

**DOCKETED**

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Submitted On: 2/7/2025  
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**Comments regarding CEC RFI regarding MDHD ZEV Charging**

*Additional submitted attachment is included below.*

February 7, 2025

California Energy Commission  
Docket Unit, MS-4  
Re: Docket No. 19-TRAN-02  
715 P Street  
Sacramento, CA 95814

**Re: Docket No. 19-TRAN-02 – Comments of Center for Sustainable Energy® regarding the California Energy Commission Request for Information regarding Medium- and Heavy-Duty Zero-Emission Vehicle Charging**

Center for Sustainable Energy® (CSE) appreciates the opportunity to provide comments on the California Energy Commission’s (Energy Commission) Request for Information (RFI) regarding Medium- and Heavy-Duty (MDHD) Zero-Emission Vehicle (ZEV) Charging.

CSE is a national nonprofit that accelerates adoption of clean transportation and distributed energy through effective and equitable program design and administration. Governments, utilities, and the private sector trust CSE for its data-driven and software-enabled approach, deep domain expertise, and customer-focused team. CSE’s fee-for-service business model frees it from the influence of shareholders, members, and donors, and ensures its independence. Our vision is a future with sustainable, equitable and resilient transportation, buildings, and communities. CSE provides these comments based on our experience designing, implementing, and evaluating statewide incentive programs in multiple states, which collectively translates to over \$1 billion worth of program value under management.

To inform the Energy Commission’s efforts to support the development of the MDHD ZEV market, CSE offers the following overarching recommendations:

1. Deploy public MDHD ZEV chargers along existing truck routes and freight corridors, including locations with sufficient electrical capacity and physical space.
2. Utilize a flexible approach to developing MDHD ZEV charging stations, including a balance of reservable chargers and first-come-first-served chargers.
3. Develop systems to aggregate and analyze data on MDHD ZEV travel and charging behavior, in order to identify fleet needs and inform future projects.

CSE’s recommendations and responses to select questions are discussed in detail below.

## Background and Overarching Recommendations

CSE appreciates the Energy Commission's efforts to assess the current state of the MDHD ZEV infrastructure market. CSE highlights that the MDHD ZEV market is still in a nascent stage and there is limited data available to adequately project future market needs. According to the Energy Commission's MDHD ZEV Station Development dashboard, there are approximately 11,000 MDHD charging or refueling ports, including 2,000 public charging or refueling ports, in California as of February 2024.<sup>1</sup> According to the Energy Commission's Second AB 2127 Assessment, California will need approximately 114,500 MDHD chargers (including 5,500 en route chargers) in 2030 and 264,000 MDHD chargers (including 8,500 en route chargers) in 2035.<sup>2</sup> In order to achieve this level of deployment, California will need to deploy over 100,000 MDHD chargers in the next five years and over 250,000 chargers in the next 10 years. CSE estimates that this level of infrastructure deployment could cost between \$19.5 and \$21.6 billion.<sup>3</sup> Moreover, CSE highlights that the lack of public, en route MDHD chargers will likely have disproportionate impacts on small fleets with 10 or fewer vehicles. These small fleets transport a significant portion of California's freight transport and may have limited access to private depot charging. Accordingly, CSE encourages the Energy Commission to prioritize the use of public funds to support the deployment of public, en route MDHD chargers for small fleets.

To support the development of the nascent MDHD ZEV market, CSE offers three overarching recommendations. First, CSE recommends the Energy Commission deploy MDHD ZEV charging stations along existing truck routes and freight corridors, which can leverage existing fleet operations. Second, CSE recommends the Energy Commission utilize a flexible approach in configuring MDHD ZEV charging stations, including deploying a mix of reservable and first-come-first-served chargers. This will allow stakeholders to test out different systems while accommodating changing industry needs and emerging technologies. This will also prevent the Energy Commission from committing significant investments in one system that may become outdated over time. Third, CSE recommends the Energy Commission develop systems to collect, aggregate, and analyze data on MDHD vehicle travel and MDHD charging behavior. This data

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<sup>1</sup> California Energy Commission, MDHD ZEV Station Development in California – Beta Version, accessed February 5, 2025.

<sup>2</sup> California Energy Commission, Assembly Bill 2127 Second Electric Vehicle Charging Infrastructure Assessment: Assessing Charging Needs to Support Zero-Emission Vehicles in 2030 and 2035.

<sup>3</sup> CSE's estimate is derived from studies conducted by Atlas Public Policy and the International Council on Clean Transportation (ICCT) that project investment requirements for charging infrastructure needed to meet national level targets for MD/HD vehicle electrification between 2030 and 2050.

will help identify fleet needs, such as the number and level of chargers needed to support California's fleet electrification goals. Additionally, this data can inform the development of future funding opportunities as well as consumer-facing tools, such as the reservation and scheduling systems discussed below.

### **Considerations for Public / En Route Charging Stations**

To support the deployment of public, en route chargers, which will help small fleets transition to electrified MDHD vehicles, CSE recommends the Energy Commission develop eligibility criteria that is aligned with existing fleet operations (as discussed in Question 1 of the RFI). For example, CSE encourages the Energy Commission to deploy MDHD ZEV charging stations along existing truck routes, truck stops, and freight corridors. CSE also recommends the Energy Commission leverage findings from existing initiatives to develop electric freight corridors, such as the California Transportation's Commission's SB 671 Clean Freight Corridor Efficiency Assessment<sup>4</sup> and the Joint Office of Energy and Transportation's National Zero-Emission Freight Corridor Strategy.<sup>5</sup> Ideally, charger locations will have sufficient grid capacity to meet the high electrical demands required for MDHD charging and will have sufficient physical space to support multiple vehicles and potentially distributed energy resources (DERs) that can offset high electrical loads.

Additionally, CSE recommends the Energy Commission leverage existing driver safety and equipment protection considerations used for light-duty charging stations, such as ensuring that chargers are in safe and well-lit locations, adjacent to amenities such as food and Wi-Fi, and supported by on-site attendees (as discussed in Question 12).

CSE also recommends that all publicly-funded MDHD ZEV chargers conform to applicable standards, such as connector standards (including existing and forthcoming standards), accessibility and payment standards, communication protocols, and data reporting requirements (as discussed in Question 13).

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<sup>4</sup> California Transportation Commission, SB 671 Clean Freight Corridor Efficiency Assessment, December 6, 2023.

<https://catc.ca.gov/-/media/ctc-media/documents/programs/sb671/sb671-final-clean-freight-corridor-efficiency-assessment-dor.pdf>

<sup>5</sup> Joint Office of Energy and Transportation, National Zero-Emission Freight Corridor Strategy, September 2024.

<https://driveelectric.gov/files/zef-corridor-strategy.pdf>

### **Reservable vs First-come-first-served Chargers**

CSE recommends the Energy Commission utilize a flexible and iterative approach to deploying MDHD charging infrastructure. Specifically, CSE encourages the Energy Commission to deploy MDHD charging stations that include a mix of both chargers available via reservation systems and chargers available via a first-come-first-served model (as discussed in Question 2 of the RFI). CSE does not recommend a particular percentage or ratio of chargers that should be available via reservation or available to the public via a first-come-first-served model (as discussed in Questions 6 and 9 of the RFI). However, CSE suggests that it may be appropriate to allocate a higher number of chargers for the reservation system in the near-term since there are relatively few MDHD ZEVs currently in use and the demand for public charging may be relatively low. Additionally, those fleet operators with MDHD ZEVs will need access to reliable charging, which can be facilitated through the reservation model.

Similarly, CSE does not recommend an optimal model for the public MDHD charging network or an individual site configuration (as discussed in Questions 14 and 15 of the RFI). CSE contends that there is not enough market data to indicate a preference for an optimal model at this time. As discussed below, CSE encourages the Energy Commission to collect data that analyzes vehicles' travel and charging behavior and forecasts fleets' needs over time. This data could then be used to inform funding opportunities that support widespread MDHD electrification.

### **Reservation Systems and Protocols**

CSE supports the use of reservation systems to facilitate charging, including identifying available chargers and scheduling charging sessions (as discussed in Questions 3, 4, and 11 of the RFI). Reservation systems provide a benefit to the state by ensuring that MDHD fleet operators will have access to reliable charging (as discussed in Question 11). CSE is not aware of any existing systems that could meet these needs (as discussed in Question 4 of the RFI). CSE contends that an ideal reservation system would need to be publicly-available, rather than reliant on payment-based memberships or subscriptions, and would need to display real-time charger availability, including whether the charger is operational, in-use, or scheduled to be in-use soon (as discussed in Question 7 of the RFI). Ideally, reservation systems would also include the capability to integrate with vehicle telematics systems used by fleets and vehicle-grid integration systems used for bidirectional charging.

In addition to reservation system availability, CSE encourages the Energy Commission to work with fleet operators, charging developers, and other key stakeholders in order to develop rules

for reservation systems, including protocols for ensuring that reserved chargers are available for scheduled charging sessions (as discussed in Questions 10 and 16 of the RFI). CSE suggests that having attendees available on-site would help ensure that chargers are available and functioning as expected (as discussed in Questions 10 and 12 of the RFI). In addition to having attendees available, CSE encourages the Energy Commission to develop systems for ensuring that chargers can be maintained and repaired on a regular schedule. Ideally, these considerations would be detailed in operations and maintenance plans that are developed prior to the opening of the charging station.

### **Data Collection and Analysis**

CSE recommends the Energy Commission develop standards and systems to collect, aggregate, and analyze MDHD vehicle and charging data. Specifically, CSE recommends the Energy Commission work with fleet operators to leverage telematics data from fleet vehicles. The Energy Commission could use this data to determine ideal charging station locations and to enhance reservation scheduling, including estimating the amount of time it takes for a vehicle to reach a charger. Additionally, the Energy Commission could use MDHD charging data to inform the development of future charging stations by estimating the number and capacity of chargers that may be needed. MDHD charging data can also enhance broader grid planning initiatives, such as the Energy Commission's Integrated Energy Policy Report (IEPR), the California Public Utilities Commission's transportation electrification proceeding (Rulemaking 23-12-008), and the utilities' distribution grid planning efforts. CSE suggests the Energy Commission leverage the forthcoming EV charging infrastructure reliability reporting and performance standards<sup>6</sup> to inform the development of similar requirements for operators of MDHD chargers. Ideally, these MDHD data reporting standards would include the collection of both session and interval data, which can be used to develop charging load profiles that enhance grid planning. Moreover, the data collected from MDHD ZEV charger projects can inform the development of consumer-facing tools, such as the reservation systems described above and public dashboards used to track MDHD charger availability, utilization, and reliability. Lastly, CSE encourages the Energy Commission to continuously engage with fleet operators, charging providers, utilities, and other key stakeholders in order to ensure that appropriate

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<sup>6</sup> California Energy Commission, Electric Vehicle Charging Infrastructure Reliability Reporting and Performance Standards.

<https://www.energy.ca.gov/proceedings/active-proceedings/electric-vehicle-charging-infrastructure-reliability-reporting-and>

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data is being collected to support fleet needs and facilitate the electrification of the MDHD sector.

### **Conclusion**

CSE appreciates the opportunity to provide these comments. CSE looks forward to the Energy Commission's proposals for MDHD charging projects.

Sincerely,

A handwritten signature in black ink, appearing to read "K. Chatterjee", is placed over a light gray rectangular background.

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