject to address on the path to electrification success. However I question the need to choose a single path at this early stage in development. Recommend that CEC establish a public/private detailed analysis of the options available to meet this important communication protocol to be sure cyber security, utility system management, vehicle costs, efficiency, longevity etc are considered.

Streamlined Permitting

One must be careful to ask the question, does streamlined permitting interrupt careful planning especially with an immature fast moving market with a wide variety of product mixes?

Private Investment:

I may have missed this fact in the document, but I did not see an emphasis on home/multifamily charging systems as a priority for investment by federal, state, local, and utility and private entities. A section needs to be included on how this important component can be expanded and financed. This is critical to those consumers that are still on the fence about buying an EV -

The Road Ahead:

Like a broken record, a missing critical component is an emphasis on home/multifamily recharging financing, deployment, technology development.