August 25, 2020

**RE: Support for The Proposed Heavy-duty Engine and Vehicle Omnibus Regulation and Associated Amendments (a.k.a. Low-NOx Rule**)

The American Council for an Energy Efficient Economy (ACEEE) welcomes the opportunity to comment on the California Air Resource Board’s (CARB) Proposed Heavy-duty Engine and Vehicle Omnibus Regulation and Associated Amendments. ACEEE is an independent non-profit organization dedicated to advancing energy efficiency policies, programs, technologies, investments, and behaviors. ACEEE aims to build a vibrant and equitable economy, one that uses energy more productively, reduces costs, protects the environment, and promotes public health and safety. The proposed Omnibus regulation pushes forward strong NOx and PM standards for Heavy Duty Vehicle and Engines starting in Model Year (MY) 2024 as well as provides much needed clarifications and updates to the Phase 2 Heavy Duty Vehicle and Engine GHG standards.

The proposed Omnibus regulation would provide a significant and clear benefit to the public’s health. It is expected to prevent 3,900 premature deaths, over 1,300 hospitalizations and 1,800 ER visits, by reducing NOx emissions by 353,000 tons statewide for 2022-2050. This would lead to $36.8 billion in monetized expected benefits, through 2050, with under $5 billion in nominal expected costs. The benefits clearly outweigh the costs, by any measure.

ACEEE strongly supports CARB in their intention to NOx and prevent increases in PM emissions for heavy duty vehicles, without decreasing the achievability of GHG emission reduction targets. ACEEE notes that CARB has found that these proposed measures will not impact GHG emissions or the achievability of GHG regulations and targets. ACEEE supports CARB in these conclusions. ACEEE finds many of the proposed provisions to be both advisable and necessary measures to protect the public health. ACEEE does, however, believe that CARB should consider evaluating more stringent PM emissions limits, as manufactures have already proven themselves able to meet higher standards, by certifying and releasing products that meet emissions levels below the proposed standards. ACEEE supports CARB in their revision of Phase 2 GHG standards, to make it clear that many sections apply to trailers as well as trucks and CARBs proposal to limit the life-time of NOx credits. ACEEE also supports CARB in their proposal to grant ZEV emission credits through MY 2030. ACEEE, however, also recommends that CARB not extend these credits beyond that date.

Our detailed comments are attached below. If CARB has any questions please do not hesitate to contact ACEEE’s Dr. Avi Mersky, at [amersky@aceee.org](mailto:amersky@aceee.org).

Thank You,

Avi Chaim Mersky



ACEEE welcomes the opportunity to provide detailed comments on CARB’s Proposed Heavy-duty Engine and Vehicle Omnibus Regulation and Associated Amendments. ACEEE’s comments specifically cover 6 issues raised in the proposed regulations and amendments.

# Impacts to GHG Emissions and Phase 2 GHG Regulations

ACEEE notes that CARB has found that these proposed measures will not impact GHG emissions or the achievability of GHG regulations and targets. ACEEE supports CARB in the crucial conclusion that this proposed rule will not impact the achievability of the Phase 2 HD GHG rules.

# PM Emission Limits

CARB is proposing an increase in the stringency of PM emission standards from 0.01 g-PM/bhp-hr to 0.005 g-PM/bhp-hr. This is justified as many manufacturers have been certifying their engines to close to 0.001 g-PM/bhp-hr for multiple model years, only to recently start backsliding toward the current 0.01 g-PM standard by using less efficient Diesel Particulate Filters (DFP). ACEEE supports CARB in this proposal to increase the stringency of PM emission standards and prevent backsliding. However, given that manufacturers have already shown their ability to achieve emissions levels below the proposed standard, ACEEE suggests that CARB also study the advisability of a more stringent PM standard. This would help to ensure that the regulation does not merely mandate what is currently feasible but also will drive innovation and further reduce emissions.

# Trailers

CARB has proposed clarifying the language in the CARB Phase 2 Heavy Duty Vehicle and Engine regulations to make it clear that the rules on emissions warranties, recalls and, repairs apply to trailers and not only Heavy Duty Vehicles and Engines, starting in MY 2020. Trailers are a vital component to tractor-trailer HD vehicles and are a significant determinant of tractor-trailer fuel economy and emissions. ACEEE therefore fully supports CARB’s decision to extend these warrantee regulations to trailers, thereby helping to ensure trailer GHG reduction improvements last through the life of the trailer.

# NOx Emission Limits and 50 State Optional Certification

CARB proposes to reduce allowed NOx emissions from heavy duty and Otto cycle engines to 0.05 g/bhp-hr for the FTP and RMC cycles, starting with MY 2024. This is an admirable 75% reduction in emissions from the current limit. CARB also proposes an idling limit of 10 g/hr of NOx, down from 30 g/hr, a 2/3 reduction. Furthermore, CARB proposes the addition of a new low load cycle, or LLC, with a limit of 0.2 g-NOx/bhp-hr. These reductions in emissions represent significant gains in human and environmental health impacts from heavy duty vehicles. ACEEE fully supports CARB in setting these standards.

CARB also proposes that manufacturers be given the option of following a separate, less stringent, standard, if they agree to follow that standard for all vehicle sales in the US, rather than just California. CARB justifies this proposal because vehicles bought outside of CA often travel on CA roads and reductions in such vehicles’ emissions would reduce local emissions in CA. CARB proposes that the optional 50 state standard be 0.1 g-NOx/bhp-hr for the FTP and RMC cycles, 0.3 g-NOx/bhp-hr for the new LLC, and 10 g-NOx/hr for idling. ACEEE supports CARB’s position that this optional standard is justified and would reduce emissions in California. ACEEE also observes that this proposed standard would have secondary effects in reducing emissions outside of CA, providing a greater, nationwide, benefit. For these reasons ACEEE supports CARB’s proposed 50 state NOx engine standards.

# Emissions Averaging Banking and Trading

CARB proposes to establish a separate California-only averaging, banking, and trading (CA-ABT) program, starting in MY 2022 engines. CARB is additionally proposing a 5-year expiration date on NOx credits. CARB justifies this 5-year expiration date, noting that prior to MY 2004 the US EPA subjected federal-ABT credits to a 3-year lifetime but subsequently removed this limit with the assumption that the credits would all be used within 6 years, even without a mandated credit expiration date. CARB has previously noted that many of these credits have been banked for over a decade[[1]](#endnote-1). CARB therefore justifies this proposal by pointing out that the initial decision to remove credit lifetimes was based on an incorrect assumption. ACEEE supports CARB’s proposed remedy of adding a 5-year NOx credit lifetime.

# Zero Emission Vehicle Credits

CARB proposes that “Class 4-8 ZEV families certified under 17 CCR 95663 would be eligible to generate NOx credits in the CA-ABT program, starting with the 2022 MY”. Each ZEV would generate credits equal to the MY’s NOx standard. Certified ZEVs would stop being eligible for credits in MY 2031. CARB justifies this proposal as helping to encourage ZEV adoption, and reduced GHG and criteria air pollution, in advance of the requirements of the ACT program. ACEEE recognizes the value in encouraging the early adoption of ZEV vehicles and supports CARB in their proposal to grant ZEV emission credits through MY 2030. ACEEE, however, also recommends that these credits must not be extended past the proposed 2031 MY, as by that point in time the ACT rule already mandates a robust Heavy Duty ZEV market, and any emission credits could serve to reduce the stringency of the NO­x rule, with limited additional ZEV adoption benefits.

1. https://ww2.arb.ca.gov/sites/default/files/classic//msprog/hdlownox/files/workgroup\_20190123/06b-credit%20provsions\_ws01232019-1.pdf [↑](#endnote-ref-1)