

**DOCKETED**

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**Cruise LLC Response to ZEV Charging RFI**

*Additional submitted attachment is included below.*



May 29, 2020

California Energy Commission  
Dockets Office  
Re: Docket No. 20-FINANCE-01  
1516 9th Street  
Sacramento, CA 95814

Dear California Energy Commission,

Cruise LLC submits the following in response to the California Energy Commission's (CEC's) Request for Information (RFI) for Docket 20-FINANCE-01: Strategies to Attract Private Investment in Zero Emission Vehicle (ZEV) Charging Infrastructure and Other Clean Transportation Projects. Founded in San Francisco in 2013, Cruise is an all-electric self-driving technology company with a mission to build the world's most advanced autonomous vehicles (AVs) to safely connect people to the places, things and experiences they care about. Cruise is the only self-driving vehicle company that has committed to an all-electric fleet fully dedicated to serving members of the public - a service we believe will bring significant safety and environmental benefits to all Californians.

Electric vehicles (EVs), especially when deployed in autonomous fleets, can support California's ambitious energy, electrification and environmental goals. We believe that our business model can not only increase the amount of zero-emission passenger miles, but also support grid integration, energy storage, and demand charge management. As the CEC considers how to attract private investment in ZEV infrastructure, Cruise believes there is merit in **reconfiguring existing programs and exploring new initiatives that acknowledge and encourage the potential benefits of all-electric fleets whose sole purpose is to directly serve the public.**

Given this opportunity, the following response provides: 1) an assessment of the regulatory barriers preventing electric AV fleets from partnering in CEC EV infrastructure programs; 2) an overview of the benefits these models present to CEC electrification priorities; and 3) proposed steps to ensure these fleets can support the CEC's transportation decarbonization priorities.

#### **Regulatory Barriers Preventing the Full Benefit of All-Electric Self-Driving Fleets**

If deployed with the right regulatory and policy framework, all-electric self-driving fleets could make our roads cleaner, more energy efficient, and more sustainable. Cruise's business model is anchored in a robust, wholly-owned and -operated EV charging infrastructure. Though kept private due to high utilization and operational needs, our stations will directly serve Californians and provide the public with an easy, affordable, and cleaner transportation option. This is

particularly true for those who do not own an EV, are unable to purchase one, or may otherwise not have the ability to charge - addressing well-documented barriers to EV adoption.<sup>1</sup>

Unfortunately, the potential for these fleets to have a positive impact is uncertain. Legacy regulations currently limit how public funds can be optimized to support new solutions like autonomous, electric fleets. **Many emerging business models, including Cruise's, did not exist when program guidelines and associated eligibility criteria were first developed.** For example, eligibility for the California Electric Vehicle Infrastructure Project (CALeVIP) is contingent on public access to funded chargers. This makes Cruise and others working in alignment with the spirit and goals of the program ineligible. We believe this is a missed opportunity, given that the sole purpose of our charging network is to transport members of the public via sustainable green miles. By making this and other related updates, the CEC can proactively shape the overall sustainability and energy profile of emerging transportation.

### **The Benefits of Autonomous, Electric Ridesharing Fleets for CEC Goals**

Transportation still accounts for over 40 percent of statewide emissions, with nearly 70% stemming from light-duty passenger vehicles.<sup>2</sup> Amidst these challenges, all-electric self-driving fleets are poised to provide efficient, clean, and sustainable transportation. California has a window to develop policies that incentivize new models aligned with statewide energy and transportation goals. As the CEC considers how best to deploy public support for ZEV charging infrastructure incentives, Cruise believes the following conceptual benefits merit consideration:

- **Support for Models that Address EV Adoption Barriers:** Despite existing incentive programs and progress in adoption, many Californians still do not have the luxury of owning an EV - either due to cost, lack of access to charging, or existing ownership of another vehicle. EV/AV ridesharing promises green transportation to the public, regardless of vehicle ownership. As the CEC evaluates charging infrastructure incentives, the benefits of greater public access to EV transportation options should be taken into account. It is important to note that with these new business models, private chargers may actually benefit more members of the public than public chargers only accessible to those who own an EV.
- **Centrally Controlled Fleets Can Support CEC Goals:** Self-driving fleets also present unique central management and control benefits. Fleet managers will have oversight over operations, including when AVs drive, charge, and deploy. This provides a greater ability to manage the fleet and, if electric, capture unique synergies between grid and rider demand. AVs deployed in this model could align with statewide electrification goals, delivering decarbonization impacts that decentralized fleets may not be able to achieve. These fleets could even effectively serve as virtual power plants, responding to real-time signals from the California Independent Service Operators (CAISO), offering demand generation, and even creating modular microgrids during emergencies and public-safety power shutoffs.

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<sup>1</sup> Ethan Elkind and Ted Lamm, "Electric Vehicles and Global Urban Adoption - Policy Solutions from France and California", *Berkeley Law Center for Law, Energy, & The Environment*, November 2019, <https://www.law.berkeley.edu/wp-content/uploads/2019/11/Electric-Vehicles-and-Global-Urban-Adoption.pdf>.

<sup>2</sup> California Air Resources Board, "2019 GHG Inventory", *GHG Current California Emission Inventory Data*, <https://ww2.arb.ca.gov/ghg-inventory-data>.

- **Centralized Charging and Utilization Rates:** Given the centralized nature of both vehicle operations and charging decisions, AV fleets are also incentivized to maximize charger utilization rates. Average public fast charger utilization rates in California are optimistically 25-30%.<sup>3</sup> In contrast, centrally-managed AV fleets will be incentivized to maximize utilization rates to reduce expenses. If these fleets achieve utilization rates of 50-60%, public funding invested in AV fleet fast chargers could provide twice as many green miles to the public.
- **Fully-Electric Autonomous Vehicle Fleets:** Encouraging and incentivizing AV operators to commit to electric fleets, rather than fossil fuel vehicles, can ensure that future rideshare services support decarbonization and avoid costly fleet transitions. Recent analysis has shown that gasoline-powered ridesharing trips produce 69% more emissions than the displaced mode.<sup>4</sup> Meanwhile, UC Davis has shown electrifying TNC vehicles in California has **three times the emissions impact** than electrifying a personal vehicle.<sup>5</sup> Incentivizing future fleets to be all-electric can position the CEC to radically decarbonize ridesharing and transition California towards a cleaner transportation fuel mix. While Cruise has committed to an all-electric future, we are in the minority - regulatory guidance can help encourage industry to make this transition.

### **Potential Revisions to CEC Programs**

Through this Docket, the CEC has an opportunity to revisit existing transportation electrification programs to ensure that the benefits of shared, autonomous, and electric travel can be captured and appropriately incentivized. In response to the CEC's RFI, Cruise proposes the following two items in order to better leverage private capital in California's electrification goals:

- **Refine Public Access Definitions in Existing Programs:** As noted above, many shared electric AV fleets are ineligible for programs like CALeVIP. While these fleets will exclusively serve the public, the private nature of the chargers make these models ineligible. Given the potential benefit that shared, electric AV fleets present for California's clean transportation goals, Cruise recommends the CEC adjust parameters of existing programs to reflect that these technologies - while not offering the public access to fleet chargers themselves - provide the public with clean transportation and direct access to green miles. Such amendments will enable the CEC to capitalize on some of the tangible benefits of this technology - including rapid deployment, high charger utilization, and even grid benefits.
- **Explore Programs to Quantify Benefits of Electric AV Fleets:** This Docket also asks for concept proposals for new EV charging pilot financing mechanisms. Cruise proposes that the CEC explore potential pilot opportunities to explore how dedicated AV fleet chargers

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<sup>3</sup> Garrett Fitzgerald and Chris Nelder, "EVgo Fleet and Tariff Analysis - Phase 1: California", *Rocky Mountain Institute*, April 2017, [https://rmi.org/wp-content/uploads/2017/04/eLab\\_EVgo\\_Fleet\\_and\\_Tariff\\_Analysis\\_2017.pdf](https://rmi.org/wp-content/uploads/2017/04/eLab_EVgo_Fleet_and_Tariff_Analysis_2017.pdf).

<sup>4</sup> Union of Concerned Scientists, "Ride-Hailing's Climate Risks - Steering a Growing Industry toward a Clean Transportation Future", February 2020, <https://www.ucsusa.org/sites/default/files/2020-02/Ride-Hailing%27s-Climate-Risks.pdf>.

<sup>5</sup> Alan Jenn, "Emissions Benefits of Electric Vehicles in Uber and Lyft Services", *National Center for Sustainable Transportation - UC Davis ITS*, August 2019, <https://escholarship.org/uc/item/15s1h1kn>.

could address some of the long-standing challenges of existing electrification programs, including low charger utilization.

The CEC has an opportunity to revisit existing transportation electrification programs and policies to ensure that the benefits of shared, autonomous, and electric travel can be captured. Many of these programs, while created before this technology was possible, could be modified to catalyze rapid electrification of self-driving fleets. Advancing proactive policy positions that accommodate innovative new technologies will help ensure continued success for the CEC's decarbonization efforts and for a cleaner, more sustainable future for California.

Cruise would be happy to explore this response and the two proposals above in greater depth with CEC staff as appropriate. Thank you.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Robert Grant". The signature is fluid and cursive, with the first name "Robert" and last name "Grant" clearly distinguishable.

**Robert Grant**  
Vice President, Global Government Affairs  
Cruise, LLC