HEARING OFFICER REPORT

Prepared Pursuant to Section 4-168(a) of the
Connecticut General Statutes and
Section 22a-3a-3(d)(5) of the Department of Environmental Protection
Rules of Practice

Regarding
Amending of Section 22a-174-37 of the
Regulations of Connecticut State Agencies

Hearing Officer: Paul Kritzler

Hearing Date: August 22, 2023

On July 21, 2023, the Commissioner of the Department of Energy and Environmental Protection (the Commissioner and DEEP, respectively) published a notice of intent to amend the Regulations of Connecticut State Agencies (RCSA) by adopting new section 22a-174-37. Pursuant to such notice, a public hearing was scheduled for August 22, 2023. The comment period initially ran until August 23, 2023, and was extended until 5pm on August 30, 2023.

I. Hearing Report Content

As required by section 4-168(d) of the Connecticut General Statutes (CGS), this report describes the proposal, identifies the principal reasons in support of and in opposition to the proposal, and summarizes and responds to all comments on the proposal. A final recommended version of the text of the proposed regulation is also provided.

II. Summary of Proposal

DEEP is proposing to adopt RCSA section 22a-174-37 for two reasons: to include provisions for more stringent emission requirements for medium and heavy-duty[1] (MHD) internal combustion engines (ICE) and to implement requirements for vehicle manufacturers to progressively increase the sale in the state of advanced technology MHD vehicles including battery electric and hydrogen vehicles from 2027 through 2035.

DEEP is proposing to adopt these MHD emission standards, effective with the 2027 Model Year, to reduce air pollution and protect public health as authorized by CGS section 22a-174g, as amended by section 15 of Public Act 22-25, the "Connecticut Clean Air Act," which provided additional authority to adopt these standards and in compliance with the federal Clean Air Act (CAA) section 177 "identicality" and "lead time" provisions. The regulatory proposal aligns with other section 177 states' Advanced Clean Truck (ACT) and Heavy Duty NOx 'Omnibus' (HDO) regulations.

The emissions standards will also help bring Connecticut in line with states across the region that are adopting the same standards and with the direction of future national and international automobile markets, in order to provide Connecticut consumers with the best vehicle options in the future. These regulations also will spur investment in the necessary infrastructure to be ready in time for these inevitable market changes. The regulations do not require the consumer to purchase these vehicles and do not apply to used cars.

HDO Rule: The HDO regulation DEEP is proposing to adopt is a set of vehicle emission standards and other related requirements designed to reduce NOx and particulate matter ("PM") emissions from on-road medium- and heavy-duty engines and vehicles. The regulation will cut NOx emissions from heavy-duty trucks by roughly 75% below current standards once fully in effect in 2027. Some key elements of the regulation standards include:

1. NOx Emissions Controls: The regulation standards will significantly reduce emissions of NOx, a major contributor to air pollution and a precursor to the formation of ground-level ozone and fine PM. Compliance with these standards may require the use of

[1] HDO emission standards include requirements for trucks with a gross vehicle weight rating (GVWR) 14,000 GVWR to 33,000 GVWR MHD vehicles. ACT, and the one-time Large Entity Reporting (LER) apply to vehicle 8,500 GVWR and up.

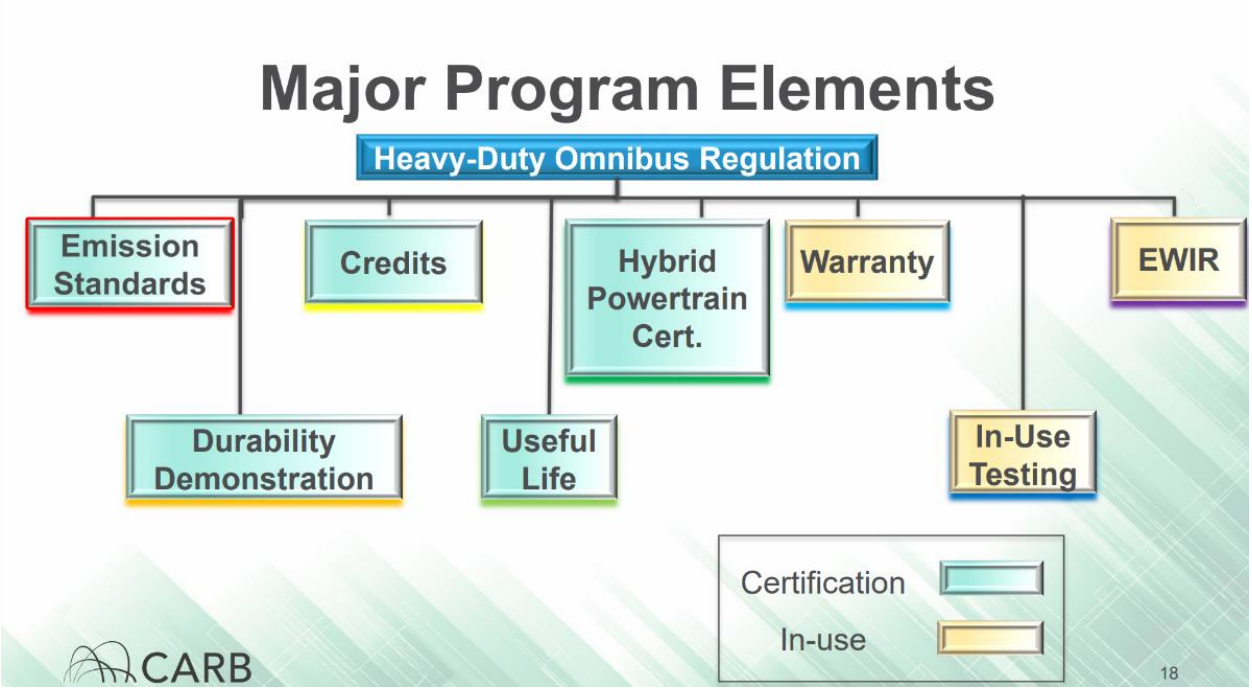
advanced emissions control technologies, such as selective catalytic reduction (SCR) or exhaust gas recirculation (EGR).

2. PM Emission Controls: The regulation standards will reduce emissions of PM, a contributor and aggravator of negative health effects such as asthma and chronic obstructive pulmonary disease (COPD).

3. Phased Implementation: The regulation will be implemented in multiple phases, with increasingly stringent NOx emission limits set for different categories of vehicles and equipment over time.

4. Certification and Testing: Manufacturers are required to certify their products to ensure compliance with the emission standards. Testing procedures and protocols are established to verify that vehicles and equipment meet the required emission levels.

5. Consumer Protections: Original Equipment Manufacturers (OEMs) will be required to submit to new lifetime durability testing and provide greater warranty protections to consumers for both drive train and emissions systems. These requirements phase in on a two-tier basis, with the first set of requirements for model year (MY) 2027-2030 and a second set of requirements phasing in for MY 2031-2035.



ACT Rule: The ACT rule requires medium- and heavy-duty truck makers to sell an increasing number of clean, electric or hydrogen fueled trucks in place of dirty diesel and gasoline

vehicles; electrification targets vary by vehicle class. The regulation does not place requirements on fleets to purchase these vehicles. A summary of the ACT requirements can be found in the graph below:

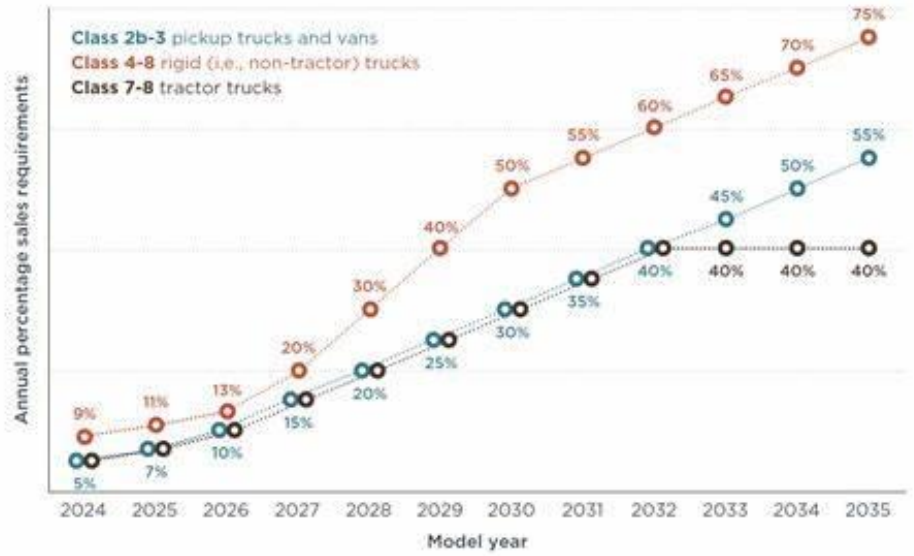


Figure 1: Zero-emission sales percentage schedule by vehicle group and model year.

The regulation also includes a one-time Large Entity Reporting (LER) requirement for fleets in the state of 50 vehicles and above. The LER will be a reporting requirement for eligible fleets in 2024 to provide data to DEEP that includes fleet vehicle numbers, fleet locations, fleet vehicle miles traveled (VMT), and additional information that will help DEEP and other state agencies plan future policies and incentives for fleet turnover.

III. Summary of Opposition/Support of Proposal

DEEP received approximately 4,000 comments sent to the DEEP Mobile Source Group email address that addressed both the MHD proposal and the DEEP light-duty vehicle proposal (PR2023-023) and that are accounted for in the comment response documents for both proposals. DEEP received an additional 300 emails through the Secretary of State eRegulations system for this proposal. Comments covered a wide variety of topics as summarized below.

Principal opposition to the proposal can be sorted into the following categories:

- Questions about the feasibility of the technology, including but not limited to the availability of charging, limited vehicle range, vehicle recharging speed, cold weather performance and safety concerns.

- Concerns of cost, including but not limited to perceived higher vehicle sticker prices, cost of charging infrastructure, higher maintenance costs and electric rate concerns for charging.

- Questions of legal authority to adopt the regulations or about federal preemption, including but not limited to: preemption by the federal Environmental Protection Conservation Act (EPCA) and the Renewable Portfolio Standard; about the authority to adopt California standards for which California has not yet received a waiver of preemption; and about authority in light on ongoing litigation.

- There was also significant opposition due to potential negative effects to Connecticut's oil and gas industry due to loss of demand for gasoline from the American Petroleum Institute (API) and American Fuel & Petrochemical Manufacturers (AFPM).

- There were also comments in opposition from fleet owners in Connecticut, including members of lumber companies, beverage distributors, the Connecticut Motor Transport Carriers, and petroleum distributors.

Principal support included comments from health and environmental organizations such as the Connecticut Chapter of the American Lung Association (ALA), Connecticut Chapter of the Sierra Club, Save the Sound, the Union of Concerned Scientists, and technology research groups, as well as members of the public. Supporting comments were also submitted by regulated entities such as the Engine Manufacturers of America (EMA), Tesla and Rivian.

Principal reasons in support included:

- Public health benefits, citing models showing that adopting the regulation can avoid premature deaths and recover billions of dollars in revenue loss by avoiding adverse health effects associated with poor air quality.

- The emission reduction benefits of the regulation in the context of the fact that Connecticut remains in non-attainment for the 2008 and 2015 federal health-based National Ambient Air Quality Standards (NAAQS) for ozone (smog).

- Benefits for Environmental Justice (EJ) and Low and Moderate Income (LMI) citizens of Connecticut as fossil fuel emissions from highways create poorer air quality conditions for communities that abut them.

- The need to meet federal and state laws including the Global Warming Solutions Act (GWSA) through the reduction of greenhouse gases (GHG). These statements tie into concerns over climate change and its adverse effects on Connecticut.

- Comments were received from vehicle manufacturers, including EMA, Tesla and Rivian in support of the proposal provided that Connecticut can support the regulations with policies and program that support EV integration including: continue expansion of electric vehicle infrastructure equipment (EVSE), vehicle incentive programs (VIP), and support of grid upgrades to support widescale vehicle electrification.

- Finally, comments in support cite the financial benefits of the proposed regulation due to the lower total cost of ownership (TCO) of electric vehicles.

Comments were also received by members of the Connecticut General Assembly both in support of and in opposition to the proposal and are noted below in their own section.

IV. Summary of Comments

All commentors are identified in Attachment A - List of Commenters. A summary of the comments and the Department's responses are below. Many commenters made similar or identical statements, and those comments are grouped below by topic.

Public & Environmental Health

Comment 1. Several comments received supported the proposed rule due to emission reductions and public health benefits. Commenters noted that motor vehicles are a leading source of air pollutants that cause health risks to the state population. Some commenters noted that medium and heavy-duty vehicles represent the largest single source of ozone, causing NOx emissions and other criteria pollutants such as particulate matter 2.5 (PM) while also significantly contributing to GHG emissions. Commenters noted that the proximity of highways and large roads to some residential areas creates overburdened and environmental justice communities in the state and contributes to the increased exposure of poorer residents in locations with higher concentrations of pollutants. Other supportive comments cited concerns about climate change, air quality, and the benefits of phasing in/transitioning to ZEV technology to mitigate the impacts of climate change.

Response. DEEP acknowledges these comments and thanks the commenters for their support of the proposed regulation. Environmental justice has been a critical focus for the state for several years and is one of the reasons for the legislation authorizing this proposal. DEEP notes that the increased exposure to emissions by communities close to transit corridors subject residents to a disparate health risk and that these communities are often comprised of low income and/or minority residents. Additionally, the commenters accurately state the proposed rule encompassing the ACT and HDO is needed to bring Connecticut into compliance with the federal NAAQS for ozone. The state is designated as "severe" nonattainment with respect to the 2008 ozone NAAQS in

Fairfield, New Haven, and Middlesex Counties. The remaining counties are subject to reclassification to "serious" non-attainment for the 2015 ozone NAAQS. Unhealthy levels of ozone are experienced by Connecticut residents multiple times each year, presenting a number of health risks. In addition to the public health impacts of Connecticut's continued noncompliance with federal health-based air quality standards, redesignations under the federal CAA compels DEEP to place ever more stringent and costly emission reduction requirements on stationary source owners and operators.

Comment 2. Some commenters representing health organizations, such as the Connecticut chapter of the American Lung Association (ALA) and the Connecticut Department of Public Health (DPH), submitted comments in support of the regulation. ALA submitted comments stating that Connecticut can see $10.5 billion in cumulative health benefits between 2020-2050, and avoid 963 premature deaths, 21,402 asthma attacks, and 111,710 lost workdays from the positive health benefits of better air quality by adopting ACT and the HDO/low NOx 'Omnibus' rules. DPH reiterated the impacts that NOx and PM pollutants can have on residents' health, especially those with chronic conditions. They also noted that climate change can severely affect public health due to the prevalence of heat waves, which exacerbate air quality problems. They also quoted a report suggesting unhealthy air increases the risk of asthma attacks, heart attacks and strokes, lung cancer, and premature death.

Response. DEEP thanks the ALA and DPH for providing comments on this proposal. DEEP acknowledges the various extreme public health impacts that motor vehicle pollution can cause. The state is committed to protecting the health of the public and the environment.

Comment 3. Comments from the Connecticut Roundtable on Climate and Jobs support the adoption of the regulation, citing the ALA study mentioned above that shows a $10.5 billion dollar benefit in reduced health costs to the state due to the adoption of ACT from 2020-2050, including the avoidance of 963 premature deaths, 21,402 asthma attacks and 111,710 lost workdays.

The comment goes on to cite a study by the Union of Concerned Scientists (UCS), which additionally measures an 86% reduction in NOx emissions and 27% reduction in PM emissions in Connecticut from the adoption of ACT and the Heavy-Duty NOx "Omnibus."

Response. DEEP appreciates the comments of the Connecticut Roundtable on Climate and Jobs, including additional studies that align with DEEP's own assessments in its "Assessment of Connecticut's Need to Adopt California's Medium and Heavy-Duty Vehicle Emission Standards" published in 2022 of the health and environmental benefits of adopting these regulations.

Comment 4. Some commenters supported the regulation and stated that the proposal will provide air quality benefits for Connecticut and its neighboring states.

Response. DEEP acknowledges these comments and thanks the commenters for their support of the proposed emission standards. DEEP notes that these emission standards have already been adopted by neighboring states of New York, New Jersey, Vermont, and Massachusetts, while Rhode Island, Maine, Delaware, and Maryland are in the process of adopting these standards as well. Regional adoption of the MHD rules is necessary due to the travel patterns of trucks throughout New England and across state lines. Regional adoption of MHD emission standards will ensure vehicles traveling through the state but based in New England and the Mid Atlantic meet the more stringent CA emission standards.

Comment 5. Several comments were received from advocates and representatives from environmental organizations, including the Connecticut Audubon Society. Comments strongly supported the new emissions standards, emphasizing Connecticut's ongoing air quality crisis primarily caused by vehicle emissions. These organizations noted the potential wildlife impacts that poor air quality has. The effect on birds from Connecticut's non-attainment for the 2008 and 2015 federal health-based National Ambient Air Quality Standards (NAAQS) for ozone (smog) was particularly noteworthy.

Response. DEEP appreciates the strong support for the proposal. The comments emphasized the urgency of addressing the air quality in the state. Wildlife health is an often-overlooked benefit of these new, more robust emission standards.

Comment 6. Commenters representing the Connecticut League of Conservation Voters (CLCV) provided comments in support of the proposed regulations. They emphasized the poor air quality in Connecticut and attribute nearly 40% of greenhouse gas emissions to transportation pollution. They advocate for the rapid adoption of these rules to combat this issue and meet the emission reduction goals of the Connecticut Global Warming Solutions Act. They highlight the health risks of diesel exhaust, emphasizing its impact on vulnerable urban populations. The League references the Union of Concerned Scientists (UCS) fact sheet detailing the benefits of the standards and points out Connecticut's alignment with other states in seeking more robust emissions standards. The comment emphasizes that younger generations desire swifter action against climate change.

Response. DEEP appreciates the CLCV for expressing their support and highlighting the environmental and health benefits of the proposed regulations. DEEP goal is to address the current challenges with air quality, especially in urban areas, and recognize the importance of transportation in those goals. The acknowledgment of the potential for Connecticut to follow stronger standards, in line with those adopted by other states, aligns with the broader objective of creating a unified approach to tackling GHG

emissions. It is also noted that CLCV's comments indicated there is long-term planning and legislative support behind these regulations, DEEP is committed to ensuring a smooth and well-informed transition for all stakeholders. The growing competitiveness of electric vehicles and the increased focus on developing the necessary infrastructure are crucial steps towards achieving a cleaner, more sustainable transportation system. DEEP aims to ensure a balanced approach, considering all residents' immediate needs and long-term benefits.

General Questions/Comments

Comment 1. Some commenters stated the Medium and Heavy-Duty emission standards will be especially important with regard to converting school bus fleets to electric school buses (ESBs). They state this would have several benefits, including health benefits for student riders.

Response. DEEP acknowledges these comments but notes that although school bus fleet conversion to zero emissions is a priority for DEEP, school buses and transit buses are exempted from this proposed regulation under section 22a-174-37(d). DEEP will continue to approach school bus electrification pursuant to section 13 of Public Act 22-25 and support municipal efforts to meet legislative requirements for electrification.

Comment 2. Several commenters made statements that were outside the scope of this rulemaking regarding world affairs or political motivations for the proposal of the regulation.

Response. While DEEP is restricted to responding only to germane comments, DEEP thanks these commenters for sharing their thoughts and opinions on this proposal.

Comment 3. One commenter noted that implementation of this regulation could reduce gas tax revenue and questioned whether there would be an EV fee to address the loss of revenue for the state or other fee to make up for lost transportation fund tax revenue.

Response. DEEP appreciates the commenters' consideration of the issue, while the discussion of EV fees to offset gasoline tax revenue is outside the scope of this rulemaking, as state revenue generation falls under the cognizance of the Connecticut General Assembly, the Department of Revenue Services and transportation funding falls under the authority of the Connecticut Department of Transportation, the Department did provide an estimate of lost revenue in the fiscal note.

Comment 4. Some commenters stated that they believed the state of Connecticut should make the Connecticut state vehicle fleet completely ZEV before enacting this regulation.

Response. The comment regarding whether the state should be required to adopt ZEVs before the rule is enacted is outside the scope of this regulation; however, DEEP notes that Public Act 22-25 accelerated Connecticut's ZEV adoption schedule and requires the state's light and medium duty vehicle fleet to be 100% ZEV by 2030. Other examples of the state transitioning to ZEVs include the DOT transit Connecticut bus fleet, which has already begun transitioning to ZEV and is restricted from buying any new ICE buses starting in 2024 by Public Act 22-25. It should be noted that transit buses, as defined in the regulation, and emergency vehicles, as defined in the regulation, are exempted from this regulation under subsection D.

Comment 4. Some fleet owners expressed concerns regarding the rule and its potential effects on small businesses, including a required phase-in of EVs for fleets that still need to realize the complete life cycle of purchased ICE vehicles. They also expressed concerns regarding the reduced valuation of ICE vehicles currently in the fleet due to this rule.

Response. DEEP notes that the proposed regulation is not a fleet purchasing requirement, but a set of emission standards that apply to vehicle manufacturers, and Connecticut fleet owners may continue purchasing ICE vehicles after 2027. Fleets will not be required to sell their ICE vehicles. DEEP acknowledges fleet owner valuation concerns. However, used ICE vehicles are not subject to the requirements of the proposed regulation. ICE vehicles will still be able to be sold on the used market. DEEP also notes that this regulation still allows for the sale of new ICE vehicles. The OEM sales requirement includes a gradual phase-in of the percentage of ZEV medium and heavy-duty vehicles that culminates by 2035.

Comment 5. Some commenters, identified as residents of Connecticut, stress that regulations should not narrow consumer choices to a singular technology, highlighting the potential of hydrogen power, examples of which are operational. They question the necessity of new laws when emissions could be controlled by revising acceptable emission levels for internal combustion engines without requirements for advanced technology vehicles, allowing any technology that meets these criteria to be used.

Response. DEEP acknowledges and appreciates the perspective of citizens who advocate for a broader technological landscape in vehicle emissions regulations. We understand the importance of not limiting options to just one technological solution, and hydrogen-powered electric vehicles (HEVs) are a certifiable technology under the ACT regulation, which grants full credits for HEV vehicles. The goal of introducing new regulations is not to replace the existing emissions controls but to further refine and enhance them in light of recent technological advancements and environmental insights as well as in recognition of manufacturers' intentions to shift away from producing ICEs in the coming years. The regulation leaves open the possibility of additional technologies qualifying for ZEV credit and allows OEMs to provide testing and apply for

certification for those vehicles. This regulation is technologically agnostic, and leaves open the possibility that many technologies may fill the need for ZEVs.

DEEP acknowledges and appreciates the perspective of citizens who advocate for a broader technological landscape in vehicle emissions regulations. We understand the importance of not limiting options to just one technological solution, and hydrogen-powered electric vehicles (HEV) is indeed a viable technology as already contemplated by ACT, which grants credits for HEV vehicles. The goal of introducing new regulations is not to replace the existing emissions controls but to further refine and enhance them considering recent technological advancements and environmental insights on the increased benefits of advanced technology vehicles. The regulation leaves open the possibility of additional technologies qualifying for ZEV credit and allows OEMs to provide testing and apply for certification for those vehicles. The proposed regulation is technology agnostic and leaves open the possibility that many technologies may fill the need for ZEVs.

Comment 6. Comments were submitted in support of the proposed regulation by CERES, a non-profit investor-led company that advocates for sustainability. Many of the comments from CERES have been echoed in other comments summarized in this document. CERES pointed out that failing to adopt the regulation would disadvantage Connecticut businesses who wish to purchase EVs, if surrounding states did adopt the regulations. CERES suggests that regulated entities would be incentivized to send EV MHD vehicles to states where credits are gained for vehicle sales. CERES notes that many of its members are attracted to BEVs for their lower total cost of ownership, making them a more economical choice for many businesses.

Response. DEEP appreciates the comments of CERES, especially with regard to the economic disadvantages that might result from not adopting the proposed standards.

Comment 7. Some comments, received from representatives of Connecticut businesses, state concerns over California's ban on registration of pre-2010 trucks.

Response. This proposed regulation does not ban the registration of vehicles due to model year; this comment is out of the scope of this rulemaking.

Comment 8. Some commenters stated that they did not support the regulation because it banned diesel- and gas-powered vehicles.

Response. DEEP acknowledges the concerns of citizens expressing these comments. However, this proposed regulation does not ban MHD diesel or gas-powered vehicles or regulate the used MHD vehicle market.

Comment 9. Some comments received from representatives of Connecticut businesses voice concerns over the regulation creating a potential competitive disadvantage of having to use EVs over competitors in other states.

Response. DEEP appreciates these concerns and notes that these regulations do not apply to Connecticut businesses. Businesses are not required to purchase an EV truck if they do not wish to do so. Additionally, the bordering states of New York, Massachusetts, and Rhode Island, as well as the neighboring states of New Jersey, Maryland, Vermont, and Maine, have adopted or are in the process of adopting these regulations, reducing the chance that competitors in neighboring states would have a competitive advantage.

Comment 11. Some commenters stated that they had concerns that this regulation would affect ICE agricultural equipment, lawn mowers, chainsaws, and other such off-road or small engine equipment.

Response. DEEP understands both the concerns for and the eagerness to implement stricter emissions regulations for off-road vehicles and engines. However, this proposed regulation only applies to on-road Medium and Heavy-duty vehicles weighing 8500 lbs. gross vehicle weight rating (GVWR) or greater. This regulation does not apply emission standards to off-road equipment or to other vehicles such as those used in agriculture or for recreational purposes. DEEP appreciates that some off-road equipment may be ideally suited for ZEV technologies and that small ICEs and larger equipment used for industry and recreation contribute to GHG and criteria pollutants. However, Connecticut is preempted from adopting off-road vehicle or small engine emission standards by federal law and must rely on EPA emission standards.

Comment 12. Some commenters, identified as residents of Connecticut, have expressed strong reservations regarding the push for an electric vehicle regulatory proposal. The residents argue that Connecticut's air quality challenges cannot solely be addressed by local measures due to significant external factors, such as activities and air quality conditions from areas to the north and west of Connecticut. The influence of external events, such as Canadian wildfires, on local air quality was cited as a demonstrative example.

Response. DEEP values the feedback shared by the commenters. DEEP acknowledges that external factors play a role in Connecticut's air quality. However, local emission reductions are still needed and will make a positive impact on air quality in the state as a whole and on local air quality events. DEEP needs to pursue a variety of strategies to attain the State's air quality goals. Additionally, data presented in the MHD Assessment

shows that mobile source emissions remain the largest source of NOx emissions in the state and are the largest single contributor of GHG emissions in the state.

Technology & Infrastructure

Comment 1. Some commenters representing various trucking industries in Connecticut voiced concerns regarding the absence of electric alternatives for certain trucks that deliver fuel and propane, which might lead to older, less efficient vehicles being in use longer.

Response. DEEP acknowledges the industries' concern but notes that the proposed MHD Rule only sets requirements for manufacturers, not for fleets. The proposed rule ensures that MHD ZEV models will be available for Connecticut fleets that want to purchase ZEVs for the purpose that work for them operationally and economically. The state is not mandating the purchase of ZEVs for fleet owners. Therefore, if OEMs are unable to produce vehicles that meet businesses' needs, fleet owners need not purchase equipment that does not meet their needs.

Comment 2. Additional comments from the trucking industry expressed concerns regarding the increased weight of electric vehicles and that weight restrictions on trucks could affect their ability to cross bridges and access certain roads.

Response. DEEP appreciates the concerns around the weight of EV trucks, especially those that may be used for fuel deliveries. This regulation, however, does not address motor vehicle weight restrictions. Road and highway weight regulations fall under the Connecticut Department of Transportation and the US Department of Transportation Federal Highway Administration. Comments regarding motor vehicle highway weight restrictions are outside the scope of this rulemaking.

Comment 3. Some commenters expressed concerns that the adoption of the regulation will increase operating costs, both through cost of vehicles and the higher weight of electric vehicles requiring more trips, resulting in price increases for products and services that are shipped via more expensive freight vehicles.

Response. While DEEP appreciates the concerns about operating costs, and costs to consumers, existing data and projections suggest that costs will not increase. EV trucks' TCO analysis shows a net decrease in the TCO for EV trucks, which would actually decrease the cost of products shipped via EV trucks. An Environment Defense Fund (EDF) study demonstrates that battery electric vehicles (BEVs) have a marked economic advantage over their ICE counterparts, primarily when operating in urban environments and in the package delivery industry where vehicles make frequent stops. Another

recent study by the National Renewable Energy Laboratory (NREL) shows comparable load weight and range capacities for emerging BEV class 8 models, delivering a cost parity compared to ICE vehicles utilized for Freight or cargo hauling. The NREL study also suggests that TCO and hauling capacity will continue progressing as the technology improves. These studies suggest costs should decrease for shipped products.

Comment 4. Some commenters raised concerns about the disposal of vehicle batteries at their end-of-life, stating that they believed that there was no safe way of disposing of EV batteries and that they were a potential source of pollution.

Response. DEEP acknowledges that waste product management is a concern as new motor vehicle technologies enter service. There are several efforts underway to address this concern. Effective policies for EV battery recycling play a crucial role in ensuring the sustainability of the EV industry by managing the end-of-life disposal and recycling of lithium-ion batteries.

The landscape of EV battery recycling is evolving, and new companies and initiatives continue to emerge. Companies and policymakers are increasingly recognizing the importance of responsible battery disposal and recycling to reduce environmental impacts, conserve resources, and support the growth of the EV industry.

Some key policies may include Extended Producer Responsibility (EPR), battery collection and recycling companies, battery passport and tracking, material recovery and reuse, public-private research partnerships, consumer education and awareness, and federal recycling standards and or incentives.

Comment 5. Some commenters identified as residents of Connecticut expressed concerns that EVs produce more PM emissions which are known to cause severe health issues and that implementation of this regulation was trading CO2 emission reductions for increased PM emissions.

Response. DEEP acknowledges that BEV technology is not emissions-free. Emissions models show increased brake and tire wear emissions from BEVs; however, these PM emissions do not exceed PM emissions from fossil fuel exhaust, and EPA models show a net reduction in PM emissions overall from BEVs compared to their ICE equivalents. For more detail regarding PM emission reductions, see DEEP's response to Comment No. 3 in the Public Health and Environmental Health section of this report.

Comment 6. Several commenters, identified as residents of Connecticut, stated concerns that the implementation of this proposal would simply shift emissions from motor vehicles to the energy sector because electricity will need to be generated by fossil fuels.

Response. DEEP acknowledges that the transition to ZEVs does not represent a complete elimination of emissions caused by motor vehicles in a well-to-wheels analysis. ZEVs are, however, lower emitting than ICE vehicles for several reasons. According to the U.S. Department of Transportation's Bureau of Transportation statistics, ICE vehicles produce many more criteria pollutants such as ozone, created by NOx emissions, hydrocarbons, carbon monoxide, and particulate matter (PM).

According to EIAs Fuel economy resource, GHG emissions associated with BEVs, as a national average, produce a third of the GHG emissions of a comparable ICE vehicle. Additionally, Connecticut's electric grid is considerably cleaner than the national average. According to the EIA profile analysis of Connecticut, Connecticut's energy production comes primarily from natural gas, nuclear, various emission-free renewables, and biofuels. Connecticut BEVs are estimated to produce a fourth of the CO2 emission compared to their ICE equivalents. This figure is predicted to lower as more Class 1 renewable sources are added to the grid.

Comment 7. Some fleet owners commented on the rule, stating that MHD fleets cannot electrify because adequate public charging infrastructure is unavailable.

Response. DEEP acknowledges the infrastructure concerns of fleet owners. Connecticut is working with other states and private entities to develop solutions for public charging infrastructure; developing charging infrastructure will be coordinated across several parties, including the federal government, DEEP, PURA, the utilities, and private entities. DEEP knows the importance of adequate charging infrastructure for MHD ZEVs and, most importantly, DCFCs for charge expediency. The Department is engaged with other states, and Connecticut agencies to support building this necessary infrastructure. The federally funded NEVI program is an essential example, with the program set to develop charging networks along the state's busiest transportation corridors. DEEP notes that private businesses will also be vital in supporting the installation, operation, and maintenance of zero emission charging/refueling infrastructure.

Comment 8. Some commenters representing fleet owners noted concerns over the significant upfront price gap between ICE and ZEV MHD vehicles. Some also referenced the cost of charging infrastructure as another upfront cost to be added with ZEV adoption.

Response. DEEP notes there are several studies demonstrating that MHD ZEVs can save fleets on operating costs and provide other benefits when deployed in suitable use

cases. Currently, some market segments already are competitive with ICE vehicles on total cost of ownership, while cost projections suggest that upfront costs for ZEV MHD vehicles will continue to decline as economies of scale lower production costs. DEEP acknowledges that government incentives may be required to overcome initial cost disparities between ICE vehicles and ZEVs. The General Assembly has authorized $10 million for DEEP to develop an MHD incentive program.

Comment 9. Some commenters point out that BEVs present a unique safety hazard due to battery fire unpredictability, their difficulty in extinguishing once on fire, and the difficulty of disposing of a BEV after a fire.

Response. DEEP appreciates these concerns and notes EVs must comply with the National Highway and Transit Safety Administration (NHTSA) safety standards regardless of drivetrain technology and NHTSA has established a Battery Safety Initiative for Electric Vehicles to address safety risks related to EV batteries. NHTSA has studied and compared EV battery fires to gasoline vehicles and state in their report, Lithium-ion Battery Safety Issues for Electric and Plug-in Hybrid Vehicles, that "Regarding the risk of electrochemical failure, the report concludes that the propensity and severity of fires and explosions from the accidental ignition of flammable electrolytic solvents used in Li-ion battery systems are anticipated to be somewhat comparable to or perhaps slightly less than those for gasoline or diesel vehicular fuels. The overall consequences for Li-ion batteries are expected to be less because of the much smaller amounts of flammable solvent released and burning in a catastrophic failure situation."

Comment 10. Some commenters, including the Gasoline and Automotive Service Dealers of America (GASDA), raise concerns about batteries, from sourcing of raw materials, and operational issues like charge life and duration, to the disposal of batteries at their end-of-life.

Response. DEEP shares your concerns about the battery lifecycle, from raw material sourcing to end-of-life disposal and will continue to be involved in policy making that ensures positive environmental outcomes. DEEP understands that the proposal may increase demand for various metals including lithium to produce compliant vehicles. DEEP notes that OEMs are responsible for sourcing materials for their vehicles and must meet all applicable federal standards regarding trade and material sourcing. Passage of the Inflation Reduction Act provides significant support for ZEVs that include credits for production of critical minerals used in ZEV batteries that must be extracted or processed in the U.S. Additionally, the proposal includes durability requirements that will reduce the need for battery replacements.

Mining of virgin materials for battery production currently requires the use of fossil fuels. Recycling of lithium-ion batteries will decrease the need for intensive increases in mining, and the proposed regulations require ZEV batteries to have a label to enable

second use and recycling processes to conserve metals used in the manufacturing process of ZEV batteries. Overall, the use of batteries and electric vehicles reduces emissions of criteria pollutants and GHGs when compared to conventional gasoline extraction and combustion.

Comment 11. Several commenters identified as residents of Connecticut and as Gasoline and Automotive Service Dealers of America (GASDA) stated concerns this regulation will require emergency responders to utilize BEVs. They stated this has potential ramifications for emergency personnel responsiveness in the event of a power outage.

Response. Please note emergency response vehicles are not subject to this proposed regulation and are exempted under subsection (d)(2)(D) of the proposed regulation.

Comment 12. One comment from GASDA notes that adoption of the regulation will lead to the decrease of grassland and forests due to the increased need for renewable energy generation, and argued that such lands sequester carbon emissions, resulting in more emissions from the manufacturing of EVs.

Response. While not directly related to the provisions proposed in these regulations, Connecticut's clean energy deployment efforts include a diversity of zero-carbon resources, which includes a wide variety of technologies. DEEP has affirmed in both the Comprehensive Energy Strategy issued in the 2020 Integrated Resources Plan that the development and deployment of a diverse set of renewable resources (i.e., solar, wind, hydropower, etc.) will be needed to meet Connecticut's decarbonization and climate change goals. DEEP also has led an ongoing for a stakeholder engagement process to improve and refine solar siting and permitting practices called the Sustainable, Transparent, and Efficient Practices (STEPs) for Solar Development. This was initiated in June 2021, and it is still underway. More information can be found on the Steps for Solar Development (ct.gov) webpage.

Comment 13. Some comments from members of Connecticut businesses are concerned with the life of an electric vehicle, specifically that they may only last 7 years as compared to ICE vehicles, which can last 10+ years.

Response. DEEP appreciates the concerns of these businesses regarding the assumed useful life of an EV truck, however no data was submitted to support the assumed vehicle life. Studies supported by research institutes, such as the MIT Technology Review, indicate EV batteries should last 10 to 20 years. DEEP notes that the proposal includes durability requirements for vehicles drivetrains of at least 8 years or 100,000 miles at least 80% state of charge. Additionally, many OEMs are providing warranties that exceed CARBs minimum warranty and durability requirements. DEEP notes the proposed regulation does not impose a purchase requirement on Connecticut

businesses and those entities that decide to purchase an EV truck will need to assess a variety of costs and benefits, including warranties and OEM useful life estimates.

Comment 14. Some commenters raise concerns about MHD BEV operational life with some commenters suggesting that due to limited life charging cycles for a BEV, it will need to go through a midlife battery replacement, which will be costly to a fleet owner.

Response. The California Air Resource Board (CARB) conducted a study of MHD BEV lifetime TCO when compared to ICE vehicles for a variety of use cases. The finding suggested that TCO was less for many BEV use cases, with lighter vehicles in class 4-6 having cost savings to fleet owners. The analysis showed that even with battery replacement cost factored in for short-haul Class 7 and 8 vehicles, cost parity was achieved when forecasting battery cost and purchase cost for MY 2024 BEVs. CARB also cited in the study various drive-train warranties currently being offered by OEMs for MHD BEVs, with the industry standards warranty being 8-12 years or 100,000-150,000 miles. Another ZEV technology cited in the study was hydrogen fuel cell, which CARB noted was likely to achieve cost parity in MY 2030.

Comment 15. Some comments from fleet owners expressed concerns regarding the nationwide driver shortage. They noted that adopting BEV technology fleets could exacerbate an existing industry problem because of diminished load capacity due to operating BEVs, instead of ICE vehicles. More trips would be required and thus more drivers to deliver the same amount of goods and require new driver training on the new technology.

Response. DEEP understands the concerns of fleet operators and notes that this regulation is not a fleet mandate, and fleet owners will be able to make vehicle purchases that meet their duty cycle requirements and business needs.

Comment 16. Commenters identified as residents of Connecticut and fleet owners expressed concerns about the proposed shift to electric vehicles (EVs). They highlighted concerns regarding battery performance in hot or cold weather, which they note is a particular issue in Connecticut due to the range of temperatures commonly experienced in the state.

Response. DEEP acknowledges the concerns about Connecticut's transition to electric vehicles (EVs) and temperature extremes are an issue that can be mitigated. According to the NOAA state climate summary for CT, Connecticut's average yearly temperature is 49.9°F, with monthly temperature averages being 27.2°F in January and 72.4°F in July. Yearly temperature high extremes of above 90°F occur generally less than ten days out of the year, depending on location, and extreme cold days below 0°F are infrequent, with temperatures being this cold only one or two days a year. Based on these temperature measures, an acceptable BEV performance of 80% or above can be

expected for most of the year. Owner strategies to mitigate temperature extremes, such as keeping an EV plugged in or stored in a temperature-controlled garage during these events, can be one solution to addressing this concern. OEM advancements in EV battery performance are also expected to improve BEV performance in various temperatures in the coming years.

Comment 17. Some commenters expressed concerns about the proposed ban on gas-powered vehicles, specifically questioning the adequacy of the existing electric vehicle (EV) charging infrastructure. Elements of concern include the scarcity of charging stations, especially in rural areas, range anxiety due to limited battery life, and the need for a smoother, more extended transition period. The commenters suggested a more balanced approach that prioritizes the development of charging infrastructure and provides incentives for adopting EVs.

Response. DEEP appreciates the feedback provided on this proposal and recognizes the concerns about charging infrastructure, especially in rural areas. The improvement of battery technology is expected to mitigate range concerns is the near future, and the DEEP's phased approach, beginning with the 2027 model year, offers a measured transition to electric vehicles to allow for infrastructure build-out. The suggested emphasis on infrastructure and incentives aligns with the State's ongoing initiatives to support a cleaner, more efficient, and accessible transportation future for all residents.

In the near term, the New England grid has approximately 32,800MW of generating capacity. Under an extended heat wave condition, the regional grid operator currently expects a summer peak of approximately 26,421 MW. The distribution grid is constantly evolving to meet energy demands, as it has throughout time to absorb new loads from refrigeration, air conditioning, heating, trains, and large-scale commercial and industrial development to name a few. In recent years, that evolution has included additional renewable resources like solar and energy storage which also help stabilize the distribution grid and reduce impacts from peak demand. We expect continued growth in distributed resources, like solar and energy storage, which will help offset the increase in electrical demand from EVs.

DEEP continuously communicates with ISO-NE, the regional grid operator, and communicates with partners across the region to ensure electricity demands are met with sufficient resources. We also expect the local electric distribution companies to meet their responsibilities to maintain and upgrade the local distribution system as necessary to avoid any negative impacts resulting from increasing electric demand.

Moreover, as vehicle fleets gradually electrify, there are additional strategies that can be deployed to minimize the impacts of this new electric vehicle load, including off-peak charging incentives, utility managed charging, and even vehicle-to-grid capabilities--where batteries, like those found on electric school buses, can be utilized for grid relief

during summer when school is generally not in session. Following is an additional list of initiatives:

1. Continue Energy/Clean Transportation Planning Efforts: Utilize existing energy modeling efforts such as DEEP's Integrated Resource Planning to project anticipated load increases based on anticipated EV adoption rates.

2. Focus on the Role Smart Charging Can Play in Managing Demand: Invest in smart charging infrastructure that supports bi-directional energy flow (Vehicle-to-Grid or V2G) and load management. This enables grid operators to control charging times and rates, reducing stress during peak demand periods.

3. Integrate Energy Storage Efforts: Current programs supported by DEEP, the Connecticut Green Bank and approved by PURA will support the deployment of energy storage systems, such as batteries, at key points in the grid. These systems can store excess renewable energy during low demand periods and release it during peak times, supporting both the grid and EV charging.

4. Demand Response Programs: Demand response programs supported through ISO-NE and through other programs can encourage incentivize EV owners to charge during off-peak hours. Connecticut's EV Charging Program, established by PURA and administered by the Utilities, incentivizes participants to charge their EVs during off-peak hours and to participate in peak demand events. The impacts of EV charging will be further reduced by continuing to promote variable electricity pricing to encourage charging when the grid has surplus capacity, ensuring grid stability.

5. Renewable Energy Integration: Integrate renewable energy sources like solar and wind into the grid. Coordinating EV charging with renewable energy generation can help manage load.

6. Host Capacity Mapping and Transparency: Connecticut's utilities have been developing detailed Host Capacity Maps that depict the existing grid conditions and operations that the utilities infrastructure can accommodate, with limited system upgrades, while still reliably and safely delivering electricity. The information found on these maps details the hosting capacity by circuit and direct clicks on circuits will also bring up more detail about the circuit, its remaining capacity and related substation. These maps are a helpful tool in determining the scope of upgrades needed to install EV charging at a particular facility.

7. Public-Private Partnerships: Foster partnerships with private sector companies, municipalities, and public transportation authorities to develop charging networks. Coordinated efforts can lead to a more cohesive and reliable charging infrastructure.

8. Education and Outreach: Educate consumers, EV owners, and local communities about the benefits of managed charging, grid reliability concerns, and the role they can play in supporting a stable grid by adopting certain charging behaviors.

Comment 18. Some remarks from fleet owners questioned their ability to install Direct Current Fast Chargers (DCFC) necessary to charge their vehicles in fleet depots without enormous expense for electrical facility upgrades to accommodate DCFC.

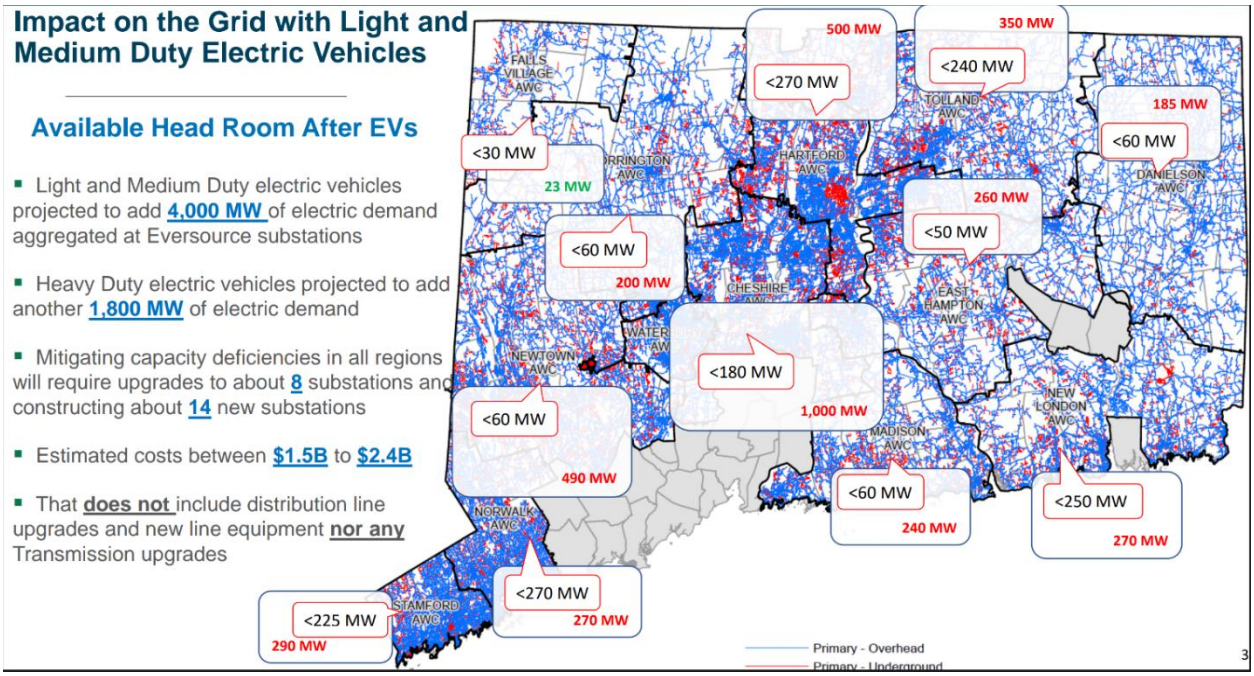
Response. DEEP recognizes additional costs will be incurred for infrastructure deployment and is engaged with PURA on developing a path forward to minimize the costs to fleet owners. DEEP and state agencies are also active in leveraging funding from federal programs for charging that may help in this area such as the National Electric Vehicle Infrastructure (NEVI) program, the Clean Fuels Infrastructure Program (CFI) and the Diesel Emission Reduction Act (DERA). DEEP also reiterates that the proposed rule is not a fleet mandate and does not require fleet owners, especially tractor-trailer long haul fleets, to purchase ZEV vehicles.

Comment 19. The retail food community, representing several local businesses responsible for food distribution, raises concerns about the proposed regulations. While they express commitment to environmental conservation and carbon emission reduction, their comments express a concern that: (1) the regulations might increase food costs, threaten jobs, and adversely affect local economies; (2) the state lacks necessary infrastructure, especially for charging electric vehicles; (3) there are not efficient zero-emission trucks; (4) electric grid has limitations that might also disrupt consistent food delivery; and (5) the regulations could also lead to inflation, impacting low and middle-income families. They urge DEEP to reconsider these regulations, hoping for solutions that prioritize both environmental goals and the sustainability of the food distribution sector.

Response. DEEP appreciates the insights shared by the retail food community. Recognizing concerns about infrastructure, technology, and economic impacts, the State is actively working to enhance charging infrastructure and grid reliability. As zero-emission truck technology evolves, it is expected that availability will grow, and costs will diminish. The State's goal is to balance environmental objectives with economic stability. DEEP values the community's commitment to collaboration and looks forward to working together towards shared goals.

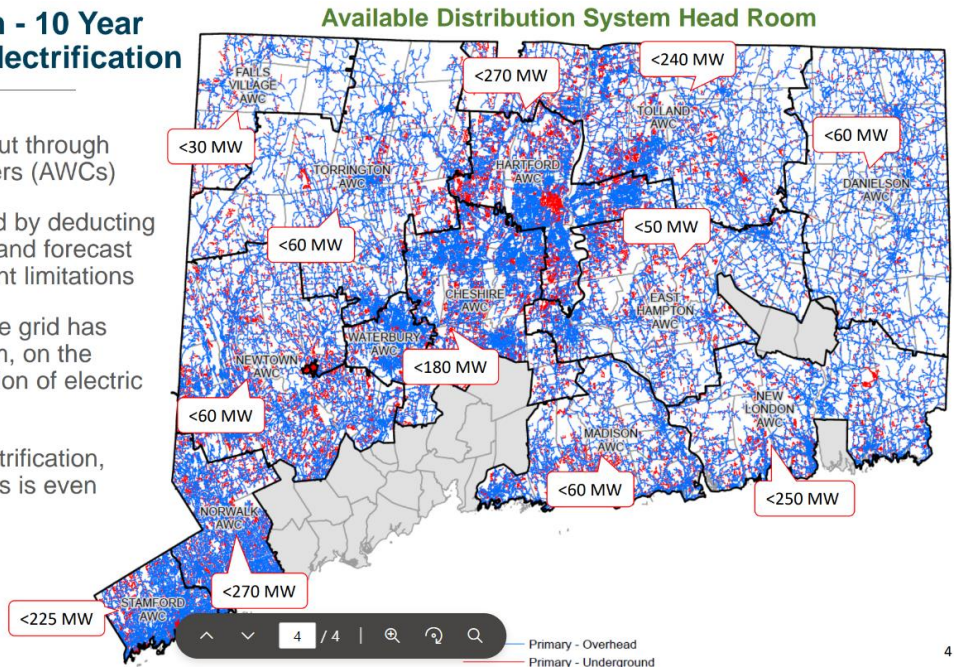
Note: Responses to charging infrastructure adequacy, and grid capabilities are answered elsewhere in this document, such as response to Comment 2 related to the deployment of charging infrastructure, and the following comment.

Comment 20. Eversource Energy (Eversource), Connecticut's largest energy distribution company, highlighted their commitment to aiding the State's clean energy objectives and pointed out the steady growth in the stock of EVs in Connecticut and the consequential increase in electric demand. Eversource provided data showing that LDV electrifications were going to add 4000 MW of demand by 2035, and that MHD electrification would add 1800 MW of demand. The increased demand would require upgrades to 8 substations and 14 new substations. In total the upgrades were estimated at between $1.5 billion and $2.4 billion dollars. It provides figures and data, referencing attached slides, on the expected electric demand from both Light and Medium-Duty Electric vehicles and Heavy-Duty vehicles. Against the backdrop of a recent decision by the Public Utilities Regulatory Authority (PURA), which Eversource perceived as inhibiting necessary investments for EV infrastructure, Eversource estimated there will be a need for substantial electric infrastructure upgrade to support full vehicle electrification in 2035 in Connecticut. It highlights a domino effect in infrastructure requirements as more residents adopt EVs, from local transformers to substations and transmission lines. Eversource emphasized challenges they faced as EV users and stresses the importance of having not just sufficient EV infrastructure but also efficient and reliable ones. Eversource concluded by emphasizing their readiness to work collaboratively with the State and other utilities to meet clean energy objectives.



State of the System - 10 Year Forecast without Electrification

- Operations is carried out through thirteen Area Work Centers (AWCs)
- Headroom is calculated by deducting the planned electric demand forecast from substation equipment limitations
- While on aggregate, the grid has some available headroom, on the distribution system, location of electric demand is critical
- Specific to vehicle electrification, miles driven by customers is even more critical



Response. DEEP as an integrated agency with responsibilities for energy and environmental planning has been engaged in infrastructure planning efforts that have been designed to conduct the necessary planning to ensure infrastructure deployment occurs in sync with the vehicle deployment levels anticipated as part of the regulatory framework of the ACT rule.

While the specific impacts are subject to variables such as the impact of regulatory compliance flexibilities utilized by OEMs, DEEP, along with the utilities and state regulators, are already accounting for increased EV charging through various planning processes. Planning for increases in charging have been addressed by the Connecticut EV Roadmap, the Public Utilities Regulatory Authority (PURA) Zero Emission Vehicle Docket, and the 2020 Integrated Resources Plan.

The PURA ZEV Docket created a plan to provide funding through the utilities to install charging infrastructure sufficient to meet Connecticut's 2025 and 2030 electric vehicle sales goals of 125,000 vehicles. Modeling for charging needs was done using the U.S. Department of Energy's EV Pro-lite modeling tool. Further planning will account for increases in the number of vehicles, and load management tools such as the National Renewable Energy Lab's load management model will help to improve consumer education and utility demand management to reduce impacts on the grid.

In addition, demand response programs supported through the regional electric grid operator, the ISO-New England, and through other programs, can incentivize EV owners to charge during off-peak hours. Connecticut's EV Charging Program, established by

PURA and administered by the Utilities, incentivizes participants to charge their EVs during off-peak hours and to participate in peak demand events. The impacts of EV charging will be further reduced by continuing to offer and promote variable electricity pricing to encourage charging when the grid has surplus capacity, ensuring grid stability.

Compliance and Enforcement

Comment 1. Some comments suggest that potential legal conflicts between ACT/HDO standards and federal statutes such as EPCA, CAA, and EISA. These comments argue that California is preempted from adopting these rules because authority to regulate fuel economy is expressly given to NHTSA and not EPA.

Response. The California emission standards were adopted according to that state's administrative requirements and were analyzed to determine there is no conflict with federal statutes concerning the regulation of fuel economy, which is an authority reserved to NHTSA. The GHG provisions of the proposed emission standards expressly apply to parts of the vehicle for which both EPA and California have well established authority to regulated and for which EPA has previously granted waivers under section 209(b) of the CAA to California for the LEV II and LEV III standards.

Comment 2. Some commenters stated that Connecticut cannot legally adopt the California standards, pursuant to section 177 of the Clean Air Act, until California has received a waiver of preemption from EPA.

Response. Rule adoption is distinct from rule implementation. DEEP seeks to adopt these emissions standards, pursuant to CAA section 177 and CGA section 22a-174g, this year, but not to implement such standards until 2027, which is anticipated to be after California receives its CAA section 209b waiver of preemption from EPA. This is in keeping with a long established and legally vetted administrative process. If EPA does not grant a waiver neither California nor any state that has adopted the emission standards may enforce them.

Comment 3. Some commenters identified as residents of Connecticut stated that they believed the regulation should be decided by the Connecticut General Assembly and not through a regulation of a Connecticut State Agency.

Response. DEEP notes that the Connecticut General Assembly also reached a decision on the topic of this regulation. The General Assembly authorized the Commissioner of Energy and Environmental Protection to adopt the medium and heavy-duty motor vehicle standards of California through Public Act 22-25 section 15(c). The General

Assembly debated this legislation at length prior to approval and the Governor signed it in May of 2022.

Comment 4. DEEP received comments from several organizations that CARB has not finalized their rulemaking, and, as such, adoption by Connecticut is premature.

Response. CARB finalized the adoption of the ACT and Low NOx Omnibus rules on March 15, 2023. Amendments that are in the active rulemaking process in California are in response to CARB and EMA's agreement and are intended to be minor revisions, which add further flexibility for regulated entities. As required by the Clean Air Act and Connecticut statutes, DEEP intends to remain up to date with the California regulation. However, suspending the adoption process at this time is not prudent.

CARB and various OEM organizations negotiated a compromise harmonization between CARB's ACT and HDO regulation and EPA's Clean Trucks Plan. This harmonization largely aligns CARB's regulation with EPA's Clean Trucks Plan for MY 2027. The agreement also makes some substantial alterations to the CARB regulation for MY 2024 through MY 2026; however, these changes will not affect Connecticut's regulation, which goes into effect in MY 2027. This proposed harmonization will not substantially affect this regulatory framework.

Comment 5. Some commenters, identified as residents of Connecticut and as Connecticut businesses in the fuel delivery sector, express concerns about adopting the CARB ACT and HDO as California initially developed these regulations without input from Connecticut.

Response. DEEP appreciates the concerns regarding Connecticut's regulatory direction in relation to California's policies. DEEP understands the distinct characteristics of each state, and while some regulations might have their origins in other jurisdictions, the state's primary aim is to adopt the best policies available to meet the public health needs of Connecticut. To that end, it is important to understand the national structure for regulating vehicle emissions, with transportation being a sector for which it is critical Connecticut get emission reductions.

Connecticut was involved in developing the standards proposed here. DEEP was an active participant in the regulatory development process. DEEP participated in multistate planning with California and the OEMs and continues to participate in those conversations regarding enforcement, future program amendments, and state specific concerns with program administration. DEEP is also part of the group undertaking planning efforts for future compliance reporting platforms. DEEP additionally coordinated through the Northeast States for Coordinated Air Use Management (NESCAUM) and through the National Association of Clean Air Agencies (NACAA) to provide testimony and comments during the regulatory adoption process in California.

Under the Clean Air Act (CAA), all states except California are preempted from setting emissions standards for new vehicles. See CAA section 209 of the CAA. Section 177 of the CAA, allows states to adopt California standards as an alternative to federal emissions standards and states that have adopted these provisions are sometimes referred to as "section 177 states." CARB, since adopting the original advanced clean cars rule in 1990, has considered in its rulemaking process the concerns of section 177 states. Connecticut expects this level of cooperation to continue as CARB moves to regulation MHDs.

New York, Vermont, Massachusetts, New Jersey, Colorado, Washington, and Oregon have already adopted the standards Connecticut is proposing to adopt. In addition, Rhode Island, Maine, Maryland, and New Mexico are in the process of adopting these standards.

Comment 5. Some comments suggest that the Regulatory Flexibility Analysis does not contain a sufficient level of costs to business and that the effects on Connecticut businesses are underrepresented. Those commenters additionally note that DEEP measured possible impacts using California numbers and did not include an analysis using Connecticut specific numbers. Due to these perceived insufficiencies, the comments suggest Connecticut should suspend the regulatory adoption process.

Response. DEEP appreciates the concerns regarding accurately measuring the effect on state businesses and the economy. DEEP notes that significant steps were taken to analyze the impact on Connecticut as a result of the adoption of the ACT and HDO rule, and further that those analysis use Connecticut specific inputs. DEEP has utilized industry-standard modeling platforms, including MOVES, COBRA, and AFLEET, to help determine Connecticut's impacts due to the adoption of this regulation. Those models, as shown in the impact assessment included with the notice for this regulation, show significant and positive economy wide effects as a result of adoption of the regulation. The economic effects of increased vehicle costs and TCO impacts are noted in the impact assessment as well. DEEP continues to invite input from Connecticut's businesses and residents to continue working to create regulations that are economically viable and environmentally friendly.

Stakeholder Response and Feedback

Comment 1. Comments from Rivian Automotive, LLC (Rivian), an EV OEM, support adoption of the regulation. The comments note that the regulations were adopted with technological

feasibility in mind and that the regulations contain flexibilities such as averaging, banking and trading (ABT) of credits, which allows for stronger OEM compliance.

Response. DEEP appreciates the comments of Rivian, especially those relating to the technological feasibility of the proposed regulations. DEEP, along with California and the other 177 states, is committed to continuing to work with OEMs to ensure that all OEMs can comply and further that the standards remain technologically feasible. This commitment was shown in 2018 when Connecticut, participating with all adopting states, participated in the technological feasibility analysis conducted by CARB of the previous light-duty vehicle ZEV regulation.

Comment 2. Comments received from Nikola Corporation suggests adoption of the California Clean Fleets Rule (CFR), which creates fleet owner requirements, to help support ACT.

Response. DEEP has not proposed adoption of the CFR, or of any fleet owner mandates, and does not propose such change in response to this comment.

Comment 3. The Zero Emission Transportation Association (ZETA), an industry backed coalition of over 60 companies involved in the supply chain for EVs, including batteries, parts and electricity providers, provided comments in support of the proposed regulation. ZETA states in its comments that the supply chain is ready and able to meet increasing demand for electric vehicles. It notes that diesel engines typically have a lifespan of 15 or more years, meaning that failing to start the electrification transformation now will have lasting effects. The comments state that while there is work being done to better understand the supply chain of critical metals necessary for batteries, to ensure materials can be sourced ethically and responsibly.

Response. DEEP appreciates the support and supporting information supplied by ZETA regarding supply chain readiness and the industry's support for the proposed regulation.

Comment 4. Comments received by the Connecticut Bus Association (CBA) indicate a concern that the earliest bus manufacturers can meet the requirements of the proposed regulations is 2026, and that the engine manufacturer's will not be able to meet the demand created by the regulation.

Response. DEEP appreciates the concerns of the Connecticut Bus Association and is ready to work to ensure that needs of bus fleet will be met during the transition. However, it is important to note that the Connecticut regulation will not go into effect until 2027. Additionally, the regulation exempts transit and school buses, reducing the number of buses required to comply with the proposed regulations. Comments received by the Truck Engine Manufacturer's Association (EMA), which represents worldwide manufacturers of internal combustion engines and on-highway medium- and heavy-duty trucks, support the regulation and indicate it is technologically feasible given

certain supporting policies which DEEP and other state agencies are working to implement. In DEEP's experience the industry has been able to meet demand, as the DATTCO and the Connecticut Technical Schools are expected to start taking delivery of 25 electric school buses ordered earlier this year.

DEEP also acknowledges the CBA's concerns with emissions requirements also affecting the engines used in their fleets, However DEEP notes that while the CBA may have some specific applications for which they will be required to comply with this regulation, transit buses are generally exempt from this rule making. DEEP also points out the regulation is not a fleet mandate and fleet owners remain free to purchase vehicles that fit their duty cycles. With regards to CBA's concerns that OEMs will not be able to comply with CARB's emission standards and that there will be a shortage of vehicles for MY 2024-2026, DEEP notes that those model years are not covered by this proposal and that OEMs have expressed no such concern when commenting on this regulation.

Comment 5. Comments received from Nikola Corporation request adoption of minimized demand charges, make ready programs and systems for utility investment, to help support the implantation of the ACT rule, fleet investments, and hydrogen production.

Response. Electric charge rates are the express authority of the Public Utilities Regulatory Authority (PURA) and as such outside the scope of this rulemaking. Connecticut DEEP does participate in PURA dockets to the extent that information on its policies and programs can inform PURA rate decisions.

Comment 6. Comments received by the American Petroleum Institute (API) encourage DEEP to adopt a policy that allows private and public entities to adopt the powertrain option that makes the most sense for their use case.

Response. DEEP appreciates this comment. Adoption of the ACT regulation does just this, by making sure that public and private entities that want to purchase advanced technology vehicles can do so in Connecticut. The ACT regulation does not ban gasoline or diesel vehicles and provides flexibility for entities to choose the vehicle that makes sense for them.

Feedback and Suggestions.

Comment 1. Comments received from the Engine Manufacturers Association (EMA) noted that the industry, including the regulated entities subject to this regulation, is in a position to comply with the regulation, as represented by the negotiated harmonization between CARB and Federal standards. EMA's comments indicate that the organization has entered into a comprehensive agreement with CARB regarding the implementation of a suite of state and

federal regulations to help transition the MHD on-highway vehicle sector to zero-emission (ZE) trucks. (See CARB website; "CARB and truck and engine manufacturers announce unprecedented partnership to meet clean air goals.") The agreement includes, among other things, commitments to cooperate on the implementation of CARB's ACT regulations in the increasing number of "opt-in" states, and to align CARB's MHD "Omnibus low-NOx regulations with EPA's recently-finalized "Clean Trucks Plan" regulations as of the 2027 model year. Industry manufacturers noted that the regulation will require state incentives and programs to ensure consumers opt to purchase available OEM models. The comments additionally suggested certain flexibilities not currently present in the regulation, such as a pooling system for ACT ZEV credits for state's opting into the CARB ACT regulation and early compliance credits for manufacturers already selling ZEVs in state.

Response. DEEP thanks OEMs and their representatives for their input and availability in commenting on the proposed rule. Regarding flexibilities, DEEP is actively participating with other states to develop additional flexibilities, including the possibility of pooling. DEEP is committed to providing ongoing incentives, recognizing the acquisition cost of EV trucks can be significantly than for ICE vehicles.

In addition, DEEP will be developing an incentive program in early 2024 using $10 million that was allocated to DEEP in the Connecticut Clean Air Act (P.A. 22-25). This incentive program will be aimed at assisting MHD Fleet and vehicle owners in purchasing Zero Emission MHD models. DEEP is also committed to providing OEM's with early compliance credits in line with the early compliance credit provisions of the regulation.

Comment 2. Comments were received by EMA that identified a technical error in the proposal concerning how compliance credits are earned and debited in the California regulation section 1963.1 and 1963.2, specifically that engine manufacturers are frequently not aware of when a vehicle is sold to an ultimate purchaser (the time of credit accrual). EMA notes that California has undertaken a rulemaking to fix this problem and has additionally agreed that credit accrual shall be when the vehicle is produced. EMA requests that DEEP take steps to fix the "timing" issue to offer guidance that confirms that early compliance credits may be accrued for vehicles intended for sale in Connecticut.

Response. DEEP appreciates EMA's concerns and will work with California and EMA to take the steps necessary by year end to assure that OEMs can gain early compliance credits in Connecticut.

Comment 3. Connecticut received comments from CALSTART in support of the proposed adoption of MHD standards. CALSTART's comments highlighted the need for continued

incentive programs, responded to elsewhere in this report, but in addition, suggested the creation of a Connecticut fleet assistance program in line with those in other jurisdictions that have adopted the ACT rules, including Massachusetts, New York and California. In addition, CALSTART's comments were accompanied by a letter of support from businesses in the MHD area including: Rivian, Lion Buses, ZEEM solutions, BYD motors, and ChargePoint, Inc.

Response. DEEP appreciates the comments of CALSTART and the businesses who signed the letter in support of the proposed regulation. With regard to a fleet assistance program, DEEP will continue pursuing policies that provide incentives to fleets looking to transition to EVs. Fleet assistance programs are one such option that has been shown to work in partner states that DEEP will take into consideration in the future.

Comment 4. Comments received from Penske Truck Leasing Company (Penske) encourage that the Large Entity Reporting (LER) 1) be allowed via Microsoft Excel, to allow for notes that otherwise would not be available using a form for data entry, 2) allow for vehicle grouping by location rather than model year to better understand location needs for charging and vehicle usage, and 3) allow brokerages flexibility in responding to LER requests to provide data available at the brokerage.

Response. DEEP appreciates the comments of Penske regarding the LER effort. DEEP anticipates conducting outreach prior to this reporting in 2024 to give stakeholders an opportunity to provide feedback on the best methods for collecting the information. DEEP will integrate Penske's comments into the LER planning effort.

Comment 5. Numerous commenters have expressed a need for continued grant and incentive programs to support the adoption of MHD EVs due to higher initial prices and increased prices for charging infrastructure.

Response. DEEP appreciates the concerns regarding the importance of grants and incentives. Many states see grant and incentive programs as an integral part of the clean transportation future. To remain competitive with these states DEEP will continue to develop and seek additional funding for these programs going forward. DEEP intends to develop a MHD fleet incentive program in 2024 that will include $10 million in initial funding provided through the Connecticut Clean Air Act (P.A. 22-25). Additionally, DEEP will continue to seek additional federal funding where possible, which included in 2023 submitting an application for the U.S. DOT Clean Fuels Incentive (CFI). DEEP's application included funding for four (4) MHD hydrogen facilities around the state. DEEP is committed to helping fleets meet the higher initial costs of electrification as long as price parity points justify doing so.

Comment 6. Comments were received from EMA that encourage an opt-in state pooling program to provide flexibility to OEMs in complying in the numerous 177 states. EMA encourages that such a program have no "tax" or discount when transferring between 177 states.

Response. DEEP is actively coordinating with the other section 177 states, California and NESCAUM to engage with EMA and other OEMs regarding a MHD pooling program in the 177 states. DEEP worked with LDV OEMs previously to provide a pooling option and recognizes the flexibility it affords regulated entities. Please note, under the light-duty ZEV program, pooling treated all eastern 177 states as a single entity with no transfer premium within the eastern pool.

Comments & Feedback from Members of the Connecticut General Assembly

Comment 1. 53 members of the House Republican caucus submitted a comment letter in opposition to proposed regulations PR 2023-023 and PR 2023-020, emphasizing that California's approach might not be suitable for Connecticut. House Republicans highlight potential strains on the state's electricity infrastructure, challenges in charging infrastructure, increased costs for EV drivers, and environmental issues related to EV production and use. The comment concludes by urging a reconsideration of the regulations due to the multifaceted concerns raised.

Response. DEEP appreciates detailed feedback on the proposed regulations. The MHD regulations are designed with considerations for the electric grid's reliability, road infrastructure resilience, and the complete life-cycle environmental implications of vehicles. In the MHD Assessment, DEEP found the California emissions standards framework provides a flexible and effective air pollution reduction program that suits Connecticut's unique air quality challenges. Furthermore, planned state and federal incentives will help to ensure equity and affordability. Feedback is vital for refining this approach to ensure optimal outcomes for Connecticut. The comments raised are also addressed in other sections of this report: for cost issues, see response to comments 17, 19, 1, and 5 on pages 19, 22, 30, and 32, respectively; for grid reliability issues, see response to comment 4 on page 22; and for battery end of life/ waste management issues, see response to comment 5 on page 13.

Comment 2. Twenty-one state legislators of both chambers submitted a comment letter in support of the proposed regulations. The letter noted that the timing of the regulation is uniquely ideal as the state is able to leverage active programs and federal money to support the regulation through infrastructure investments. The comments also stated the proposed timeline of the regulation beginning in 2027 and finalizing in 2035 should give the legislature ample opportunity to address issues that may arise due to adequacy of the state's grid infrastructure.

Response. DEEP appreciates detailed feedback from legislators on the proposed regulation and notes that the roll out and success of the regulation will go hand in hand with legislative initiatives.

Comment 3. Connecticut State Senator Christine Cohen wholeheartedly supports the adoption of the proposed regulations. The commenter emphasizes that these regulations are crucial for reducing emissions, decreasing reliance on fossil fuels, and fostering sustainability. They also point out the effectiveness of California's emission standards in spurring innovation and reducing pollution. The commenter urges that Connecticut should take a leadership role in environmental challenges, aligning with other states and incentivizing clean technologies.

Response. DEEP appreciates the strong support from Senator Cohen including the support provided to expand the CHEAPR program, adopt MHD standards and help DEEP meet the state's federal clean air obligations.

Comment 4. State Senator Jan Hochadel indicated strong support of the regulation. She noted in written comments that the forest fires and other dangers relating to climate change have been on the rise. She also notes the proximity of many of her constituents to busy highway corridors and resulting air quality concerns.

Response. DEEP appreciates the strong support from Senator Hochadel and appreciates insight into the effect of mobile source pollution on air quality near transportation corridors as well as her call for the state to do its part to address climate change.

Comment 5. State Senator Rob Sampson submitted comments in opposition to the proposed regulation. The Senator objected to potential restriction on consumer freedoms, as well as the potential for creating an undue burden to vehicle manufacturers who will be required to change their business model. The Senator also stated that human caused climate change has not been conclusively proven and thus there is no need for this regulation. The senator noted other concerns including the ability of state's grid to support EVs, environmental concerns regarding EV production and disposal, and the upfront costs of EV when compared to their ICE counterparts.

Response. DEEP acknowledges the concerns expressed by Senator Sampson and notes the proposed emissions standards were designed to not just to reduce Green House Gas emissions but also ozone forming air pollution to protect public health and the environment. The Senator's other concerns are addressed in other responses in this document. For example, please see the responses to comment 17 (Grid Response), 4 (Battery Recycling), and 8 (Increased Costs) of the Technology and section.

Comment 6. State Senator Seminara expresses strong reservations about Connecticut's proposal to ban sales of new gasoline or diesel-powered cars by 2035. The primary concerns identified were potential restrictions on consumer freedom and the potential unforeseen consequences of the regulation. These concerns include the capability of Connecticut's electrical grid, the state's already high electrical rates, potential fire hazards, affordability issues, sourcing and impact of EV battery materials, the viability and sufficiency of charging stations, and the larger geopolitical implications of relying on adversary nations for materials. Additionally, Senator Seminar is apprehensive about the environmental impact of discarded lithium-ion batteries and is concerned about the negative economic implications for lower-income communities in the state.

Response. DEEP acknowledges the concerns expressed by Senator Seminara and notes the proposed emissions standards do not ban the sales of gasoline or diesel MHDs. The proposed regulations are designed to reduce ozone forming air pollution and GHG emissions to protect public health and the environment, benefiting all residents, including lower-income communities. DEEP is steadfast in its commitment consider the economic, social, and environmental facets of the transition to electric vehicles. This ensures a balanced approach to clean transportation, keeping in mind the best interests of all Connecticut residents. Many of his concerns are addressed in responses to other comments in this document.

Comment 7. State Senator Kelly highlights perceived privileges associated with the proposed regulations, suggesting they favor those who can afford EVs and the necessary infrastructure. Data is presented that state subsidies tend to benefit the affluent, leaving the working class and poor at a disadvantage. Concerns are also raised about the potential adverse effects on small businesses, especially those associated with gas-powered vehicles. Criticism extends to the fiscal note, calling it misleading and emphasizing unaccounted revenue losses. The commenter calls for a comprehensive reevaluation, legislative intervention, and adequate consideration of grid capacity and infrastructure. Claimed potential negative implications for vulnerable citizens and the economic burden of EV costs are underscored.

Response. DEEP appreciates Senator Kelly's comments and notes the proposed emission standards establish a framework to support a range of vehicles and promotes the development of cost-effective electric MHD vehicle options when complimentary policies now are development, such as MHD vehicle incentives, are taken into account.

Comment 8. State Senator Gordon expressed strong opposition to the proposed 2035 regulation on gas-powered vehicles in Connecticut. Senator Gordon commented that the regulation infringes on the freedom of choice for both consumers and automakers and highlighted his skepticism regarding the scientific evidence connecting manmade CO_2 emissions to global climate change. Additionally, Senator Gordon questioned the effectiveness of the shift to electric vehicles in reducing fossil fuel consumption, especially considering the state's

reliance on natural gas for its electric grid and emphasized the global nature of climate issues, suggesting that Connecticut's efforts might be too small to matter. Economic concerns and the high costs associated with electric vehicles, which might deter consumers and result in the prolonged use of older gas vehicles, were highlighted, as were ethical and environmental concerns surrounding electric vehicle production, including the sourcing of essential materials from countries with questionable human rights and environmental records. Lastly, Senator Gordon raised concerns about Connecticut's electric grid's capacity to cater to the increased demand posed by electric vehicles.

Response. DEEP appreciates the comments and concerns provided by Senator Gordon. It is a priority of DEEP to balance individual freedoms with the broader environmental and health benefits for its residents. As for the relationship between CO_2 emissions and climate change, DEEP draws upon the prevailing scientific consensus that highlight the role of manmade emissions in global warming. The Senator's additional concerns regarding price and technological challenges are answered elsewhere in this document see DEEP's responses to Comment 2 in the Technological & Infrastructural section and comment 4 of the Regulation and Policy section.

Comment 9. State Senator Ceci Maher points to recent extreme weather events as evidence of the urgent need to address climate change. Recalling Connecticut's decision in 2004 to adopt light-duty emissions standards like California's, the commenter emphasizes the state's history of leadership in environmental matters. The rapid adoption and growth of electric vehicles (EVs), both in the U.S. and globally, is highlighted, with sales figures noting significant increases. Major auto manufacturers are recognized for transitioning to more sustainable vehicle models. The commitment of neighboring states to phasing out gas-powered vehicles is presented as a direction Connecticut should follow. The overarching message is that Connecticut should not backtrack but rather progress with stricter emission requirements to safeguard the future for subsequent generations.

Response. DEEP appreciates the support expressed by Senator Maher and the significance of addressing climate change and its relation to vehicle emissions. DEEP acknowledges the rapid growth of the electric vehicle industry and the commitments of major automobile manufacturers towards cleaner vehicles. It's also recognized that Connecticut has set a precedent in the past and should strive to maintain its leadership position. The increasing frequency of extreme weather events emphasizes the urgent need to take robust action. DEEP agrees that there's a necessity to evaluate and enhance emission requirements, ensuring they cater to all residents and guide the state towards a sustainable future.

Comment 10. Representative Joe Gresko expressed strong support for the proposed emission standards. The Representative highlighted Connecticut's historical commitment to strict emissions standards, and further stated that the new LEV standards represent the auto

industry's commitment to reduce pollution and address environmental challenges. The representative further noted that other states like New York, Massachusetts, and Vermont have recently adopted similar standards. The representative highlighted the auto industry's shift away from internal combustion engines and emphasizes the importance of battling "bad air days" through improved technology to spur green economic growth.

Response. DEEP appreciates the comments in support of the proposed emission standards. DEEP acknowledges the rapid growth of the electric vehicle industry and the commitments of major automobile manufacturers towards cleaner vehicles. It's also recognized that Connecticut has set a precedent in the past to provide stringent emissions standards and should strive to maintain its leadership position. As the representative accurately notes, Connecticut's surrounding states have adopted this regulation as well and the frequency of state "bad air days" underscores the need to address the issue.

V. Comments of the Hearing Officer

Comment 1. A comment received from Rich Hanratty, commented that subsection (d) refers to a section of the California Code of Regulations (CCR) that doesn't exist: CCR Title 13 section 1965.8. DEEP agrees with the comment and has amended the proposed text to refer to CCR Title 13, section 1956.8, the correct citation.

(d) Exemptions. (1) The provisions of California Code of Regulations, Title 13, section 1956.8(a)(2)(F) "Transit Agency Diesel-Fueled Bus and Engine Exemption Request" do not apply. (2) The following vehicles shall not be subject to this section: (A) Any vehicle subject to an exemption set forth in California Code of Regulations, Title 13, section **1956.8**; (B) Any new diesel-fueled bus sold to any transit agency; (C) Any school bus as defined in section 14-1 of the Connecticut General Statutes; and (D) Any authorized emergency vehicle as defined section 14-1 of the Connecticut General Statutes."

VI. Conclusion

Based upon the comments addressed in this Hearing Report, I recommend the proposal be adopted as noticed, and that the final proposal be submitted by the Commissioner for approval by the Attorney General and the Legislative Regulations Review Committee, and upon adoption, certain provisions be submitted to the U.S. Environmental Protection Agency as a revision to the State Implementation Plan. Of note, many comments received through the Connecticut Secretary of State's eRegulations system for this rulemaking concern DEEP's proposed light-duty vehicle regulations. These comments are not within the scope of this rulemaking; however, the reasons and concerns in those comments are largely responded to in the hearing officer's report for that rulemaking.

Paul Kritzler

/s/ Paul Kritzler
Hearing Officer

9/21/2023
Date

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