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October 1, 2015

Christopher Grundler
Director, Office of Transportation and Air Quality
U.S. Environmental Protection Agency
Air and Radiation Docket and Information Center
Mail Code 28221T
1200 Pennsylvania Avenue NW
Washington, DC 20460
Attention: Docket I.D. #EPA-HQ-OAR-2014-0827

Mark R. Rosekind
Administrator
National Highway Transportation Safety Administration
U.S. Department of Transportation
Docket Management Facility M-30, West Building, Ground Floor, Rm. W12-140
1200 New Jersey Avenue SE
Washington, DC 20590
Attention: Docket I.D. #NHTSA- 2014-0132

Re: *Proposed Rules for Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles - Phase 2*

Dear Docket Administrator:

The Northeast States for Coordinated Air Use Management (NESCAUM) offers the following comments on the joint EPA/NHTSA proposal, published on July 13, 2015 in the Federal Register, entitled *Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles - Phase 2* (80 Fed. Reg. 40138-40765). NESCAUM is the regional association of air pollution control agencies in Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont. The comments below reflect the majority views of NESCAUM as a state membership organization. Individual NESCAUM member states may hold views different from the NESCAUM states' majority consensus.

Our states commend EPA and NHTSA for proposing rules that will lead to substantial reductions in greenhouse gas (GHG) emissions from the heavy-duty sector. The rule as proposed, however, does not take full advantage of available and proven technologies and should be made stronger in several areas. In addition, our states remain concerned about emissions of nitrogen oxides (NOx) from this sector, and urge EPA to begin rulemaking to require further reductions in NOx from

heavy-duty trucks at the earliest possible date. Below we discuss several specific areas in which the rule can and should be strengthened.

The agencies should adopt the timeline proposed in Alternative #4.

Given that the proposed technologies are already mature or have been successfully demonstrated, and given our states' need for significant GHG reductions in the near term, the timeline proposed in Alternative #4 is both reasonable and appropriate. Based on the assessments of the California Air Resources Board (CARB) and the International Council on Clean Transportation (ICCT), a full phase-in of the rules by 2024 is technologically feasible. Given the scope of needed GHG reductions, and the compelling benefits to freight industries and their consumers from reduced fuel expenditures, 2027 is too long to wait to realize the full potential of this rule.

As ICCT[1] and CARB[2] have noted, existing technologies are already available to provide the proposed reductions in the 2024 timeframe. Moreover, manufacturers have expressed their intentions to further increase the deployment of these technologies in the near term. These technologies are cost-effective and have been shown to provide strong return on investment for operators.

The engine standard should be stronger.

The proposal would reduce fuel consumption from engines by 4.2 percent, which is far short of what is achievable over the coming decade. We note that at least one engine manufacturer has indicated potential engine efficiency improvements of 15 percent or more even with advanced NOx controls. Moreover, EPA's estimates for both the effectiveness and likely market penetration of engine efficiency technology improvements are far too conservative, according to analyses performed by CARB[3] and ICCT.[4]

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[1] International Council on Clean Transportation, *Advanced Tractor-Trailer Efficiency Technology Potential in the 2020-2030 Timeframe* (April 2015). Available at: http://www.theicct.org/sites/default/files/publications/ICCT_ATTEST_20150420.pdf.

[2] California Air Resources Board, *Draft Technology Assessment: Engine/Powerplant and Drivetrain Optimization and Vehicle Efficiency* (June 2015). Available at: http://www.arb.ca.gov/msprog/tech/techreport/epdo_ve_tech_report.pdf.

[3] California Air Resources Board, *Engine/Powerplant and Drivetrain Optimization: Vehicle/Trailer Efficiency Technology Assessment*, presented at the Air Resources Board Symposium on California's Development of its Phase 2 Greenhouse Gas Emission Standards for On-Road Heavy-Duty Vehicles (April 22, 2015). Available at: http://www.arb.ca.gov/msprog/onroad/caphase2ghg/presentations/2_1_alex_s_arb.pdf.

[4] International Council on Clean Transportation, *United States Efficiency and Greenhouse Gas Emission Regulations for Model Year 2018-2027 Heavy-Duty Vehicles, Engines, and Trailers* (July 2015). Available at: http://www.theicct.org/sites/default/files/publications/ICCT-update_US-HDV-Ph2-NPRM_jun2015_v2.pdf.

The full-vehicle standard should be stronger.
Commensurate with increased engine stringency, the tractor standards should be strengthened to ensure that manufacturers utilize the full suite of appropriate complementary technologies, in addition to engine improvements.

There should be no backsliding on fine particulate matter (PM2.5) and NOx from increased use of auxiliary power units (APUs).
We also urge the agencies to ensure that there are no increases in emissions of either PM2.5 or NOx as a result of the proposed rule. We note that the agencies project an increase in PM2.5 as a result of increased APU use. While idle reduction represents an important opportunity for fuel savings, any increase in this harmful pollutant is unacceptable, particularly given that appropriate PM control technology for APUs is already in the marketplace and currently required by CARB. EPA should adopt similar requirements to CARB's for PM control on APUs, and should do so concurrently with this proposed Phase 2 rulemaking. Similarly the agencies should ensure there is no backsliding on NOx emissions as a result of increased use of APUs.

The agencies should close the "Glider Kit" loophole.
We strongly support the proposed measure to ensure that glider kits are subject to the same applicable regulations as other new trucks. This common sense measure will prevent gaming and will avoid significant amounts of unnecessary emissions of GHGs, NOx, and PM2.5. The agencies request comment on the appropriate magnitude of the exemption. While we agree that some minimal exemption opportunity is probably appropriate in limited cases, we urge the agencies to set this number as low as is practical without impeding small businesses with legitimate claims.

EPA should address the potential for further NOx reductions at the earliest possible date.
Heavy-duty trucks represent the second largest source of NOx emissions in the NESCAUM region, and our states remain very concerned about the need to further control NOx emissions from this sector. We thank the agencies for acknowledging the challenge that states continue to face in this regard, and we urge EPA to begin a rulemaking without delay to ensure that the next generation of trucks is not only more fuel efficient but also much less of a contributor to states' air quality and public health problems.

The NESCAUM region, home to over 42 million people, is subject to episodes of poor air quality resulting from ground-level ozone and fine particle pollution. During severe events, the scale of the problem can extend beyond NESCAUM's borders and include over 200,000 square miles across the eastern United States. Local and regional sources as well as air pollution transported hundreds of miles from distant sources outside the region contribute to elevated ozone and fine particle concentrations in the region.

NOx emissions contribute to a number of adverse public health and environmental outcomes. NOx is the most important contributor to nitrogen dioxide and ground-level ozone pollution, and an important precursor to fine particulate matter formation. These pollutants are responsible for tens of thousands of premature deaths, hospital admissions, and lost work and school days in the U.S. annually. NOx is also a key factor in a number of environmental problems that affect the Northeast. Table 1 summarizes the major adverse impacts of NOx emissions in the NESCAUM region.

Table 1. Adverse Public Health and Environmental Impacts of NOx in the Northeast

Ozone and Fine Particulate Matter	Reduces lung function, aggravates asthma and other chronic lung diseases Can cause permanent lung damage from repeated exposures Contributes to premature death
Nitrogen Dioxide	Increases airway reactivity Worsens control of asthma Increases incidences of respiratory illnesses and symptoms
Acid Deposition	Damages forests Damages aquatic ecosystems, e.g., Adirondacks and Great Northern Woods Erodes manmade structures
Coastal Marine Eutrophication	Depletes oxygen in the water, which suffocates fish and other aquatic life in bays and estuaries, e.g., Chesapeake Bay and Long Island Sound
Visibility Impairment	Contributes to regional haze that mars vistas and views in urban and wilderness areas

Additional NOx reductions would benefit air quality and public health in the Northeast by: (1) lowering the "ozone reservoir" that forms in the eastern U.S., and (2) reducing the amount of low-level NOx emissions and pollutants derived from NOx that are transported into the Northeast/Mid-Atlantic region.

Ozone

Ozone remains a persistent pollution problem in parts of the NESCAUM region during warm weather months. The evolution of severe ozone episodes often begins with the passage of a large high pressure area from the Midwest to the middle or southern Atlantic states. Three primary

pollution transport pathways affect air quality in the region: long-range, mid-level, and near-surface. During severe ozone episodes associated with high-pressure systems, these pathways converge on the Mid-Atlantic area, where sea and bay breezes act as a barrier and funnel ozone and other air pollutants up the Northeast Corridor.

Collectively, NOx emissions and ambient ozone concentrations in the region have dropped significantly since 1997, along with the frequency and magnitude of exceedances of the health-based ozone national ambient air quality standard (NAAQS).[5] Despite this demonstrated progress, some of the most populous areas of the region continue to violate the 2008 0.075 ppm ozone NAAQS. Attaining the standard in these areas will require significant additional NOx reductions within the Northeast and in upwind areas. Looking toward the future, additional NOx reductions will be critical to ozone attainment in order to meet the recently revised 0.070 ppm ozone NAAQS, which EPA projects will continue to be exceeded in our region in 2025.

Particulate Matter

Scientific evidence has established a solid link between cardiac and respiratory health risks and transient exposure to ambient fine particle pollution that is capable of penetrating deep into the lungs.[6] Exceedances of the fine particle NAAQS can occur at any time of the year, with some of the highest levels often reached in the winter. There are important differences in the chemical species responsible for high fine particle levels during summer and winter in the Northeast. Regional fine particle formation in the eastern United States is primarily due to SO_2, but NOx is also important because of its influence on the chemical equilibrium between sulfate and nitrate particles during winter when nitrates can be a relatively greater contributor to urban PM2.5 levels.

Acid Deposition

Atmospheric sources of nitrogen are a primary contributor to acidification of forest soils and fresh water ecosystems in the Northeast. Nitrogen saturation results in a number of important changes in forest ecosystem functions, including: (1) increased acidification of soils and surface waters; (2) depletion of soil nutrients and the development of plant nutrient imbalances; and (3) forest decline and changes in species composition. More than 30 percent of the lakes in the Adirondacks and at least 10 percent of the lakes in New England are susceptible to the effects of acidic episodes that include long-term increases in mortality, emigration, and reproductive

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[5] NESCAUM. 2010. *The Nature of the Ozone Air Quality Problem in the Ozone Transport Region: A Conceptual Description*, prepared for the Ozone Transport Commission by NESCAUM, Boston, MA (August 2010). Available at: http://www.nescaum.org/documents/2010_o3_conceptual_model_final_revised_20100810.pdf.

[6] U.S. EPA. 2005. *Review of the National Ambient Air Quality Standards for Particulate Matter: Policy Assessment of Scientific and Technical Information*, USEPA OAQPS Staff Paper, EPA-452/R-05-005a (December 2005).

failure of fish, as well as short-term acute effects. Acidic episodes can occur at any time of the year but typically are most severe during spring snowmelt, when biological demand for nitrogen is low and saturated soils exhibit lower nitrogen retention.[7]

Marine Eutrophication

Airborne nitrogen is an important contributor to eutrophication, the process by which a body of water acquires a high concentration of nutrients that promote excessive growth of algae. As the algae die and decompose, high levels of organic matter and decomposing organisms deplete the water of available oxygen, causing the death of other organisms, such as fish. Atmospheric nitrogen is a major contributor to eutrophication of key coastal resources in the Northeast, including Barnegat Bay in New Jersey and Long Island Sound.[8] The Chesapeake Bay is the largest estuary in the U.S. and its watershed stretches across more than 64,000 square miles, encompassing parts of six states, including New York. Since the 1950s, the bay has experienced a decline in water quality due to over-enrichment of unwanted nutrients such as phosphorus and nitrogen. The major contributors to nutrient discharge in the bay are wastewater effluent, urban and agricultural runoff, and air deposition.[9]

Visibility Impairment

Regional haze is a form of air pollution that obscures the views of city skylines as well as "pristine" scenic vistas. It is caused by fine particle air pollution and can cover hundreds of square miles in the East. Natural visibility conditions in the East are estimated at 60 to 80 miles in most locations. Under current polluted conditions, average visibility ranges from 20 to 40 miles. On the worst days, regional haze can reduce visibility to just a few miles. Outdoor recreation is a multi-billion dollar industry in the U.S. and is of particular economic importance to communities near protected federal lands. Surveys indicate visitors have rated "clean, clear air" as among the most important features of national parks and have overwhelmingly ranked scenic views and clean air as "extremely" or "very" important. Studies have yielded estimates in the billions of dollars for the visibility benefits associated with substantial national pollution

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[7] Driscoll, C.T., G.B. Lawrence, A.J. Bulger, T.J. Butler, C.S. Cronan, C. Eagar, K.F. Lambert, G.E. Likens, J.L. Stoddard, and K.C. Weathers. 2001. *Acidic deposition in the northeastern United States: Sources and inputs, ecosystem effects, and management strategies*, BioScience 51, 180–198.

[8] Bricker, S.B., C.G. Clement, D.E. Pirhalla, S.P. Orlando, and D.R.G. Farrow. 1999. *National Estuarine Eutrophication Assessment: Effects of Nutrient Enrichment in the Nation's Estuaries*, NOAA, National Ocean Service, Special Projects Office and the National Centers for Coastal Ocean Science. Silver Spring, MD: 71 pp.

[9] Maryland Department of the Environment, *Chesapeake Bay Restoration*, http://www.mde.state.md.us/programs/Water/Pages/water/bayrestoration.aspx (accessed September 1, 2011).

reductions.[10] While sulfate, formed from SO_2 emissions, is currently the most important particle constituent of regional haze in the East, reductions in other local and distant pollutant emissions, including NOx, will be necessary to achieve the nation's long-term goal of restoring pristine visibility conditions year-round in national parks and wilderness areas.[11]

Conclusion

In conclusion, we thank and commend the agencies for a diligent and thorough analysis, and for proposing a rule that is appropriate in structure and scope. The agencies, however, should strengthen certain provisions to maximize the benefits from this important program. In addition, EPA should ensure that emissions of other pollutants do not increase as a result of the rule, and should commence rulemaking to reduce NOx from heavy-duty vehicles at the earliest possible date.

If you have any questions regarding the issues raised in these comments, please contact Matt Solomon at NESCAUM (ph: 617-259-2029).

Sincerely,

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Executive Director

[10] NESCAUM. 2001. *Regional Haze and Visibility in the Northeast and Mid-Atlantic States*, NESCAUM, Boston, MA (January 31, 2001). Available at: http://www.nescaum.org/documents/regional-haze-and-visibility-in-the-northeast-and-mid-atlantic-states/.

[11] In 1999, EPA promulgated the Regional Haze Rule in pursuit of the national visibility goal created by Congress in the Clean Air Act to ultimately restore natural visibility conditions in 156 national parks and wilderness areas across the country (called "Class I" areas).