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Phase 2 Greenhouse Gas Emissions and Fuel Efficiency Standards for Heavy-Duty Vehicles

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Related Author

- Richard K. Lattanzio

Richard K. Lattanzio, Specialist in Environmental Policy (rlattanzio@crs.loc.gov, 7-1754)

On July 13, 2015, the Environmental Protection Agency (EPA) and the National Highway Traffic Safety Administration (NHTSA) jointly proposed the second phase of greenhouse gas (GHG) emissions and fuel efficiency standards for medium- and heavy-duty vehicles. The Administration introduced the proposal in the President's 2013 Climate Action Plan and expects to finalize the standards in August 2016.

Fuel efficiency standards for the nation's heavy-duty trucking fleets stem from provisions in the Energy Independence and Security Act of 2007 (EISA, P.L. 110-140). EISA required NHTSA to study the potential for fuel efficiency gains and, if feasible, implement standards for medium- and heavy-duty vehicles and engines. These classes of vehicles include combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles such as buses, ambulances, and utility trucks. In 2011, after the completion of several studies, NHTSA and EPA (through its authority under the Clean Air Act [CAA]) jointly promulgated Phase 1 standards for model years (MY) 2014 through 2018. The rulemakings were similar in format to the Administration's GHG and fuel economy standards for passenger cars and light trucks promulgated the previous year.

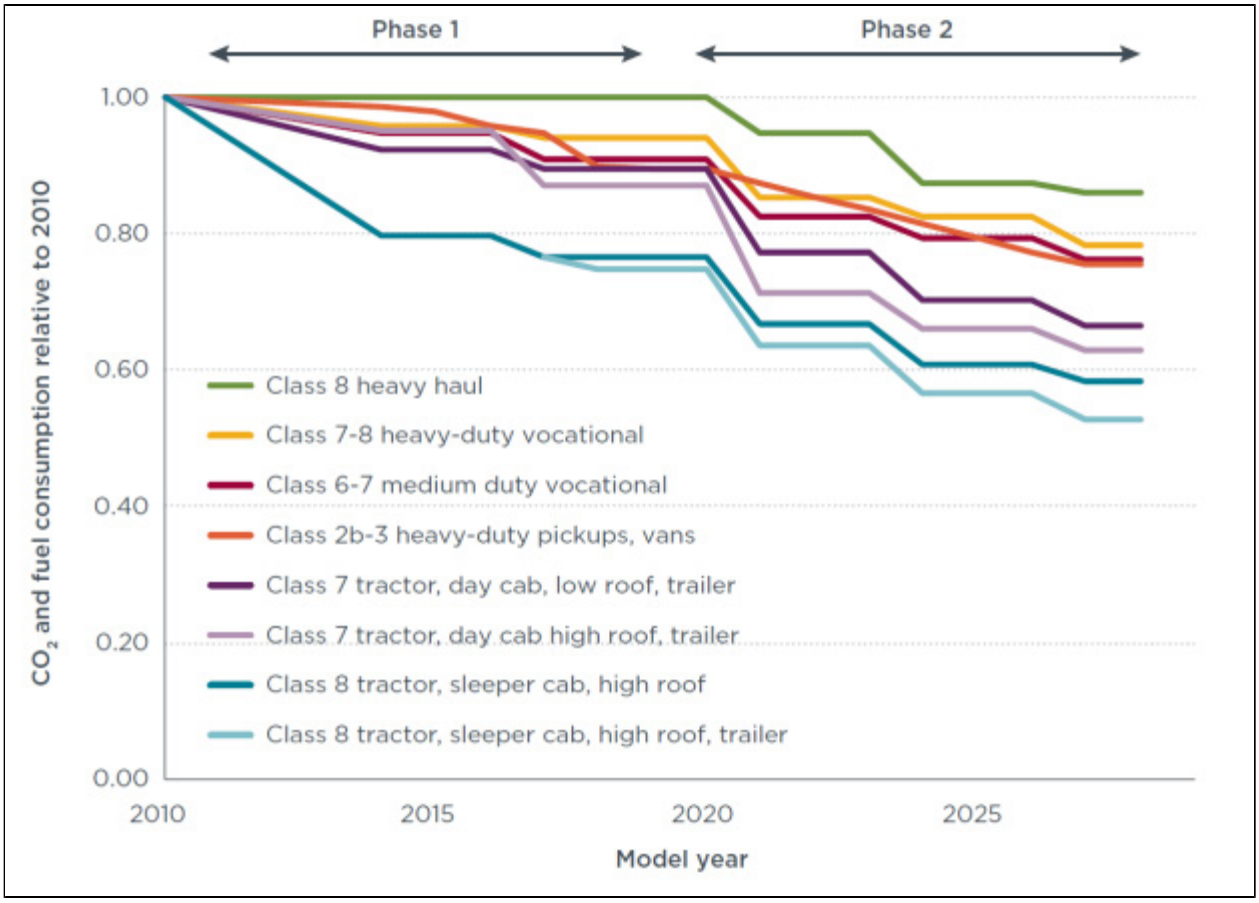
The Phase 2 proposal would expand the stringency of the Phase 1 standards and introduce first-ever controls on trailers (i.e., the part of the vehicle pulled by the tractor). The agencies state that the proposal has several goals, including (1) reducing carbon dioxide (CO_2) emissions and fuel consumption from new on-road vehicles, (2) benefiting consumers and businesses by reducing the costs for transporting goods, and (3) spurring innovation in the clean energy technology sector. The standards would phase in between MY2021 and MY2027 for vehicles and engines and between MY2018 and MY2027 for trailers.

"Heavy-duty trucks account for just 4% of all the vehicles on the highway.... But they're responsible for about 20% of carbon pollution in the transportation sector.... And because they haul about 70% of all domestic freight—70% of the stuff we use, everything from flat-screen TVs to diapers to produce to you name it—every mile that we gain in fuel efficiency is worth thousands of dollars of savings every year." Remarks by President Obama, February 18, 2014.

The Phase 2 proposal maintains the underlying regulatory structure developed in Phase 1, such as the general categorization of medium- and heavy-duty vehicles and the separate standards for vehicles and engines. It also retains the Phase 1 averaging, banking, and trading compliance provisions and its flexibilities for small businesses. However, unlike Phase 1, the proposal puts forth "technology advancing" standards (i.e., standards based "not only on currently available technologies but also on utilization of technologies now under development or not yet widely deployed"). These may include advancements in the engine, transmission, driveline, aerodynamic design, lower rolling resistance tires, extended idle reduction technologies, and other accessories.

The agencies estimate the Phase 2 proposal would achieve vehicle fuel savings of up to 8% and 24% beyond the Phase 1 standards depending on the vehicle category (see **Figure 1**). Overall, the agencies estimate it could cut GHG emissions by approximately 1 billion metric tons of CO_2 equivalent and conserve approximately 1.8 billion barrels of oil.

Figure 1. CO_2 and Fuel Efficiency Reduction from the Heavy-Duty National Program



Source: International Council on Clean Transportation.

Notes: Classifications defined at 49 CFR 523.2 and 49 CFR 565.15.

Under the agencies' cost modeling, the standards would result in approximately $230 billion in net benefits over the lifetime of the vehicles sold in the regulatory time frame while costing the affected industry about $25 billion. Payback periods for truck owners were determined to be favorable—with the buyer of a new long-haul truck in 2027 recouping the extra cost of the technology through fuel savings in less than two years. Overall, vehicle owners could save an estimated $170 billion in fuel costs over the lifetime of the vehicles sold in the regulatory time frame.

Selected Issues

Reaction to the proposal has been generally favorable. Many truck and engine manufacturers, drivers, fuel groups, and environmental organizations provided comments in support of the proposal upon its release. Nevertheless, several issues remain under debate:

- **Regulatory costs and deadlines:** The rule proposes a final deadline in MY2027, an effort intended to satisfy truck and engine manufacturers who are seeking greater production certainty. However, because the standards are technology advancing, some stakeholders argue that compliance costs and timetables may be higher and longer than the agencies estimated.
- **Emissions reductions:** Some stakeholders, including California and some health and environmental organizations, say that the plan is not aggressive enough in emissions reductions.
- **Vehicle versus engine standards:** The proposal includes standards for both engine emissions and the vehicle as a whole. Some stakeholders contend that the agencies lack statutory authority under the CAA to regulate the non-engine parts of vehicles. Others argue for discontinuing engine standards in favor of an approach that promotes "full-vehicle optimization." They claim that "a total systems perspective ... provides a broader landscape to advance the optimization of fuel efficiency, productivity and cost."
- **Racecar provisions:** The proposal includes language that was reportedly intended to clarify EPA's tampering provisions with respect to nonroad vehicles but that industry groups claim would prevent owners from modifying motor vehicles used exclusively for racing. EPA has stated it would remove the provision in the final rule. H.R. 4715/S. 2659 would amend the CAA to exclude these vehicles from emissions regulations.
- **Vocational vehicle provisions:** EPA suggested in a memorandum added to the regulation docket that the final rule may ease the proposed compliance pathways for seven types of "custom chassis" vocational vehicles: coach/intercity buses, motor homes, school buses, transit buses, refuse trucks, cement mixers, and emergency vehicles. Some stakeholders have expressed concern that compliance will be eased.
- **Nitrogen oxide (NO_x) standards:** Controls for NO_x emissions (a precursor to ground-level ozone) generally compete against fuel efficiency efforts. Air quality regulators from Southern California and 10 other local and state agencies across the nation have filed a petition to EPA to promulgate more stringent NO_x standards in conjunction with the Phase 2 proposal.