DOCKETED	
Docket Number:	19-TRAN-02
Project Title:	Medium- and Heavy-Duty Zero-Emission Vehicles and Infrastructure
TN #:	261756
Document Title:	Current Comments - Current's Comments on MHD ZEVs & Infrastructure RFI
Description:	N/A
Filer:	System
Organization:	Current
Submitter Role:	Other Interested Person
Submission Date:	2/14/2025 7:55:24 AM
Docketed Date:	2/14/2025

Comment Received From: Current
Submitted On: 2/14/2025
Docket Number: 19-TRAN-02

Current's Comments on MHD ZEVs &Â Infrastructure RFI

Additional submitted attachment is included below.

CURRENT

RESPONSE TO A REQUEST FOR INFORMATION ON

Medium- and Heavy-Duty Zero-Emission Vehicles and Infrastructure for

Pulling **Green** Forward.

Table of Contents

1. Key Considerations for Public Charging Eligibility Criteria

For public/en-route charging funding opportunities, the California Energy Commission ("CEC") should prioritize scalability, interoperability, and strategic location planning. Applicants should demonstrate a proven track record in deploying diverse electric vehicle ("EV") infrastructure across geographies and vehicle classes and optimizing station placement to serve high-traffic corridors and underserved areas.

Financial stability, renewable energy integration, and equity should also guide the CEC's criteria. Funding should favor companies that combine strong financial backing with long-term operational viability.

2. Planning for Medium- & Heavy-Duty Future Charging Needs

To effectively plan for California's future medium- and heavy-duty ("M/HD") charging needs, the CEC should adopt a hybrid approach, combining publicly accessible, high-speed charging hubs along major freight corridors for en-route charging, with reservation-based systems at destinations for guaranteed charging access. Public hubs – mirroring diesel truck stops – should prioritize open access and future-proof designs adaptable to all M/HD vehicle types and charging levels, akin to Current's "Charging for Any EV" capability. Simultaneously, the CEC should facilitate reservation-based systems at depots and facilities to provide fleets with charging certainty.

A key strategy should be promoting and incentivizing Charging-as-a-Service ("CaaS") models, which eliminate upfront infrastructure costs and offer predictable monthly fees, thus de-risking EV adoption for fleets. The CEC should create incentives for CaaS adoption and foster public-private partnerships with experienced providers like Current, leveraging the team's comprehensive packages, renewable energy options, and financial backing to accelerate infrastructure deployment. Prioritizing open standards, future-proof technologies, and bundled green energy options, mirroring Current's offerings, is also crucial.

For implementation, the CEC should focus initially on strategic freight corridors and ports, establishing both public hubs and reservation systems. Pilot programs utilizing CaaS in diverse M/HD applications can provide valuable data to refine the strategy. Ultimately, by strategically blending public and reservation-based charging and actively partnering with CaaS providers like Current, the CEC can create a robust and adaptable M/HD charging ecosystem, essential for achieving California's zero-emission ("ZE") transportation goals.

3. Reservation Systems: Necessity for the Trucking Industry

Yes, a reservation system for public chargers is highly beneficial, and arguably necessary, to effectively meet the needs of the trucking industry. Trucking operations thrive on predictable schedules. Unlike passenger vehicles – which maintain flexibility in charging times – commercial fleets operate on tight deadlines on pre-planned routes. A reservation system provides the necessary certainty that charging will be available when and where it's needed, minimizing downtime and ensuring routes can be reliably driven. This predictability is paramount for the industry to confidently transition to EVs.

Relying solely on first-come-first-served public chargers introduces unacceptable levels of uncertainty for trucking fleets. A well-designed reservation system, ideally integrated with route planning and fleet management tools and accessible via a well-designed app, is essential to provide the reliability and operational assurance the trucking industry requires for successful EV adoption.

4. Existing Multi-Company Reservation Systems

While a Trucking-as-a-Service ("TaaS") model with guaranteed charging offers significant benefits for participating fleets, it does not inherently provide sufficient public charging opportunities for the broader trucking industry. TaaS models are typically designed to optimize charging within a closed ecosystem, primarily servicing the leased trucks and potentially prioritizing those vehicles at dedicated sites. While efficient for the operator and lessees, the TaaS approach can limit access for independent operators or fleets, which is not part of the TaaS agreement.

To ensure a truly robust and equitable public charging network, infrastructure development must extend beyond closed TaaS ecosystems. A comprehensive strategy requires a combination of TaaS-linked charging and genuinely public charging sites, accessible to all commercial vehicles regardless of leasing arrangements. Relying solely on TaaS would create a fragmented system, potentially disadvantaging smaller fleets or owner-operators and hindering the overall transition to electric trucking by limiting accessible charging options.

5. TaaS Model Implications for Public Charging Accessibility

Yes, designating a certain percentage of chargers for public use is crucial for fostering a truly accessible and equitable charging ecosystem for the trucking industry. Publicly available chargers ensure that all commercial vehicles regardless of fleet size or vehicle type have access to essential charging infrastructure. This inclusivity is vital for the widespread adoption of electric trucks and prevents the creation of a two-tiered system where charging access is limited to specific operators or services.

Maintaining a public component also supports the organic growth of the EV trucking market by ensuring that charging infrastructure is a broadly available public utility (like current fueling stations) rather than a solely privatized or subscription-based service.

6. Percentage Requirements for Publicly Available Chargers

To meet the operational demands of the trucking industry, it is equally important to keep a percentage of chargers always available for reservation. Reservations are essential for providing fleets with the predictability and certainty they require for efficient route planning and on-time deliveries.

This reserved capacity caters directly to the time-sensitive nature of commercial trucking, enabling optimized charging stops strategically placed on delivery routes. By allocating a portion of chargers for reservation, the charging network can effectively serve both the immediate needs of en-route trucks and the pre-planned charging requirements of larger fleets.

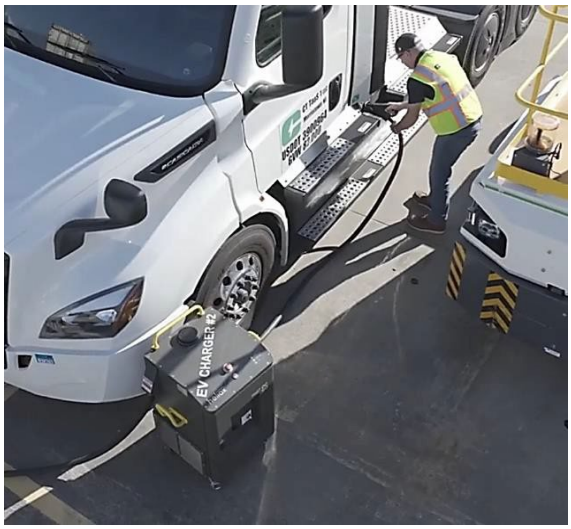
7. Ideal Reservation System Design for Medium- & Heavy-Duty Truck Charging

A mobile app or web-based platform offering real-time charger availability, easy booking with adjustable time windows, and integrated payment options are essential for driver convenience. For fleet managers, API integration with existing fleet management systems for automated booking, route optimization, and consolidated billing would be key.

It is crucial for the reservation system to offer a flexible means of modifying reservations, such as extending charging sessions within reasonable limits, and clear cancellation policies. The system

should provide real-time notifications and updates to both drivers and fleet managers regarding charger availability. The ideal system would also incorporate 24/7 support when needed.

8. Recommended Ratio: Reservation vs. First-Come-First-Served Chargers



While the best ratio of reservation versus first-come-first-served will be dynamic and based on real-world usage data, to start off, the CEC should favor reservation-based chargers at a ratio of 70-80% reservation-capable chargers, versus the 20-30% that are first-come-first-served. The majority dedicated to reservations acknowledges the trucking industry's need for predictability and scheduled charging, and the likelihood that organized fleets will be the earliest adopters.

This ratio should not be rigid but instead actively monitored and adjusted based on utilization patterns, along with feedback provided from fleet operators. Charger allocation might need to be shifted based on time of day or day of week, for example, so the network can effectively serve both scheduled and unscheduled charging needs.

9. Preferred Charging Site Configuration for Reservations & Availability

Configuration A (in which all chargers can be reserved but also used on a first-come-first-served basis if unreserved) is significantly preferred over that of Configuration B. Configuration A offers greater flexibility and maximizes charger utilization, while Configuration B is less efficient and responsive to the changing demand. This could lead to a situation in which reservation-only chargers are sitting idle, whereas first-come-first-served chargers are fully occupied impeding on operators' schedules.

10. Protocol for Overlap Between Reservations & First-Come-First-Served Chargers

If a truck is using a first-come-first-served charger and a scheduled reservation arrives, a fair protocol is for the truck to be provided with a grace period (approximately 15-20 minutes) beyond its estimated charging completion time. The system should automatically notify the driver at the first-come-first-served charger of the upcoming reservation and the impending grace period.

If the charger is still occupied at the conclusion of the grace period, the driver with the reservation may politely request the driver who is charging to conclude their session. The reservation system/app should also provide a means for either party to contact Customer Service/Support to convey feedback about trouble with a charging session.

11. Statewide Benefits of Projects with Reservation Systems

It is imperative for California's freight transport to be both efficient and environmentally responsible. Reservation systems for commercial vehicle charging offer a direct pathway to achieving both objectives. If access to charging is predictable and reliable, electric trucks become a practical means of commercial shipping. In turn, this would encourage a more rapid adoption of ZE vehicles across the trucking sector and beyond. The broader deployment of electric trucks translates to tangible benefits for California, including a reduction in air pollution and progress towards California's ambitious climate goals. Furthermore, the enhanced logistical efficiency resulting from minimized charging downtime contributes to a stronger economy through streamlined supply chains and reduced operational costs for businesses.

12. Driver Safety & Equipment Protection in Public Charging Sites

Indeed, driver safety and equipment protection are critical considerations for the CEC when designating charging infrastructure for the public. Public charging sites need careful attention to driver health and safety, especially since drivers will often be using these facilities at all hours and while fatigued. Proper lighting, clear signage, and essential amenities such as bathrooms would further enhance driver safety and comfort. In addition, equipment deployed at public sites may be subject to more wear and tear, and potential environmental exposure. Therefore,

chargers must have robust design, from the top reliable Original Equipment Manufacturers ("OEMs"), incorporating durability and weather resistance.

In terms of unattended operation, yes, public charging sites can function effectively without attendees on site. However, the sites must have robust remote monitoring systems with 24/7 tech support and readily understandable user instructions to address the issues that will inevitably arise.

13. Standardization & Communication Protocols for Public Charging

Standardization and communication protocols ensure the successful deployment of public charging. The CEC must prioritize open standards to ensure interoperability across the various OEMs and charging network operators. Just as fuel nozzles at gas stations are standardized, so should charging connectors and communication protocols. Specifically, open communication protocols such as OCPP are recommended to facilitate seamless data exchange and network integration. The CEC should favor projects that can deliver these open standards, which help future-proof the public charging ecosystem to benefit all stakeholders.

14. Optimal Public Charging Network Design for California

The optimal public charging network for California would be widely distributed infrastructure with both reservation- and first-come-first-served charging options. Along major freight corridors and in proximity to major ports, there would be well-maintained charging plazas with lots of amenities, designed to resemble contemporary truck stops. Within these plazas, an estimated 70-80% of charging stalls would be reservation-enabled for the scheduled operations of commercial trucking fleets, while the other 20-30% would remain available on a first-come-first-served basis for smaller operators or spontaneous routes. The plazas in this network would be strategically positioned to minimize gaps in charging availability across the state; in doing so would enable a greater number of reservation-based sites around logistics hubs and in more urbanized areas to ensure charging access at key destinations. This network would be seamlessly managed through a single user-friendly digital platform and app, offering real-time charger

status, streamlined reservation capabilities, and intuitive navigation to charging locations throughout California.

15. Optimal Site Configuration for Medium- & Heavy-Duty Charging

A balanced configuration with both reservation and first-come-first-served charging would be optimal for most locations. Exclusively having either 100% first-come-first-served or 100% reservation would lead to underutilization or congestion during peak periods, which is particularly bad for fleets operating on a strict schedule. A hybrid approach, such as a ten-charger site allocated with seven to eight (7-8) reservation-capable stalls and two to three (2-3) first-come-first-served stalls would be a good balance to ensure access with flexibility.

16. Optimal Rules & Parameters for a Reservation System

For a reservation system to function effectively for commercial vehicle charging, the design must prioritize user-friendliness and operational efficiency for fleets and individual operators alike. It should be easy to make a reservation through a mobile app, and the system should be able to integrate seamlessly with fleet management software (via APIs). Drivers should be able to make flexible bookings within windows rather than rigidly fixed time slots to accommodate changes in schedule. Subsequently, the system should allow a grace period to accommodate short overruns of first-come-first-served vehicles if a reservation is scheduled to start, as well as a simple cancellation system. Users should have the ability to receive automated reservation reminders and real-time notifications of schedule adjustments.

Ultimately, the ideal reservation system should minimize the burden on administrators and increase predictability of charging access for truck operators.