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**Comments of The Mobility House on The California Energy Commission's (CEC) Assembly Bill 2127 Electric Vehicle Charging Infrastr**

*Additional submitted attachment is included below.*

**Comments of The Mobility House on The California Energy Commission's  
(CEC) Assembly Bill 2127 Electric Vehicle Charging Infrastructure Second  
Assessment Staff Draft Report**

Docket # 19-AB-2127: "Implementation of AB 2127 Electric Vehicle  
Infrastructure Assessments"

Submitted via:

<https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=19-AB-2127>

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## Introduction

The Mobility House (“TMH”) is a 14-year-old EV charging solutions company with 300+ employees serving customers in California, across the US, and in 10 countries. The company’s technology platform, “Chargepilot”, enables reliable and efficient charging as well as grid integration of electric vehicle fleets using intelligent charging, energy management, Automated Load Management (“ALM”), Vehicle-to-Grid (“V2G”), and stationary storage solutions. Chargepilot has been rolled out with 1200+ fleets across North America and Europe.

TMH commends California Energy Commission staff on production of Assembly Bill 2127 Electric Vehicle Charging Infrastructure Second Assessment Staff Draft Report (“the report”) in a fast-changing industrial, commercial, and economic environment. The report has potential to inform and guide the California Public Utilities Commission, other state agencies, and private stakeholders as they pursue transportation electrification and decarbonization goals. We appreciate the opportunity to comment.

Our recommendations are summarized below:

- Revisit the definition and framing of VGI prioritizing facilitation of energization and acceleration of transportation electrification in pursuit of state goals and mandates before focusing on VGI as a server of grid needs.
- Updated gas station model alternative future appears unattractive from both VGI priority and equity perspectives.
- Some reflection on impact of NACS developments on interoperability would be appropriate.

## Chapter 6: Vehicle-Grid Integration

Chapter 6 is written as a framework for encouraging Vehicle-Grid Integration, but seems to conflate elements needed for EV deployment with elements necessary for VGI. To the extent EV deployment is a prerequisite for integration of those EVs to the grid, this could be seen as correct, but it is important to recognize that VGI is not just an outcome of, but rather a facilitator of transportation electrification activity. In The Report's glossary, Vehicle-Grid Integration is defined as: "Methods to align electric vehicle charging with the needs of the electric grid. To do this, electric vehicles must have capabilities to manage charging or support two-way communication between vehicles and the grid."<sup>1</sup> This restricts the definition of VGI somewhat, leaving out what is becoming an increasingly essential function: Integration of EVs to the grid can minimize the impact of their own presence on the grid. This is not a distinction without a difference, but rather an essential framing of how EVs will be framed as grid actors. In a proverbial transportation electrification hierarchy of needs, the first order impact of VGI should be to mitigate the need for infrastructure construction, new grid components, and new generation assets facilitating initial energization of EV installations. Assisting utilities and system operators as they work to balance and maintain grid reliability both day-to-day and in emergencies is a second-level activity.

Accepting the reality that portions of the California grid are constrained at both the distribution and transmission levels to such an extent that electrification of MD/HD fleets in particular face potentially prohibitive costs and impractically lengthy timeframes, VGI (and ALM specifically) is better framed as a solution to this problem rather than presenting the problem (lack of site readiness) as an impedance to all forms of VGI. The actual text of the Site-Level Electrical Readiness Section does do this without explicitly saying so. However the Section's inclusion of grid readiness as a necessary element to have in place for VGI to flourish underplays ALM not only as a form of VGI, but as an essential enabler of California's transportation electrification

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<sup>1</sup> Assembly Bill 2127 Electric Vehicle Charging Infrastructure Second Assessment Staff Draft Report, p 105.

goals. An example of actual site-level electrical readiness action beyond the noted CalGreen code to enable VGI could be requiring ethernet or other communications cables be run as part of any forward-looking conduit laying to make non-telematics-based smart charging an option.

Similarly, while it is a known issue that production of EV load curves still requires some assumptions and guesswork, it can be done in ways that reflect the flexible nature of EV loads and in ways that identify the most relevant aspects of EV charging to consider when facing the project of energizing unprecedented amounts of new EV load in next 10-20 years. Recent studies by E3/Gridlab<sup>2</sup> and Synapse<sup>3</sup> focus on coincident peak charging, meaning charging of EVs that coincides with peak usage of the EV's *local* grid infrastructure. This is one of the most significant variables affecting utilities' ability to energize a site. This is starkly demonstrated by testimony of both fleet owners and utility representatives at CARB's Advanced Clean Fleets ("ACF") stakeholder workshops, and CARB's adjustments to ACF requirements allowing fleets extensions of *up to five years* on their obligations for utility-related construction delays.<sup>4</sup>

Recognition of the difference between likely coincident peak charging as opposed to nameplate capacity or even site-level peak charging, and of the capability of many fleets to move EV load away from coincident peaks using ALM in collaboration with utilities can impact EV and grid planning more broadly.<sup>5</sup> While it is clear that data regarding benefits of VGI are needed to forecast impacts, modelling of potential EV load shapes for this report as well as for IEPR-related activity should at least try to capture the potential for this subset of VGI. California utilities are facing more and bigger energization requests than ever before and the Medium- and Heavy-Duty electrification project is just beginning. If California waits to decide whether or not to encourage mechanisms like flexible connections until sufficient operational data is available, Advanced Clean Fleets and other programs will lose years they do not have spare without a

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<sup>2</sup> 2035 Distribution Grid Cost Impacts Driven By Transportation Electrification. E3/GridLab, June 2021

<sup>3</sup> Distribution System Investments to Enable Medium- and Heavy-Duty Vehicle Electrification: A Case Study Of New York. Synapse Energy Economics, Inc. April 2023

<sup>4</sup> CARB Public Workgroup on Infrastructure and Zero-Emission Vehicle (ZEV) Availability Provisions, January 13, 2023. Workshop recording link: <https://www.youtube.com/watch?v=2Zf8rY3rsYM>

<sup>5</sup> This is the Flexible Connection model proposed by [AB 691](#) in 2023

potential tool to cram more EVs onto the existing grid while utilities do their work in a safe and orderly manner.

## **Consideration of the Gas Station Model**

The modelling of alternative futures is a necessary and illuminating part of this report. The report reiterates and confirms<sup>6</sup> that VGI as a subset of load flexibility is essential to attainment of various climate, decarbonization, and grid reliability goals. It is important to emphasize that the gas station model, particularly in this new run, appears to be the opposite of vehicle-grid integration. To the extent that mobility needs can reasonably be met, and embrace of transportation electrification by individually owned vehicles still encouraged, implementation of the gas station model outside of highway charging should be framed from a policy perspective as a last resort and/or infrequent convenience rather than a first and primary charging option.

An essential next step in consideration of the gas station model, particularly if it is framed as an alternative to Level 2 at-home and workplace charging, should be to estimate on a per kWh basis what EV owners who have no other access (due to aforementioned decreased workplace/MUD L2 access) will be paying compared to those who do. If and as demand charges come back into effect, gas station model rates could increase TCO for low-income stakeholders who do not have single-family homes, garages, low-cost/free at-work charging perks specifically because policy actions removed the option. This would be the opposite of equity, and a step backward in encouraging low-income stakeholders to go electric.

## **Lack of acknowledgment of NACS developments**

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<sup>6</sup> Assembly Bill 2127 Electric Vehicle Charging Infrastructure Second Assessment Staff Draft Report, pp 73-43.



The Mobility House acknowledges the difficulty of drafting an in-depth report on a rapidly evolving industry without occasionally being overtaken by event. That said, the report notes that “Charging connector interoperability is the most visual and obvious example of interoperability, and much of the industry has made clear progress toward standardizing around the CCS connector for fast charging.”<sup>7</sup>

TMH believes CCS remains an important standard, but the language here is inaccurate, or at least incomplete, in light of developments in spring and summer of 2023 concerning Tesla’s “NACS” connector. While it is likely that this report does not include NACS simply because the draft was completed prior to the announcement of various automakers and EVSE manufacturers to adopt the connector, not addressing it in any way makes the report seem dated upon its release. Though we understand new modelling runs are impractical at this point, a paragraph laying out potential impacts on standardization, interoperability, accelerations or chilling effects on rollout of AC and DC EVSEs, and sales of EVs themselves seems appropriate. If nothing else, staff could at least include a footnote explaining the absence of this content and intent to address the subject in later reports or other proceedings.

Respectfully submitted,

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<sup>7</sup> Assembly Bill 2127 Electric Vehicle Charging Infrastructure Second Assessment Staff Draft Report, p 79.