



August 23, 2023

The Honorable Katherine S. Dykes
Commissioner
Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

RE: Proposed Amendment to Section 22a-174-37 of the Regulations of Connecticut State Agencies

Dear Commissioner Dykes:

On behalf of the American Bus Association (ABA), I submit these comments in response to the Connecticut Department of Energy & Environmental Protection's (DEEP) Notice of Intent to Amend Air Quality Regulations and Revise the State Implementation Plan, signed July 21, 2023 (Notice). The stated purpose of DEEP's action is to adopt the California Low NOx 'Omnibus' (Omnibus) and Advanced Clean Trucks (ACT) regulations, promulgated by the California Air Resource Board (CARB) and collectively referred to herein as the Emissions Regulations. Before proceeding with the adoption of these regulations, ABA believes there are a number of outstanding issues DEEP should clarify, in addition to more fully considering the impact of these regulations on aspects of the State's transportation providers and transportation system.

The ABA is a non-profit industry national trade association representing private bus and motorcoach operators, manufacturers, and suppliers, in addition to tour/travel entities, destination marketing organizations and convention and visitors' bureaus. Our members provide critical transportation services supporting employment, education, recreation, emergency response and defense activities within the state of Connecticut and throughout the country. The bus industry is also the leading public transportation mode serving the needs of rural and underprivileged communities in a safe and economical manner. Private bus operators are key partners with the other modal operations, including public transits, Amtrak and airlines, ensuring a robust national transportation network is accessible to all.

Bus operations, by design, are one of the most environmentally forms of transportation. A motorcoach vehicle can take up to 35 personal vehicles off the road, providing both congestion relief and emissions reduction. Also, with the advent of cleaner burning fuels and advancement in emissions technology through the years, bus operations have increasingly become more

efficient and effective in reducing the industry’s carbon footprint.¹ As an industry, bus operators are proud of these efforts and eager to pursue continued advancements in the race to address climate change, including the pursuit of zero-emission vehicles (ZEVs). However, it is crucial to the survival of the industry that this pursuit be reasonable, and account for both the historical benefits buses have made toward emissions reductions as well as the technological and economic feasibility of making the transition to ZEVs.

With these considerations in mind, we offer the following comments:

Procedural Concerns

Initially, ABA seeks clarification on the process enabling DEEP to proceed with adopting the Emissions Regulations at this time. It is our understanding CARB is still awaiting approval of its waiver request to the Environmental Protection Agency (EPA) for the Omnibus regulation per the Clean Air Act, and has requested additional time before the Agency acts on the waiver request.² Further, as announced on June 28, 2023, CARB entered into an agreement³ (Agreement) with various heavy-duty on-highway manufacturers, committing to, among other things, amend its Omnibus regulation. CARB has since issued a notice soliciting comments on its proposed amendments to the Omnibus regulation.⁴ Based on these actions, it is premature for DEEP to proceed any further toward adopting the Omnibus regulation at this time. According to Section 177 of the Clean Air Act, which DEEP cites as its authority to proceed with this action, for a state to adopt California’s standard, EPA must first grant a waiver for the standard.⁵ For this reason, ABA believes DEEP should suspend this proceeding, which will also provide the opportunity for DEEP to gain a better understanding of the private bus and motorcoach industry and the effect the Emissions Regulations would have on industry operations.

The ABA also notes that DEEP conducted, and included in the docket, a Small Business Impact Statement or Regulatory Flexibility Analysis (Analysis), as required by the Connecticut Uniform Administrative Procedure Act (Act).⁶ Section 4-168a of the Act requires that prior to adoption by an agency of any proposed regulation that may have an adverse impact on small businesses, that agency must notify the Connecticut Department of Economic and Community Development and the joint standing committee of the General Assembly having cognizance of the matters relating to commerce of its intent to adopt the proposed regulation.⁷ According to DEEP’s Analysis, its action in this proceeding will have “no direct impacts on small businesses.”⁸ DEEP

¹ Updated Comparison of Energy Use and CO₂ Emissions from Different Transportation Modes, <https://www.buses.org/assets/images/uploads/general/2019%20UPDATE%20Comparative%20Fuel%20CO2%20FINAL-July%202019.pdf>

² [Environmental Protection Agency Summary, California Waiver Requests for Heavy-Duty Vehicle Emission Regulations](#), April 6, 2023.

³ [CARB-Heavy-Duty On Highway Manufacturers Agreement](#), July 7, 2023.

⁴ [Notice of Public Comment Period on Proposed Amendments to the Heavy-Duty Engine and Vehicle Omnibus Regulation](#), Aug. 1, 2023.

⁵ [Clean Air Act, Section 177 \(42 USC 7507\)](#).

⁶ [Uniform Administrative Procedure Act \(Act\)](#), Chapter 54, Sec. 4-166 – 4-189.

⁷ *Ibid*, Sec. 4-168a.

⁸ [Regulatory Flexibility Analysis \(Formerly Small Business Impact Statement\)](#), May 11, 2023.

makes this finding based on its conclusion that the proposed Emissions Regulations apply only “to Original Equipment Manufacturers (OEMs) of medium and heavy-duty (MHD) trucks and engines,” and because no such OEMS exist in the state there will be no direct impacts on small businesses. This is an overly narrow analysis and conclusion, which does not meet the spirit or intent of the law. The law does not specify a “direct impact,” but merely “adverse impact” and goes on to refer to the impact on specific “types of businesses potentially affected by the proposed regulation.”⁹

The engines subject to the Emissions Regulations are not only used in truck vehicles, but in buses and motorcoaches as well. Because DEEP only references trucks in the Analysis, we are concerned an important segment of Connecticut’s transportation network was not accounted in the analysis. Further, these engines are not built as stand-alone products, they are components of vehicles that operate in commerce. The impact of the Emissions Regulations goes far beyond a one-time reporting requirement, and the expectation of only short-term cost increases to small businesses, is no small factor. It is too narrow of a view to limit the regulatory impact analysis simply to an assessment of engine and vehicle manufacturing, when it is the operation of these engines that actually affect the environment. The entire purpose of the Emissions Regulations is to reduce harmful emissions; this cannot be done without considering the operating use of the engines by vehicle operators. In addition, long distance fleet operations and interstate motorcoach operations were ignored in the analysis included in “An Assessment of Connecticut’s Need to Adopt California’s Medium and Heavy-Duty Vehicle Emission Standards.”¹⁰ This analysis was heavily relied upon in justifying the need for Connecticut to adopt California’s emissions standards, and a full presentation of operations in the state was needed. When properly considered within a realistic context, accounting for both the manufacture *and use* of the engines for both trucks and motorcoaches, there will be a far greater regulatory impact than was anticipated. Connecticut is home to a large number of small commercial vehicle operations who will all be affected by the adoption of these rules. These businesses are entirely dependent on the OEMS complying with the Emissions Regulations. If, for example, the OEMs cannot produce engines or vehicles in compliance with the Emissions Regulations by the deadline or they can do so only at an excessive cost, small business operators will be in jeopardy. For these reasons, DEEP should revise its Small Business Impact Statement/Regulatory Flexibility Analysis to fully capture the reach of these regulations, and comply with the other provisions of the Act, such as identifying alternative compliance methods or consider an exemption. A suspension of this proceeding would enable DEEP to undertake this effort.

Substantive Concerns

In addition to the procedural concerns yet related to the fact that operating businesses rely on the engines subject to these regulations, ABA has several concerns with the Emissions Regulations.

First, it is our understanding the engine OEMs have given notice to CARB and motorcoach vehicle manufacturers of their technological inability to comply with CARB’s Omnibus regulation, which led to the Agreement and CARB’s proceeding to amend the Omnibus

⁹ Ibid, Act, Sec. 4-168a.

¹⁰ An Assessment of Connecticut’s Need to Adopt California’s Medium and Heavy-Duty Vehicle Emission Standards, Mar. 7, 2022, https://portal.ct.gov/-/media/DEEP/air/mobile/MHD/MHD_Whitepaper_030822.pdf.

regulation. Although the Agreement appears to address some of the technical issues limiting the OEM's abilities for the out years, MY 2027 and beyond, it does not address short-term challenges, e.g., MY 2024-2026. In brief, engine OEMs have informed motorcoach vehicle manufacturers they are incapable of meeting the CARB goals, and there will be little to no supply of compliant engines available for new motorcoach vehicles in the required timeframe. Motorcoach vehicle manufacturers, in turn, are currently contacting their customers informing them of this impending crisis. Faced with possible new-vehicle shortages, motorcoach operators are weighing plans to retain equipment that would otherwise be replaced, delaying transition to lower emitting equipment and reducing operations.

Emissions goals should be reasonable, considering what is technologically and economically feasible. Engine OEMs and motorcoach vehicle manufacturers need additional time and/or flexibility to meet the stringent emissions standards established by CARB in the Omnibus regulation. In fact, this fact is what led to the negotiation between CARB and the heavy-duty on-highway manufacturers, resulting in the Agreement and CARB's proceeding to amend its Omnibus rule. However, these negotiations did not include representation from the bus and motorcoach industry, and challenges persist for motorcoach vehicle manufacturers, and in turn motorcoach owners, in meeting CARB standards. The changes CARB is making to its Omnibus rule bring the regulation closer to alignment with the EPA's 2022 Heavy-Duty Engine and Vehicle Standards NOx rule adopted in 2022 (NOx rule),¹¹ which is helpful, but they do not go far enough. The EPA NOx rule meets the need for emissions reduction in a reasonable manner, considering technological and economic feasibility as well as a responsible motorcoach-specific engine derate schedule. Connecticut should suspend this proceeding, and instead remain compliant with EPA's NOx rule, which engine and motorcoach vehicle manufacturers have been working toward for years.

Further, in the out years, motorcoach vehicle manufacturers are unable to assure motorcoach operators of their ability to produce ZEVs, to meet the longer term sales deadlines established by the ACT. The motorcoach industry is very supportive of the advancements underway in terms of addressing climate change, and believes ZEVs are part of this advancement. However, fundamental issues must be resolved before ZEVs can become a viable option for the motorcoach industry, and these issues need to be resolved before setting target deadlines for compliance. The issues are outlined as follows:

1. Battery Range – Although electric bus battery technology has advanced and may be in use for buses used in public transit activity, it has not yet advanced to meet the range needs necessary for motorcoach operations. Unlike transit buses, which operate on daily schedules allowing the vehicle to return to the garage for recharging on a daily basis, motorcoaches are used for transporting passengers (along with luggage and sometimes equipment) for longer distances, and can be away from their home garage for days. Associated with this issue is the time required to “refuel” or recharge the battery. Although strides have been made to address this key impediment, it has yet to be solved. It takes an inordinate amount of time to “refuel” when this vehicle needs to accommodate passengers – this is a critical safety issue for motorcoach operators as, unlike trucks, the health, safety, and the comfort of their passengers is paramount to

¹¹ [Control of Air Pollution From New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards](#), Jan. 24, 2023, Fed. Reg. Vol. 88, p. 4296.

their operations, along with the need to meet time schedules. Currently, the operating range is at most 230 miles per charge for these vehicles, and this number decreases based on weather, battery memory, regenerative braking opportunities, vehicle weight and terrain.¹² As to charging time, it is at least 4 hours, depending on the infrastructure and the charging capacity of the station.¹³ Based on the Department of Energy's listing and map of available electric charging stations¹⁴, there are only 50 charging stations available that have DC fast charging and CCS charger-to-vehicle interfaces, needed by electric powered motorcoaches and other heavy duty vehicles.¹⁵ Of those stations, 30% are located at car dealerships or have limited operating hours making them inaccessible and unreliable to commercial motor vehicles. Charging station accessibility for heavy duty commercial vehicles must be considered for both motorcoach operations who will and will not be able to return to a home base on a daily basis. For the cost investment, these parameters make electric battery charged motorcoaches unfeasible.

2. Battery Technology – While strides are being made to advance battery technology, there remain differing views on what technology best fits the needs of heavy-duty vehicle operations. For example, electric batteries may become more readily accessible, however they cannot provide range and there are issues with regard to temperature and power. While hydrogen fuel cell batteries may address several of these issues, the technology requires more development for commercial use and fueling infrastructure. Engine OEMs and vehicle OEMs, of course, are taking the lead in this area of development, but from an operating perspective it poses several challenges in terms of investment planning, training and acquisition. This is particularly the case for small motorcoach operators, which make up over 80% of the industry. This is also particularly true in the wake of the COVID-19 pandemic, as motorcoach operators continue to face an uphill economic climb to restore sustainability. Operators need greater certainty before making investments in experimental technology, and cannot afford to change course if they make the wrong choice.

3. Battery Weight – Electric and hydrogen fuel cell batteries add significant weight to an already heavy weight vehicle, and this weight raises a number of safety concerns,¹⁶ such as the need for increased stopping distance, the risk of greater impact damage in a collision, and the unique fire hazard and emergency response needs associated with battery materials. These are all significant concerns, when involved in the operation of a vehicle moving passengers. In addition, there are the practical concerns of operating a heavy vehicle on public roads that have weight limits. Motorcoaches, carrying both passengers and luggage, are already bumping up against maximum federal highway weight limits. Electric batteries typically add an additional 2000-3000 pounds

¹² Electric bus specifications, MCI Electric Bus brochure, <https://www.mcicoach.com/site-content/uploads/2021/12/MCI-Electric-Series-Brochure.pdf>.

¹³ James Wang. Motorcoach World video, <https://youtu.be/RtOStuAOoQo>.

¹⁴ Alternative Fuels Data Center, Electric Vehicle Charging Station Locations, https://afdc.energy.gov/fuels/electricity_locations.html#/analyze?country=US®ion=US-CT&fuel=ELEC&ev_levels=dc_fast&ev_connectors=J1772COMBO.

¹⁵ Proterra Charging Systems, 1440 kw charging station brochure, https://www.proterra.com/wp-content/uploads/2023/02/SPEC_CHG-SYS_1440kW_V9_02_20_22.pdf.

¹⁶ "U.S. NTSB chair raises safety concerns about heavy electric vehicles," D. Shepardson, Reuters, Jan. 11, 2023, <https://www.reuters.com/article/usa-autos-electric-idCAKBN2TQ1U3>.

to the curb weight of these vehicles,¹⁷ which places an operator in the untenable position of trying to comply with incompatible government regulations.

4. Battery Space – In addition to weight, batteries to power electric buses take up a significant amount of space on a vehicle, space that is currently used to generate revenue, passenger seating and luggage carriage. Motorcoach operators operate on tight margins, and revenue generating space is a precious commodity on a vehicle that is limited by size and weight under federal requirements. The addition and configuration of the vehicle when integrating a battery or batteries will cut into the space on the vehicle used for revenue generation. The batteries required to power a motorcoach can result in a reduction of luggage compartment space, a key distinction of motorcoach travel, by up to 30-50% depending on the configuration. This is particularly problematic for long distance operations and may lead to the use of trailers or additional support vehicles to handle baggage, actually increasing the cost of the operation and decreasing the efficiency and environmental benefits. Thus, not only will the battery powered motorcoach vehicle be more costly to purchase, it could result in increased operating costs and/or yield less revenue for the operator and decrease efficiency – a lose-lose proposition, in terms of remaining an ongoing business concern and providing environmental benefits.

5. Refueling Infrastructure – Whether electric or hydrogen fuel cell powered batteries are put into operation, the infrastructure to support such operations is just not there. Certainly, electric battery refueling infrastructure investment is underway, but hydrogen fuel-celled refueling infrastructure is seriously lagging behind. Also, even with the unprecedented levels of federal investment toward creating the necessary refueling infrastructure, the focus has remained primarily on infrastructure to support personal vehicle use and not commercial operations. Further, construction of such infrastructure takes time in addition to financial resources; time for planning, environmental reviews, coordination with power suppliers, supply chain delays, and other unanticipated delays. There are also still outstanding questions to be resolved with regard to standards for refueling infrastructure, as the personal vehicle world is just now starting to address. More broadly, there are also serious overarching concerns about the capacity of the existing electric grid, in Connecticut and throughout the country, to meet the increasing demands that will be put upon the system by a broad refueling infrastructure network, particularly on the scale necessary to support both the personal and commercial needs of an e-economy.

6. Cost – On average, a new diesel motorcoach costs \$600,000, a costly investment particularly for small businesses. Electric buses, on average cost about \$1.3 million, and programs to assist private motorcoach operators to offset or subsidize these costs are few to none. While the range of a hydrogen fuel cell bus is greater than electric battery vehicles, the cost is also significantly greater, quoted in the range of millions of dollars.¹⁸ But the excessive cost is not just for the vehicle itself, there are also significant costs associated with establishing fueling infrastructure and to maintain these expensive vehicles, and train/hire maintenance personnel. A transit agency in Nevada is spending nearly \$4 million in federal funds just to acquire two hydrogen fuel cell buses and train their staff to maintain the vehicles, and this only covers 65% of cost to putting

¹⁷ “EVs are much heavier than gas vehicles, and that’s posing safety problems,” N. Bomey, Axios, April 28, 2023, <https://www.axios.com/2023/04/28/evs-weight-safety-problems>.

¹⁸ “What Makes Hydrogen a Perfect Fit for Transit?” ACTNews, July 31, 2023, <https://www.act-news.com/news/what-makes-hydrogen-a-perfect-fit-for-transit/>.

the buses into operation.¹⁹ There will also be costs associated with the disposal of batteries, and it is unclear what this will do to the resale market of used vehicles or the costs to acquire used equipment. These unknowns lead to extreme market volatility and rapid asset depreciation schedules, which the electric used car market is just starting to come to terms with, but would be a risky investment and capital model for a for-profit business.²⁰ Although proponents of CARB rules like to point to the long term benefits of ZEVs will supposedly offset the increased costs of ZEVs or that costs will come down over time, none of these benefits will be realized if motorcoach companies cannot remain in business because of these upfront cost hurdles. A reduction in bus operators in turn will impact daily commuter operations as well as the long-distance tourism market, which is responsible for contributing at least \$17 billion to Connecticut's economy.²¹

California has a lengthy history of incentivizing and supporting the transition to zero-emission vehicles. The State supports a variety of programs for different vehicle sectors, to utilize as well as to advance infrastructure development. Connecticut has not yet taken these same steps or established programs to assist motorcoach operators in making a transition in compliance with the proposed schedule in the regulations currently under review.

Conclusion

It is premature for Connecticut to consider adopting the CARB Omnibus and Advance Clean Truck regulations. Procedurally, the Omnibus regulation is not final, and DEEP needs to broaden its analysis of the impact of the Emissions Regulations on small businesses. More practically, the Emissions Regulations are too stringent and, according to engine OEMs, the technology does not yet exist to comply with the regulations. As well, the infrastructure does not exist to support commercial ZEV operations contemplated by the regulations, and the cost impact to businesses, particularly small businesses, will be overwhelming, threatening the viability of the private motorcoach industry. Connecticut should suspend this proceeding, and instead remain aligned with the EPA NOx rule.

ABA supports the goal of emissions reduction within the transportation sector. Bus operations, by design, are one of the most environmentally sensitive forms of transportation. A motorcoach vehicle can take up to 50 personal vehicles off the road, providing both congestion relief and emissions reduction. ABA looks forward to seeing the industry continue to advance toward ZEVs in a responsible manner, but it must be done in a reasonable and economically feasible manner to be successful. Thank you for providing the opportunity to submit comments on this important issue. We look forward to working closely with you in the future and are happy to answer any

¹⁹ "RTC of Southern Nevada Celebrates First Hydrogen Fuel Cell Electric Buses," Metro, Aug. 18, 2023, <https://www.metro-magazine.com/10204382/rtc-of-southern-nevada-celebrates-first-hydrogen-fuel-cell-electric-buses>; "RTC using \$3.8M federal grant for 2 hydrogen-powered buses," G. Haas, 8Newsnow.com, June 3, 2020, <https://www.8newsnow.com/news/local-news/rtc-using-3-8m-federal-grant-for-2-hydrogen-powered-buses/#:~:text=The%20buses%20will%20produce%20no%20greenhouse%20gas%20emissions,the%20cost%20of%20putting%20the%20buses%20into%20operation.>

²⁰ "What to know about buying a used electric vehicle as more hit the auto sales market," CNBC, May 31, 2023, <https://www.cnbc.com/2023/05/21/what-to-know-about-buying-a-used-ev-as-more-hit-the-car-market.html>.

²¹ "Tourists spent a record amount in CT last year. Will it go higher in 2023?," CT Insider, May 31, 2023 <https://www.ctinsider.com/business/article/ct-connecticut-tourism-foxwoods-mohegan-mystic-18125329.php>.

questions should you have any. Please feel free to contact ABA's Suzanne Rohde at (202) 218-7224 or srohde@buses.org with any inquiries.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Brandon Buchanan". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Brandon Buchanan
Director of Regulatory Affairs