in Part 91, Section 91.706, as established by a final rule published April 9, 1997 (62 FR 17487, Apr 9, 1997). Aircraft operators seeking specific operational approval to conduct RVSM operations outside the U.S. must submit their application to the responsible Flight Standards office. The responsible Flight Standards office registers RVSM approved airframes in the FAA RVSM Approvals Database to track the approval status for operator airframes. Application information includes evidence of aircraft equipment and RVSM qualification information along with operational training and program elements.

Respondents: Operators are required to submit application for RVSM specific approval if they desire to operate in RVSM airspace outside the U.S. or if they do not meet the provisions of title 14 of the Code of Federal Regulations (14 CFR), part 91, appendix G, section 9—Aircraft Equipped with Automatic Dependent Surveillance—Broadcast Out. The FAA estimates processing 900 initial applications annually and 2,136 annual updates to existing approvals.

Frequency: An Operator must make application for initial specific approval to operate in RVSM airspace, or whenever requesting an update to an existing approval.

Estimated Average Burden per Response: 4.00 hours for updates to existing applications and 6.8 hours for application of initial approvals.

Estimated Total Annual Burden: 14,664 hours.

Issued in District of Columbia on September 6, 2024.

Douglas J. DiFrancesco,

Aviation Safety Inspector, FAA Flight Technologies & Procedures Division.

[FR Doc. 2024–20628 Filed 9–11–24; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

[Docket No. FHWA–2024–0028]

Notice of Request for Information (RFI) on Medium- and Heavy-Duty Electric Charging Technologies and Infrastructure Needs

AGENCY: Federal Highway Administration (FHWA), Department of Transportation (DOT).

ACTION: Notice; request for information (RFI).

SUMMARY: The FHWA, along with the Joint Office of Energy and Transportation (Joint Office), invites public comment on this request for information (RFI) regarding the Medium- and Heavy-Duty Electric Charging Technologies and Infrastructure Needs. This RFI seeks input in four areas to support medium and heavy-duty (MHD) battery electric vehicles (EV) (DOT vehicle classes 4 through 8) including: unique EV charger and station needs; vehicle charging patterns; MHD EV charger technology and standardization; and workforce, supply chain, and manufacturing to support charging of MHD battery EVs. The goal is to inform appropriate future Federal Government activities to support the development and deployment of EV chargers to support the anticipated needs of MHD EV original equipment manufacturers, fleet operators, drivers, charging station operators, and electric utilities. Comments should also address how to balance advances in technology with the need to expeditiously build out the national EV charging infrastructure, including support for MHD segments.

DATES: Responses to the RFI must be received by November 12, 2024. Late-filed comments will be considered to the extent practicable.

ADDRESSES: Interested persons are encouraged to submit comments using the Federal eRulemaking Portal at *www.regulations.gov,* under docket number FHWA–2024–0028. Follow the instructions for submitting comments. Alternatively, interested persons may submit comments, identified by docket number FHWA–2024–0028, by any of the following methods:

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

Hand Delivery/Courier: West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE, Washington, DC 20590, between 9:00 a.m. and 5:00 p.m. E.T., Monday through Friday, except Federal holidays. The telephone number is (202) 366–9329.

Docket: The docket for this activity, which includes **Federal Register** notices, comments, and other supporting documents/materials, is available for review at *www.regulations.gov.* All documents in the docket are listed in the *www.regulations.gov* index. However, not all documents listed in the index may be publicly available, such as information that is exempt from public disclosure.

FOR FURTHER INFORMATION CONTACT: Questions about this notice may be addressed to Suraiya Motsinger, FHWA Office of Natural Environment, via email at *Suraiya.motsinger@dot.gov* or telephone (202) 366–4287 or Sarah Hipel, Joint Office of Energy and Transportation, via email at *sarah.hipel@ee.doe.gov* or telephone (240) 994–0050.

For legal questions, please contact Dawn Horan, FHWA Office of Chief Counsel, via email at *Dawn.M.Horan@dot.gov* or telephone (202) 366–9615 or Matthew Schneider, U.S. Department of Energy (DOE), Office of the General Counsel, via email at *matthew.schneider@hq.doe.gov* or telephone at (240) 597–6265.

SUPPLEMENTARY INFORMATION:

Electronic Access and Filing

A copy of this notice, all comments received on this notice, and all background material may be viewed online at *www.regulations.gov* using the docket number listed above. Electronic retrieval assistance and guidelines are also available at *www.regulations.gov.* An electronic copy of this document may also be downloaded from the Office of the Federal Register's website at: *www.FederalRegister.gov* and the U.S. Government Publishing Office's website at: *www.GovInfo.gov.*

Background

Vehicle manufacturers and operators are deploying MHD EVs at an increasing rate with a recent report citing the availability of over 160 models and over 17,500 zero emission trucks in operation—a nearly 10-fold increase from just 3 years ago.[1] This trend in MHD EV adoption is driven by a combination of factors, including declining battery costs, improvements in vehicle performance and range, and growing recognition of the economic and environmental benefits associated with electrification.

The regulatory landscape governing MHD EVs (DOT vehicle classes 4 through 8) is evolving rapidly as well, driven in part by imperatives to reduce greenhouse gas emissions and criteria pollutants. Examples of such regulations include performance-based emission standards by the U.S. Environmental Protection Agency[2] and the Advanced Clean Trucks rule through the California Air Resources Board,[3] which other States may elect to adopt consistent with Section 177 of the Clean Air Act (42 U.S.C. 7507).

[1] *https://calstart.org/wp-content/uploads/2024/01/ZIO-ZET-2024_010924_Final.pdf.*

[2] *https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-greenhouse-gas-emissions-standards-heavy-duty.*

[3] *https://afdc.energy.gov/laws/12473.*

Fleet operators, cognizant of the long-term sustainability and cost advantages offered by electric propulsion, are increasingly embracing EVs as viable alternatives to conventional diesel-powered vehicles. The momentum toward electrification is further propelled by corporate sustainability goals, regulatory compliance pressures, and the emergence of innovative business models that prioritize operational efficiency and environmental stewardship.

Increased adoption by fleets, the need to address the climate crisis, and the compelling total cost of EV ownership create a well-timed backdrop for federal investments in the Bipartisan Infrastructure Law [4] and the Inflation Reduction Act.[5] These investments will support the buildout of the electrical generation, distribution, and charging network needed to provide clean, affordable, and reliable energy to a sector that accounts for 23 percent of transportation emissions despite accounting for only five percent of vehicles on the road.[6] These investments will help meet U.S. federal goals of 100 percent new zero-emission truck and bus sales by 2040, with an interim goal of 30 percent new zero-emission vehicle sales by 2030.[7]

Stakeholders across the public and private sectors are mobilizing efforts to accelerate the expansion of charging infrastructure networks, enhance interoperability standards, and facilitate strategic investments in key infrastructure corridors. For example, the Joint Office of Energy and Transportation, in collaboration with the U.S. Department of Energy, Department of Transportation, and the Environmental Protection Agency, released in March of 2024 an all-of government National Zero-Emission Freight Corridor Strategy.[8] The Strategy provides a phased approach to prioritizing planning, investment and deployment of MHD vehicle charging and hydrogen refueling infrastructure within freight hubs and along corridors to realize a complete zero-emission freight network by 2040. The privately led Powering America's Commercial Transportation Coalition [9] (PACT) brings together vehicle and infrastructure manufacturers, fleets, utilities and other key stakeholders to collaborate on solutions to accelerate the pace of transportation electrification for MHD EVs. By proactively addressing the need for robust charging infrastructure, stakeholders can catalyze the transition to a cleaner, more sustainable transportation ecosystem, while positioning the industry for long-term success in an increasingly electrified future.

The charging requirements for MHD EVs vary widely, reflecting the diverse operational profiles and energy demands within this sector.[10] This spectrum ranges from vehicles engaged in on-demand operations with structured schedules, such as urban delivery trucks and transit buses, to inter-city and regional transit vehicles, like coaches and tractor trailers that cover longer distances between urban centers. In addition, fleet operators can often use vehicles to meet multiple use cases and duty cycles (*e.g.,* municipal sanitation trucks that double as snowplows in the winter months). Shorter haul vehicles can often use centralized charging depots with the opportunity for lower power charging. At the other end of the spectrum, long-haul and over-the-road applications, exemplified by heavy-duty trucks engaged in Interstate freight transportation, may require ultra-fast charging capabilities to allow trucks to quickly get back on the road. These vehicles operate continuously for extended periods, necessitating strategically located charging stations along major transportation corridors to facilitate rapid turnaround times or provide parking facilities with charging. Developing a charging infrastructure ecosystem entails addressing this spectrum of use cases comprehensively, ensuring that solutions are scalable, adaptable, and aligned with the evolving needs of the transportation industry.

Purpose

This RFI seeks input in four areas to support charging of MHD EVs: (1) unique EV charger and station needs; (2) vehicle charging patterns; (3) MHD EV charger technology and standardization; and (4) workforce, supply chain, and manufacturing. The information received from this RFI will inform government activities to support the development and deployment of EV chargers to meet the anticipated needs of MHD EV original equipment manufacturers, fleet operators, drivers, charging station operators, and electric utilities. This RFI also seeks to understand MHD EV charging as a whole, rather than through transportation and electricity-specific lenses. Increasing understanding and awareness across all relevant sectors is key to ensuring that electric MHD vehicle fleet operators and charging networks:

- Support a modern electric grid and create widespread benefits for fleet operators, communities, and all ratepayers; and
- Are served by energy regulatory environments and public policies that reflect the wide variety of vocational needs, use cases, and duty cycles for electric medium and heavy-duty buses and trucks.

Though hydrogen refueling can provide a zero-emission fuel option for commercial MHD vehicles, this RFI only seeks information on electric charging considerations for MHD EVs.

Disclaimer and Important Notes

This RFI is not a Notice of Funding Opportunity (NOFO) or Funding Opportunity Announcement (FOA). Any information obtained as a result of this RFI is intended to be used by the Government on a non-attribution basis for planning and strategy development and may be shared with other Government agencies; this RFI does not constitute a formal solicitation for proposals or abstracts. Your response to this notice will be treated as information only. FHWA and the Joint Office will both review and consider all responses in formulating program strategies for the identified materials of interest that are the subject of this request. Neither FHWA nor the Joint Office will provide reimbursement for costs incurred in responding to this RFI. Respondents are advised that FHWA and the Joint Office are under no obligation to acknowledge receipt of the information received or provide feedback to respondents with respect to any information submitted under this RFI. Responses to this RFI do not bind FHWA or the Joint Office to any further actions related to this topic.

Confidential Business Information

Confidential Business Information (CBI) is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this notice contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or

[4] *https://www.congress.gov/bill/117th-congress/house-bill/3684.*

[5] *https://www.congress.gov/bill/117th-congress/house-bill/5376.*

[6] *https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions.*

[7] *https://www.energy.gov/sites/default/files/2023-01/the-us-national-blueprint-for-transportation-decarbonization.pdf.*

[8] *https://driveelectric.gov/files/zef-corridor-strategy.pdf.*

[9] *https://www.pactcoalition.org/.*

[10] *https://www.nrel.gov/docs/fy22osti/81656.pdf.*

responsive to this notice, it is important that you clearly designate the submitted comments as CBI.

You may ask FHWA to give confidential treatment to information you give to the Agency by taking the following steps: (1) Mark each page of the original document submission containing CBI as ''Confidential''; (2) send FHWA, along with the original document, a second copy of the original document with the CBI deleted; and (3) explain why the information you are submitting is CBI. FHWA will make its own determination about the confidential status of the information and treat it according to its determination. FHWA will protect confidential information complying with these requirements to the extent required under applicable law. If DOT receives a FOIA request for the information that the applicant has marked in accordance with this notice, DOT will follow the procedures described in its FOIA regulations at 49 CFR 7.29. Only information that is marked in accordance with this notice and ultimately determined to be exempt from disclosure under FOIA and 49 CFR 7.29 will not be released to a requester or placed in the public docket of this notice. Submissions containing CBI should be sent to: Suraiya Motsinger, FHWA, 1200 New Jersey Avenue SE, HICP–20, Washington, DC 20590 via mail, or *Suraiya.motsinger@dot.gov* via email. Any comment submissions that FHWA receives that are not specifically designated as CBI will be placed in the public docket for this matter.

Confidential information collected in this RFI will also be shared with the Joint Office consistent with Congressional direction that the minimum standards and requirements for EV chargers be developed in coordination between DOT and DOE. The Joint Office will protect any such shared information in accordance with applicable DOE standards, as DOE serves as host for the Joint Office.

Evaluation and Administration by Federal and Non-Federal Personnel

Federal employees are subject to the non-disclosure requirements of a criminal statute, the Trade Secrets Act, 18 U.S.C. 1905. The Government may seek the advice of qualified non-Federal personnel. The Government may also use non-Federal personnel to conduct routine, nondiscretionary administrative activities. The respondents, by submitting their response, consent to FHWA and the Joint Office providing their response to non-Federal parties. Non-Federal parties given access to responses must be subject to an appropriate obligation of confidentiality prior to being given the access. Submissions may be reviewed by support contractors and private consultants.

Request for Information Categories and Questions

The following list of questions are of particular interest to FHWA and the Joint Office. Commenters are not required to answer every question and commenters should not view the list as a constraint on sharing additional information relevant to MHD EV charging technologies and infrastructure needs.

Category 1: Unique EV Charger and Station Needs

1. *Market Evaluation:* Please provide any information or plans that you have regarding the adoption of MHD EVs now and anticipated growth over time (by 2030 and 2040) by vehicle type (please refer to FHWA's vehicle classification definitions).[11]

2. *Station Development Considerations:* What factors should be considered for the siting, location and development of a MHD EV charging station? What features and site design elements need to be considered for a station designed to support MHD EVs deployed in the next five years considering both depot and en-route charging applications? How should grid interconnectivity/capacity be considered in the site design for MHD EV stations? Should certain site design elements be standardized (*e.g.,* number of ports, physical dimensions/spacing between charging ports, pull-through charging bays, co-location with other fuels) or is flexibility needed to accommodate different MHD EV charging scenarios and site constraints?

3. *Public vs. Private Charging Requirements:* What is the anticipated make up of publicly available charging sites vs. charging sites with exclusive or limited access? How are public and private charging sites likely to differ? What are the potential constraints between private and public charging with regards to charger availability?

4. *Safety Considerations:* What are the safety considerations for charging MHD EVs at a public station vs. a private station, including personal safety and safe operations? What specific safety considerations are important to consider for high-power (*e.g.,* megawatt level) charging?

5. *Community Engagement:* What are best practices for engaging communities for the deployment of charging infrastructure for MHD EVs? What community needs should be accounted for when siting a location for a MHD EV charging station?

6. *Distance Requirements between Stations:* What would be an appropriate maximum distance between MHD EV public charging stations along an Interstate highway? From an Interstate highway? What are the typical mileage ranges of MHD EVs? Why and how might this consideration change over time?

7. *MHD EV Charging Times:* What is the expectation of charging and/or dwell times for MHD EVs and how does that vary by use case or other factors?

8. *Overnight Parking/Charging Needs:* What is the anticipated need for overnight or long-duration parking for MHD EVs over the next 3 to 5 years and/or longer-term? Should these spaces be dedicated for electric MHD vehicles that are actively charging? Should these spaces also be made available for electric MHD trucks that are not actively charging or non-electric MHD vehicles?

9. *Delivering Power to a Site:* What actions are currently being taken by electric utilities or can electric utilities take to ensure that necessary power is available in MHD EV charging locations? What actions are currently being taken by MHD fleet owners/operators or can MHD fleet owners/operators take to ensure that necessary power is available in MHD EV charging locations?

10. *Demand Response and Managed Charging:* What demand response or managed charging strategies are needed and/or have been employed successfully for MHD charging locations?

11. *Role of Onsite Energy Storage and Generation:* What role is on-site energy storage and generation playing or could play in supporting MHD EV charging needs? What actions are needed to enable the utilization of cost-effective energy storage and generation?

12. *Grid Interaction:* What scenarios or use cases would be ideal for exporting power from charging sites back to the grid? What actions are needed to enable cost-effective exportable power?

13. *Turning Radius:* What are the turning radii that should be considered to service most MHD EVs at a site?

14. *Driver Amenities:* Where applicable, what driver amenities (such as on-site restrooms, dining, or shopping) or fleet services (such as vehicle inspections) can or should be considered for a station designed to support MHD EVs deployed in the next

[11] Chapter 2. Introduction to Vehicle Classification—Verification, Refinement, and Applicability of Long-Term Pavement Performance Vehicle Classification Rules, November 2014—FHWA–HRT–13–091 (*dot.gov*).

5 years that will charge: (i) at public en-route chargers; (ii) at freight destinations; and (iii) in publicly accessible private or quasi-public depots? Do needs for on- or conveniently located off-site amenities at stations designed for MHD EVs differ from those designed for light-duty EVs?

15. *Fleet Lessons Learned:* For fleets experienced in operating and charging MHD EVs, what are some important lessons learned that should be incorporated in the buildout of national infrastructure to support charging activities?

16. *Equity:* What equity-related challenges or benefits could be associated with MHD EV charging? What strategies could increase those benefits or mitigate those challenges? Are there considerations important to independent owner operators and small fleets?

Category 2: Vehicle Charging Patterns

17. *Minimum Power Requirements:* Is there a preferred minimum power level (including any specific voltage or current requirements), both per charging port and per charging station, to adequately serve MHD EV needs in public locations now? In 5 years? In 10 years? Is there a minimum number of MHD charging ports at a charging station that would make it useful as an MHD charging site? Are there alternative performance-based requirements that should be considered for the provision of a minimum number of MHD charging ports or total power available?

18. *Uptime Reliability:* Should uptime, as a performance-based standard, account for all minimum performance shortfalls, *e.g.,* power sharing, voltage inadequacy, sites relying on supplemental energy storage, incompatible connectors/need for adapters, payment system or network outages, or other EV charger limitations that fail to deliver specified minimum performance requirements? If uptime is insufficient to measure all shortfalls, what parameters should be included to ensure reliable and comprehensive service?

19. *Charge Time Accessibility:* What are the best methods for supporting MHD EV fleets that primarily charge enroute or at destination locations? What considerations should be given for first-come, first-served and/or appointment-based scenarios for vehicle charging at a station?

20. *Charging Needs Across Vehicle Use Case:* How does MHD EV charging vary across different vehicle classes, use cases, and market segments: at private or quasi-public depots, en-route (public) locations, destinations, or a mix? What does that mix look like to form a coherent national network?

Category 3: MHD EV Charger Technology and Standardization

21. *Megawatt Charging Standard:* What is the anticipated adoption timeline for megawatt charging system (MCS), and other proprietary and non-proprietary connectors, on charging infrastructure in various MHD segments and is there a preferred connector standard? Is it preferable to have multiple connector types at MHD public charging locations or a single type?

22. *MHD EV Controllers and Management System Considerations:* How are EV charge controllers and battery management systems different in MHD EVs than in light-duty passenger EVs? How do charge controllers differ in EV chargers designed for MHD EVs compared to chargers designed for light-duty passenger EV applications?

23. *Cybersecurity Considerations:* How does cybersecurity factor into the product or systems engineering process? Are there specific cybersecurity standards, frameworks, or controls that are commonly used in the industry? What cybersecurity considerations are important in the near-term (12–36 months)? What cybersecurity concerns need to be addressed for MHD EV charging in the longer-term?

24. *Alternative Charging Technology Solutions:* Are there additional standards or technologies, such as inductive charging or bi-directional charging, that should be considered? If so, please provide information about these technologies, their benefits, and their anticipated industry adoption timeframes.

25. *Performance-Based Standards:* Are there performance-based alternatives (*i.e.,* standards that specify a level of service and types of vehicles a charger must support without specifying specific connectors) to specifying charging standards and communications standards by reference that would support a convenient, affordable, reliable, and equitable MHD EV charging network while reducing the need for future refinement to federal regulations?

26. *Key Performance Indicators:* Should performance-based standards include requirements for achieving Key Performance Indicators most important to MHD EV customers? If so, what should those Key Performance Indicators be?

27. *Market Impact of Standardization:* How would standardization affect the ability of firms to compete? [12] Will proposed or anticipated industry standards favor or disfavor any market participants? Will proposed or anticipated industry standards impact the ability of firms to enter the market? If so, how? How could the process for developing technology standards for EV charging and related technologies be more fair, open, and/or transparent?

Category 4: Workforce, Supply Chain, and Manufacturing

28. *Workforce Needs for MHD EV Charging Infrastructure:* What are the workforce needs associated with manufacturing, installing, and/or maintaining MHD EV chargers? What are the current gaps in workforce development for MHD EV charging infrastructure deployment? Who are the critical stakeholders and what is needed to promote workforce development for MHD EV charging infrastructure? Do training programs exist for workers on the installation of EV chargers with power levels beyond those available today for light-duty vehicles? If yes, please provide details of the program and the availability of a qualified workforce.

29. *High Power Charger Availability for MHD EVs:* What is the expected commercial availability (both timing and volume) of the MCS or other proprietary connectors, cable assemblies, EV chargers, and adaptors? What safety standards will these products be certified against? Please provide any specifics on vehicle class, vocation, expected charging port type, pricing, and timing.

30. *Additional Information:* Is there anything additionally that should be considered related to MHD charging technologies and infrastructure needs that is not covered in the above questions?

Issued in Washington, DC under authority delegated in 49 CFR 1.81 and 1.83.

Shailen P. Bhatt,

Administrator, Federal Highway Administration.

[FR Doc. 2024–20423 Filed 9–11–24; 8:45 am]

BILLING CODE 4910–22–P

[12] See Office of Information and Regulatory Affairs, Guidance on Accounting for Competition Effects When Developing and Analyzing Regulatory Actions (Oct. 2023), *https://www.whitehouse.gov/wp-content/uploads/2023/10/RegulatoryCompetitionGuidance.pdf.*