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To:
Clerk of the Board
California Air Resources Board
1001 I Street, Sacramento, California 95814

From:
Dr. Siddiq Khan, American Council for an Energy-Efficient Economy (ACEEE), Washington DC

Re: **Comments of American Council for an Energy-Efficient Economy on the California Air Resources Board's Proposed Greenhouse Gas Emissions Standards for Medium- and Heavy-Duty Engines and Vehicles and Proposed Amendments to the Tractor-Trailer GHG Regulation**

Date: February 8, 2018

Attached please find the comments of the American Council for an Energy-Efficient Economy (ACEEE) on ARB's Proposed Greenhouse Gas Emissions Standards for Medium- and Heavy-Duty Engines and Vehicles and Proposed Amendments to the Tractor-Trailer GHG Regulation.

ACEEE, a nonprofit, 501(c)(3) organization, acts as a catalyst to advance energy efficiency policies, programs, technologies, investments, and behaviors. We at ACEEE believe that the United States can harness the full potential of energy efficiency to achieve greater economic prosperity, energy security, and environmental protection for all its people. ACEEE carries out its mission by:

- Conducting in-depth technical and policy analyses
- Advising policymakers and program managers
- Working collaboratively with businesses, government officials, public interest groups, and other organizations
- Convening conferences and workshops, primarily for energy efficiency professionals
- Assisting and encouraging traditional and new media to cover energy efficiency policy and technology issues
- Educating consumers and businesses through our reports, books, conference proceedings, press activities, and websites

We appreciate this opportunity to provide comments on the agencies' proposal. Unless otherwise indicated, page references in the comments that follow refer to the Staff Report: Initial Statement of Reasons for Proposed Rulemaking, posted at https://www.arb.ca.gov/regact/2018/phase2/isor.pdf.

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Introduction

We strongly support California's adoption of the Federal Phase 2 heavy-duty greenhouse gas (GHG) emissions and fuel efficiency standards for heavy-duty vehicles and engines and proposed amendments to the tractor-trailer regulation. The Federal Phase 2 standards were developed in collaboration with industry, California Air Resources Board (ARB), environmental groups, trade association, and other stakeholders. The Phase 2 standards would provide substantial gains in fuel efficiency for heavy-duty vehicles by 2027, deliver savings at the pump to truck owners and operators, and reduce freight costs to consumers, and therefore we welcome California's alignment with the Phase 2 standards. The federal Phase 2 GHG program will provide substantial fuel efficiency improvement and GHG reductions which will help California achieve the state's GHG reduction goals. "Adoption of the California Phase 2 regulation will give California the ability to certify and enforce the federal Phase 2 standards in California, and with proposed minor distinctions, help preserve the air quality benefits of California's incentive and regulatory programs" (p. II-1). By adopting California standards, nearly identical to the federal standards, California would gain the ability to certify engines and vehicles to the new Phase 2 standards and enforce them as well (p. I-1). California's adoption of the Phase 2 standards and tractor-trailer amendments would strengthen California's leadership in reducing greenhouse gas (GHG) emissions and improving truck fuel efficiency.

ACEEE applauds the ARB's excellent work in developing the California Phase 2 standards. The proposed California Phase 2 standards improve upon the Federal Phase 2 program in several ways as explained below.

We support ARB's proposed adoption of the federal emission requirements for glider vehicles, glider engines, and glider kits.

ARB proposes to align with the final federal Phase 2 regulations adopted by U.S. EPA on October 25, 2016, including emission standards and other requirements for heavy-duty glider vehicles, glider engines, and glider kits (p. II-4). We support ARB's proposal to adopt the federal emission requirements for glider vehicles and glider kits. Most gliders use pre-2002 model year engines, in some cases remanufactured, which were built before the commercialization of exhaust gas recirculation (EGR).[1] Glider engines will greatly increase NOx and PM emissions. Glider engines emit higher NOx, PM, CO, and HC emissions since most of them are not equipped with EGR and SCR, two important after-treatment technologies that were commercialized in 2002 and 2010, respectively to reduce NOx and other emissions. In recent testing, EPA found two 2016 and 2017 model year glider trucks emitting as high as 43 times the NOx and 450 times the PM emissions than the conventionally manufactured 2014 and 2015 model year trucks.[2] Glider engines are also less fuel efficient than present engines. Pre-2002 engines in our assessment would be more than 10% less efficient than Phase 2 compliant engines.[3]

ARB also proposes that if the U.S. EPA should prevail in its efforts to repeal the glider requirements, ARB would reevaluate the associated emissions increases to determine the best course of action

[1] Phase 2 rule (FR Vol. 81, No. 206, October 25, 2016), p. 73943

[2] EPA. Chassis Dynamometer Testing of Two Recent Model Year Heavy-Duty On-Highway Diesel Glider Vehicles. Ann Arbor. November 20, 2017

[3] ACEEE comments to docket ID EPA-HQ-OAR-2014-0827, dated January 5, 2018

necessary to attain California's air quality commitments and to protect the health of its residents (p. II-4). We support this approach.

We support ARB's proposed adoption of the federal trailer standards and amendments to the California Tractor-Trailer GHG regulation.
ARB proposes to align California's Phase 2 GHG standards for tractors above 26,000 pounds GVWR (class 7 and class 8 tractors) with the federal Phase 2 program (p. III-4) and we strongly support that.

We also support ARB's proposal to align California's Phase 2 GHG standards for trailers with the federal Phase 2 trailer standards (p. III-9). The addition of trailers to the tractor truck GHG program is crucial, because known, affordable trailer aerodynamic and tire technologies would deliver almost 10% fuel savings for tractor-trailers. ARB acknowledges a Truck Trailer Manufacturers Association (TTMA) petition to the U.S. Court of Appeals requesting the rescission of the trailer standards, which has successfully garnered a stay of the Phase 2 trailer requirements by the U.S. Court of Appeals and reconsideration of the trailer provisions by U.S. EPA and NHTSA. However, ARB stresses that these actions do not affect California's authority to establish standards for trailers and proposes to adopt the Phase 2 trailer standards as they existed in October 2016 when they were originally published in the federal register (p. ES-3). We support ARB's position on this.

Moreover, further improvements to trailers and their integration with tractors will remain a major source of additional emissions reductions beyond the Phase 2 standards. For example, DOE-funded research shows that tractor-trailer integration can radically reduce aerodynamic drag, delivering reductions in these vehicles' fuel consumption of up to 40%.[4] Hence trailers' inclusion in the program will be essential to full realization of the emissions reduction potential of heavy-duty vehicle standards in the future.

We support ARB's proposed adoption of labeling requirements for vocational vehicles, tractors, and Class 2b and 3 pick-ups and vans (PUVs).
ARB proposes to require tractors and vocational vehicles to include emission control identifiers on their labels to facilitate visual inspection (p. III-27). This will help to ensure achievement of the emissions reductions anticipated under the rule, and we support this requirement.

We also strongly support ARB's proposal to require Class 2b and 3 pickups and vans (PUV) to display an Environmental Performance label showing how the vehicle compares to other PUVs in terms of GHG emissions and emissions of smog precursors. Under the proposed California Phase 2 program, these labels would have to be displayed on any new medium-duty vehicle offered for sale in California beginning with the 2021 MY (P. III-27). This allows buyers to include environmental performance as a consideration in choosing among PUVs. ARB also proposes to reference online material that would help the consumer to compare PUV ratings with information on the federal light-duty fuel economy label. We support this element of the label, given that consumers may be choosing among vehicles on either side of the 8,500-lb. GVW threshold dividing light- and heavy-duty pickups and vans.

[4] "DOE's Effort to Improve Heavy Vehicle Fuel Efficiency through Improved Aerodynamics," K. Salari. Presentation at 2017 DOE Annual Merit Review, Project ID #ACS113. June 2016.

We Support ARB's proposed special provisions for California-certified transit buses

We support ARB's proposal to require that manufacturers certifying transit buses to the "custom chassis" standards retire any credits gained over and above what would have been gained if the transit buses were certified to the more stringent primary vocational vehicle standard (p. ES-9). The custom chassis provision in Federal Phase 2 standards allowed manufacturers of motor homes, coach buses, transit buses, school buses, refuse trucks, cement mixers, and emergency vehicles the option to certify those vehicles with a less stringent process. The standards for these custom chassis vehicles were 5 to 7% weaker than the standards for every other class of vocational vehicle.[5] We believe the custom chassis was inappropriate and unnecessary for certain classes of vehicles, including transit, intercity buses, and refuse vehicles, which have ample technologies, including drive train electrification, to meet the primary vocational standard. The custom chassis compliance pathway for these vehicles reduces the incentive to adopt advanced technologies including electrification and hybridization, which are ideally suited to buses and refuse trucks. ARB's provision will discourage transit bus manufacturers from certifying their vehicles to the less stringent custom chassis standards and would incentivize advanced technologies including electrification in the transit bus sector.

Conclusions

ACEEE applauds ARB's proposed Phase 2 Greenhouse Gas Emissions Standards for Medium- and Heavy-Duty Engines and Vehicles and Proposed Amendments to the Tractor-Trailer GHG Regulation. The proposed rule, aligned with the Federal Phase 2 program, would provide major reductions in fuel consumption and greenhouse gas emissions of the heavy-duty sector in California.

[5] Comments by ACEEE, EDF, NRDC, Sierra Club, and UCS to docket EPA-HQ-OAR-2014-0827 and NHTSA-2014-0132, dated April 1, 2016.