

## **Comments on EPA's and NHTSA's Proposed Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium and Heavy-Duty Engines and Vehicles**

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The adoption of fuel efficiency and greenhouse gas standards for medium- and heavy-duty vehicles is a major step toward managing the nation's oil consumption, emissions, and fuel expenditures, and by extension the cost of consumer goods. It also offers the potential of new jobs in the design and production of new vehicle technologies. Domestic manufacturers and suppliers are leaders in certain advanced truck technologies, and this program has the potential to help them consolidate their leadership and thrive in a global market. At the same time, those interested in truck fuel efficiency across the world are watching this rulemaking as other governments develop their own programs to improve truck efficiency and cut GHG emissions. The final rule can set the stage globally in this regard.

There is no question that truck users are sensitive to fuel prices. Nonetheless there are currently big obstacles to bringing efficiency technologies into the market: there is no standardized way of documenting the benefits of these technologies; volatile fuel prices undermine the confidence of manufacturers and buyers to invest in them; and trucks are often sold after just a few years on the road. Given this situation, a fuel efficiency standard is an important tool for promoting the development of new technologies and ensuring their rapid deployment.

The agencies have done a great deal of excellent work in exploring how standards for medium- and heavy-duty vehicles could operate, and in preparing this program for public review. We believe that the program should be put in place as soon as possible. We also believe however that the proposal can and should be strengthened to capture more of the available fuel savings, to ensure support for the program among regulated entities and the public, and to establish precedents that will facilitate future improvements in the program.

These comments highlight a few areas we think are particularly important to address in the final rule:

- Stringency of the standards
- Ability of the standards to promote advanced technology
- Flexibilities in the rule
- Test vs. real-world performance

### *Stringency of the standards*

In all three truck categories and for engines as well, the proposal could be strengthened in ways that would increase the economic benefits of the rule while reducing emissions and oil consumption. High priority issues in each category include:

- Engines – The standards for engines should be strengthened. The proposal calls for 6 percent efficiency gains for tractor-trailer engines, for example, where the recent National Academy of Sciences study concluded that 8.5-13% improvement would be possible by 2017. The agencies should also send a clear signal that substantial additional improvements will be required for 2020 to maximize lead time for manufacturers and ensure their continued investment in engine technologies.
- Tractor-trailers – Addition of trailer standards could reduce fuel use by 10 percent and allow truck manufacturers to optimize aerodynamic features. Trailers stay on the road for a long time, so delay in regulating them will mean lost savings for many years to come. Even if trailers are not included in this rulemaking, standards for trailers can and should be adopted in time to ensure their implementation with the first tractor standards in 2014.
- Vocational trucks – The rule should capture the benefits of technologies beyond engine and tire improvements, especially advanced transmissions and hybridization. We comment further on this category below.
- Work trucks – The proposed standards for 2018 have a similar technology basis to the modest improvements required for light-duty pickups by 2016, yet they take longer and accomplish less. The proposed level of standards for 2018 almost matches the fuel efficiency levels projected by the Energy Information Administration in a business-as-usual case (11 percent reduction from 2010 levels). Gasoline direct injection, hydraulic hybrids, and engine downsizing all appear to be undervalued in the proposal. At a minimum, the work truck standards proposed for 2018 should instead be fully phased in by 2016 to allow for further increases in the years following.

In addition to tightening up some of the requirements in this first phase of the program, the agencies should start work as soon as possible on a second phase to commence in 2018, in order to ensure steady, rapid progress toward the much higher levels of efficiency shown to be achievable in the National Academy of Sciences report and elsewhere.

#### *Ability of the standards to promote advanced technology*

A crucial measure of this program will be how well it does in drawing advanced efficiency technologies into the market. In addition to the engine improvements mentioned previously, this applies to advanced transmissions, hybrid drive trains and other technologies especially important to the refuse trucks, delivery vans, utility trucks, and school buses in the “vocational” category. Companies investing in these technologies should be given a well-defined, straightforward way of claiming credit for doing so. Moreover, standards for vehicles that can take advantage of these technologies need to be set high enough that companies will have a strong incentive to acquire them as soon as their value has been demonstrated.

#### *Flexibilities in the rule*

The function of flexibility mechanisms is to allow maximum savings at reduced cost. The proposal sets out stringency requirements that in most cases do not challenge the industry to improve technology but only to adopt technologies that are readily available. In these circumstances, flexibility mechanisms will simply allow some vehicles that could easily be upgraded to remain inefficient and promote the use of advanced technologies to offset the high

fuel consumption of these lagging vehicles rather than to achieve additional fuel savings. The proposed flexibilities would be better justified if the stringency of the standards were increased, as discussed previously.

### *Test vs. real-world performance*

In the proposed program, test fuel efficiency will not relate closely to real-world fuel efficiency, because the truck as tested will not be the same as the truck as sold. Possible negative consequences of this situation include 1) that truck buyers will not realize the fuel savings implied by the levels at which the trucks are certified and the overall emissions reduction promised for the program will not be achieved, and 2) that manufacturers will tailor vehicles and equipment to do well as tested, not as sold or driven.

The proposal recognizes that complete vehicle testing and/or simulation to “more completely capture the complex interactions of the total vehicle” may be called for and states that this option will be explored for the next phase of the program (p.43). The agencies should instead commit to making such a transition in the next phase of the rule, and should begin as soon as possible to collect the data that will facilitate that transition. In particular, fuel efficiency and CO<sub>2</sub> emissions of all actual vehicle configurations sold should be reported as part of the certification process. While there may be obstacles to setting standards for the myriad vehicle configurations sold, projecting these vehicles’ performance through simulation would not be overly burdensome and would contribute enormously to the next phase of the program. Likewise, data collected through in-use testing should be used to help develop a program of complete vehicle testing and to improve the simulation model. Both simulation results and in-use testing data should be made available to the public.

The proposal includes labeling requirements that will have very limited utility to truck buyers. In the case of vocational trucks and tractor-trailers, the label will list the truck features that allowed it to be certified at certain levels for compliance purposes but apparently will not allow a buyer to draw any conclusions about what fuel efficiency he or she might expect to achieve. A label is needed to address one of the main barriers that efficiency faces in the heavy truck market, namely the lack of standardized fuel efficiency information. Buyers need to be able to compare trucks and to judge likely performance on their own duty-cycles. While duty-cycles famously are as varied as the truckers that drive them, certain key parameters analogous to the city and highway fuel economy figures for light-duty vehicles could go a long way toward providing that information to buyers in a fashion that is consistent across manufacturers, technologies, and model years.

In conclusion, ACEEE strongly supports EPA and NHTSA’s development and adoption of greenhouse gas and fuel efficiency standards for all medium- and heavy-duty vehicles starting in model year 2014. We recommend that the agencies strengthen the proposed rule in several areas to ensure that the program achieves maximum economic and environmental benefits and sets a strong precedent for future phases of the program.