ZETA | ZERO EMISSION TRANSPORTATION ASSOCIATION

November 12, 2024

Docket Management Facility
U.S. Department of Transportation
1200 New Jersey Avenue SE
West Building Ground Floor, Room W12-140
Washington, DC 20590

RE: Docket No. FHWA-2024-0028
Notice of Request for Information (RFI) on Medium- and Heavy-Duty Electric Charging Technologies and Infrastructure Needs
Submitted via Rulemaking Portal: https://www.regulations.gov.

The Zero Emission Transportation Association (ZETA) is an industry-backed coalition of over 50 member companies advocating for 100% electric vehicle (EV) sales. ZETA is committed to enacting policies that drive EV adoption, create hundreds of thousands of jobs, dramatically improve public health, and significantly reduce emissions. Our coalition spans the entire EV supply chain including vehicle manufacturers, charging infrastructure manufacturers and network operators, battery manufacturers and recyclers, electricity providers, and critical minerals producers, among others.

ZETA appreciates the opportunity to share information with the Federal Highway Administration (FHWA) regarding the future trajectory and development of Medium- and Heavy-Duty Electric Vehicle (MHDEV) charging infrastructure. Our comments are intended to illustrate broad trends in MHDEV charging and list recommendations for regulation and processes related to the adoption of MHDEV charging infrastructure. We have encouraged our members to individually respond to more specific questions related to station needs, vehicle charging patterns, charger technologies, and other responses solicited by FHWA.

Affordable charging infrastructure is one of the most commonly cited barriers to MHDEV adoption, making efficient deployment of capital and infrastructure crucial.[1] Charging needs for fleet-owned MHDEVs differ significantly from those of consumer-owned light-duty EVs. MHDEVs tend to have higher-capacity batteries requiring faster charging rates, longer charge times, or a combination of both. As a result, charging solutions must also be tailored to each fleet and use case. To ensure upfront capital is allocated to the appropriate electric vehicle supply equipment (EVSE), charging installation projects can benefit from a customized analysis of a

[1] "Medium- and Heavy-Duty Electrification: Weighing the Opportunities and Barriers to Zero-Emission Fleets ," ZETA, January 2022.
https://fs.hubspotusercontent00.net/hubfs/8829857/ZETA-WP-MHDV-Electrification_Opportunities-and-Barriers_Final3.pdf

fleet's needs based on fleet size and type, average VMT, duty cycles, and projected time of charging.

Private depot stations are expected to account for the vast majority of MHDEV charging

ZETA anticipates that private charging stations will make up a majority of future MHDEV charging stations, especially in the near term. As studied by the International Council on Clean Transportation (ICCT), the majority of class 4-8 HDEV charging will occur at depots, with the exception of single-unit long-haul trucks.[2] Atlas Public Policy also estimates that depot charging will make up 75 to 90 percent of all MHDEV charging by 2030.[3] Additionally, the vehicle segments most immediately suited to electrification are transit buses and delivery vans, which travel shorter distances on regular routes and utilize return-to-base operations that are ideally suited for private depot charging.[4]

Private charging stations offer convenience for fleet operators by enabling customizable solutions to meet the fleet's specific needs. ICCT anticipates that some fleet operators will attempt to maximize overnight charging for their vehicles, due to both lower electricity costs in some cases and lower costs of infrastructure for lower-powered charging stations.[5] Fleets that operate around-the-clock may choose to implement higher-powered charging solutions to take advantage of downtime between driver shifts. MHDEV charging times will vary depending on the type of charger used and the size of each vehicle's battery, as well as the use case of each specific vehicle and operational objective. Wait times at depot-based charging can be minimized through optimized scheduling customized to specific fleet duty cycles and implementation of reservation systems can reduce wait times at public charging sites.

Regulation should support innovative and safe charging solutions

ZETA believes that performance-based, technology-neutral standards for MHDEV charging infrastructure are the best way to preserve flexibility and foster innovation in a rapidly evolving market. As of November 2024, no MHDEV-specific charging standards have been approved by U.S. regulatory bodies or otherwise. The specific technical details of any future approved standards are unclear, as well as their propriety and applicability to a wide variety of vehicle models and use cases. We believe that charging owners and operators have a sophisticated, 'ground-up' understanding of the drivers and fleet operators they serve, and are therefore best suited to determine which specific technologies to deploy to customers. Technology-neutral

[2] Near-Term Infrastructure Deployment to Support Zero-Emission Medium- and Heavy-Duty Vehicles in the United States, International Council on Clean Transportation, (May 2023) https://theicct.org/wp-content/uploads/2023/05/infrastructure-deployment-mhdv-may23.pdf
[3] "U.S. Vehicle Electrification Infrastructure Assessment," Atlas Public Policy, November 12, 2021. https://atlaspolicy.com/wp-content/uploads/2021/11/2021-11-12_Atlas_US_Electrification_Infrastructure_Assessment_MD-HD-trucks.pdf
[4] *Id*. at footnote 1.
[5] *Id*. at footnote 2.

requirements, including conforming to standards from the Society of Automotive Engineers (SAE) and certification to appropriate Underwriters Laboratories (UL) standards, are the most appropriate regulations to ensure continued innovation and competition in MHDEV charging.

ZETA's members stand by the safety of their charging products. It is important to understand that most MHDEVs are operated by professional drivers employed by fleet operators, and as such, are provided with the necessary safety training required to operate their vehicles and associated charging equipment. Charging operators provide the necessary safety information to businesses and their drivers, and encourage fleet operators to ensure that their employees are adequately trained. Adequate understanding of the safety risks associated with charging will be most robust in the case of privately owned depot-based charging stations, where drivers will interact and gain familiarity with the same types of chargers in the same locations each day.

The Megawatt Charging Standard (MCS), as proposed by CharIN, includes safety provisions and is intended to be galvanically isolated from the grid whenever not mated with a vehicle. This will ensure that drivers are not exposed to high voltage or high temperature when operating the charging system.[6] ZETA and its members will continue to engage on the evolution and implementation of the MCS standard and advocate for high safety standards in order to ensure the safe and reliable buildout of MHDEV charging. Seeing as the MCS standard has not yet been finalized, we urge FHWA to avoid promulgating any specific design standards for MHDEV charging that could potentially delay or complicate the development of MHDEV charging system standards. We also recommend against FHWA applying the current NEVI minimum standards to MHDEV charging, as doing so may inadvertently hinder MHD charging deployment given differences, for example, in connector types between light-duty and MHD charging needs.

Community engagement on MHDEV charging infrastructure should fully account for the benefits of electrification

ZETA supports community engagement designed to educate the public on the benefits of MHDEV charging and address any potential concerns. It is important to consider flexible and context-specific community engagement when deploying charging infrastructure, especially private charging depots for fleet operators, which are often located in industrially zoned areas that have historically had negative impacts on air quality for nearby communities. Engagement with stakeholders should make the benefits of charging infrastructure clear, namely its positive impact on local air quality through facilitating increased MHDEV deployment and replacing combustion vehicles.

[6] "CharIN Whitepaper Megawatt Charging System (MCS)" CharIN, November 24, 2022. https://www.charin.global/media/pages/technology/knowledge-base/c708ba3361-1670238823/whitepaper_megawatt_charging_system_1.0.pdf

Many advantageous use cases for MHDEVs involve their integration into public fleets, such as transit buses or school buses; these decisions should be made with community input while making the economic and public health benefits clear to the public. Lifetime savings attributable to reduced costs of operating MHDEVs should be calculated and considered, and their impact, for example, on local governments' and school districts' ability to serve their constituents in other areas. Highly local public health benefits should also be discussed, namely the reduction in exposure to diesel fumes of schoolchildren and riders on public transportation.[7] Impacts on local communities related to the physical construction and operation of MHDEV charging infrastructure should also be balanced against the need for governments to be good stewards of public money when representing those same communities.

Conclusion

We thank FHWA for the opportunity to share information regarding the future trajectory and development of Medium- and Heavy-Duty Electric Vehicle charging infrastructure. MHDEV charging is still in the early stages of deployment, but is attracting increasingly significant investment as more MHDEV models enter the market and fleet operators learn more about the benefits of MHD electrification. ZETA and its members are committed to building out MHDEV charging infrastructure and assisting in the electrification of the nation's MHDV fleets, and look forward to further engagement with FHWA on these issues. If you have any questions or concerns, please contact me at al@zeta.org.

Sincerely,

Albert Gore
Executive Director
Zero Emission Transportation Association

[7] *Id*. at footnote 1.