

**Remarks Prepared for  
Ronald Medford, Deputy Administrator  
National Highway Traffic Safety Administration  
Heavy Duty GHG Emissions and Fuel Efficiency in  
Canada Conference  
Hotel Fort Gerry  
Winnipeg, Manitoba, Canada  
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**Good morning and thank you for inviting me to speak today. I want to extend my special thanks to the UMTI (University of Manitoba Transport Institute) for organizing this important conference.**

**This meeting comes at the ideal time to celebrate our shared vision of the future and our agenda for change. The U.S.-Canadian alliance on GHG emissions is an**

**historic leap forward in realizing the first-ever North American harmonization of fuel efficiency and greenhouse gas requirements for heavy duty vehicles.**

**I want to express my gratitude to all of my colleagues in both the industry and the Canadian government for affirming a shared set of standards for the United States and Canada. This coordinated initiative will enable manufacturers on both sides of the border to produce a fleet of heavy duty vehicles that meets a universal set of greenhouse gas requirements.**

**The well-established environmental impact of greenhouse gas emissions from transportation is a serious, shared concern for both Canada and the United States. Our joint action to reduce emissions from heavy vehicles will result in significant GHG reductions and a more-competitive, modernized fleet.**

**Momentum is a wonderful thing, and I am excited about where our collaboration will lead us. The program balances simplicity and flexibility to coordinate with manufacturers and reduce emissions and fuel consumption for an incredibly diverse segment of vehicles. Over time, we will lower oil imports and reduce CO2 emissions, and reduce operating costs for thousands of Canadian and U.S. businesses. The Obama Administration has fought hard over the past several years to address all of these concerns, and we're grateful that our Canadian colleagues have agreed to join us in that fight.**

**Speaking of momentum, it's remarkable how far we've come in terms of GHG regulation under President Obama's leadership. While NHTSA, as you know, has been regulating fuel economy for light-duty vehicles**

**since the 1970s, there were many years of stagnation on our part, for a number of reasons. Our Congress gave us some additional tools in our regulatory toolbox through passage of the Energy Independence and Security Act of 2007, which also gave us authority, for the first time, to develop fuel efficiency standards for heavy-duty vehicles, but it wasn't until President Obama requested the agency to take a fresh look at the light-duty standards for 2012-2015 that we really took off.**

**Working with our partners at the U.S. Environmental Protection Agency, on an incredibly fast track after three decades without significantly raising fuel-efficiency requirements, NHTSA and the Environmental Protection Agency developed the first-ever national program that harmonized fuel economy and greenhouse gas standards for light-duty vehicles for**

**model years 2012 through 2016. We published those standards on May 7, 2010. Under those standards, we estimate that passenger cars and light trucks would be required, on average, to increase from 27.6 miles per gallon in 2011 to 34.1 miles per gallon in 2016.**

**Right after we issued those light-duty fuel economy standards for model years 2012-2016, we got a new assignment from President Obama. On May 21, the President requested that NHTSA and EPA begin work on a joint rulemaking under the Clean Air Act and the Energy Independence and Security Act to establish fuel efficiency and greenhouse gas emissions standards for commercial medium- and heavy-duty vehicles beginning with model year 2014.**

**The President directed the agencies to take into account the market structure of the trucking industry and the**

**unique demands of heavy-duty vehicle applications, and also to consider findings and recommendations regarding this issue from the National Academy of Sciences. And finally, the President directed the agencies to ensure that they sought input from all stakeholders, while recognizing the continued leadership role of California and other States.**

**When we got the direction from the President and sat down with our EPA partners to start figuring this out, we realized the enormity of this undertaking. EPA, as you know, has been regulating air pollutant emissions from heavy-duty vehicles and engines under the Clean Air Act for several decades now, and has a strong relationship with the industry and other interest groups.**

**As I mentioned earlier, NHTSA first gained the authority to develop a heavy-duty vehicle fuel efficiency improvement program in 2007. Up until then, the agency's experience with fuel efficiency was all in the light-duty vehicle context, and our experience with heavy-duty vehicles was all in the safety context. Congress had directed us to fund a study by the National Academy of Sciences to explore how a fuel efficiency improvement program for heavy-duty vehicles might be constructed, which we did, and which we considered carefully.**

**Fortunately, our collaboration with EPA was assisted in the heavy-duty context by the broad authority that Congress gave NHTSA for regulating heavy-duty fuel efficiency, which is much closer to EPA's broad authority under the Clean Air Act than NHTSA's light-duty authority is. That broad authority enabled both**

**NHTSA and EPA to craft a program for regulating fuel efficiency and greenhouse gas emissions for heavy-duty vehicles and engines that represents a strong first step and provides ample flexibilities for industry while still ensuring real improvements.**

**So we've created a single coordinated national program in the U.S. that helps manufacturers produce a single fleet of vehicles to meet related federal and state requirements. The program design balances simplicity and flexibilities to reduce fuel consumption and greenhouse gas emissions from an incredibly diverse segment of vehicles. We look at this first set of standards as a kind of glide path, given that these are the first-ever of these kinds of regulations for this segment of the industry, and we look forward to working with our industry partners on future phases.**

**Of course, while we tried to make it as simple and straight-forward as possible, we can't deny that the heavy-duty program is significantly more complex than the light-duty fuel economy program. This was probably inevitable, given that the heavy-duty truck sector is so incredibly diverse, and serves such a wide range of functions. We addressed some of this diversity in vehicle form and function by setting separate standards for truck and engine performance for most segments of vehicles, with new metrics (gallons or grams per ton-mile) to account for the work that trucks perform hauling freight.**

**We also tried to build in some lead-time, since, again, this is the first time that many of these entities have been regulated for fuel efficiency and greenhouse gas emissions. The program begins with model year 2014, which at the time we issued the standards was only 18**

**months away for many products. Typically EPA's heavy-duty rules have given 4 or more years of lead-time, and NHTSA actually is required by statute to provide 4 years of lead-time for new standards. As a result, NHTSA's program doesn't become mandatory until 2016, although we allow voluntary alignment with EPA for 2014 and 2015. This lets manufacturers start earning credits early, if they can, which should give them flexibility in meeting the later, more stringent standards.**

**Thus, again, the standards begin with model year 2014, and increase in stringency through 2018. If we don't do another round of rulemaking to set additional standards for later model years, the 2018 standards continue at the same level into the future.**

**When we thought about how to divide up the truck sector, given how diverse it is, we came up with 3 distinct categories, with unique approaches for each. The 3 regulatory categories are (1) line-haul tractors or “semis,” which are the largest 18-wheeler heavy-duty tractors used to pull trailers, (2) heavy-duty pickups and vans, like the three-quarter and one-ton trucks and vans made primarily by Ford, GM, and Chrysler, and (3) everything else, which we called “vocational trucks,” like buses, refuse trucks, concrete mixers, delivery trucks, and so forth.**

**For the line-haul tractor and vocational segments, we set separate standards for engines and vehicles, to ensure improvements in both, and also to harmonize better with existing EPA heavy-duty programs. For heavy-duty pickups and vans, we set an integrated standard for engines and vehicles, since those vehicles**

**are more like their light-duty cousins, and the same manufacturers tend to make them, so it made sense to treat those related vehicles similarly.**

**We also set separate standards for fuel consumption and for greenhouse gases: NHTSA set the fuel consumption standards under its authority, and EPA set standards for CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>, and HFCs. The fuel consumption and CO<sub>2</sub> standards are aligned, since those are really two sides of the same coin.**

**This sounds like a lot of standards, but it's important to remember that, one, they're harmonized, and two, the program was also designed to provide as much flexibility for industry as possible, while still ensuring that we make improvements in fuel consumption and emissions. To that end, the program provides incentives for advanced technologies like electric**

**vehicles and hybrids (if you build one such vehicle, it counts as one and a half vehicles for purposes of averaging). Of course, we also allow averaging, banking, and trading of credits earned by manufacturers for over-compliance. We have also developed ways for manufacturers to get credit for demonstrating to us that they can make real-world improvements with innovative technologies not contemplated in existing test procedures.**

**We also give a boost to alternative fuel vehicles: greenhouse gas and fuel consumption compliance are calculated based on a vehicle's CO<sub>2</sub> emissions, so low carbon fuels like natural gas will perform 20 to 30 percent better than comparable gasoline and diesel engines under this approach, and manufacturers who build them can average that better performance into their overall compliance numbers. We like this**

**approach because it's consistent with President Obama's "all of the above" energy strategy – it helps us incentivize fuels that we can get easily from the U.S. and from Canada, and it reduces greenhouse gas emissions at the same time.**

**So what do we think these standards will achieve? In the U.S, at least, not counting improvements that will occur in Canada as a result of adoption of these standards, we're estimating that these standards will result in the consumption of 530 million barrels less oil from 2014-2018 model year trucks; 270 million metric tons lower GHGs; 50 billion U.S. dollars in fuel savings; and \$49 billion in net benefits to society. Let me go back to that one number -- \$50 billion in fuel savings. That's real money to truck drivers and businesses that they can reinvest in their communities. We're really proud of these standards.**

**So how are we going to get there? We think that much of the technology is available today, and manufacturers just need to adopt more of it. For line-haul tractors, some of the technologies available today that we think manufacturers can employ to meet the standards include aerodynamic profiles and fairings; reduced tire rolling resistance for “steer” and “drive” tires; weight reduction; reduction in extended idle operation for tractors with sleeper cabs; and vehicle speed limiters. We estimate that the CO<sub>2</sub> and fuel consumption standards will achieve reductions of 10 to 23 percent compared to a 2010 truck without idle shutdown. Sleeper cabs would achieve the greatest reductions by combining vehicle and engine improvements with reduced idling.**

**For heavy-duty pickups and vans, we assumed that the technologies available for improving fuel consumption and greenhouse gas emissions here would be similar to the ones we considered in the light-duty program for model years 2012 to 2016, but adapted for heavy-duty applications.**

**We think engine technologies like gasoline direct injection, internal friction reduction, and diesel aftertreatment optimization; transmission technologies like 8-speed transmissions; accessory technologies like electric power steering, high-efficiency accessories, and improved air conditioning systems; and other technologies like aero drag reduction, weight reduction, and lower rolling resistance tires can all be easily applied to achieve the necessary improvements.**

**Vocational vehicles were tougher, because their diversity means that there are few common avenues for CO<sub>2</sub> and fuel consumption reduction that can be applied across the whole category. For model years 2014 to 2018, NHTSA and EPA focused on reduced tire rolling resistance and engine improvements, which are technologies that all vocational vehicles have.**

**Something like aero drag reduction, a technology that's extremely important for the other segments, is of limited value in many vocational vehicle applications where highway speeds are rare, and developing an appropriate baseline and level of improvement by vehicle type will take us a number of years.**

**We are, however, allowing vocational truck manufacturers to quantify improvements from hybrid powertrains as a means of compliance, because we want to incentivize manufacturers who are willing to**

**take that leap, and hybridization can be really helpful in many vocational applications. We estimate that the final CO<sub>2</sub> and fuel consumption standards will achieve reductions from 6 to 9 percent, depending on the size of the truck.**

**So where do we go from here? As I mentioned earlier, the 2018 standards will continue if NHTSA and EPA don't create new ones, but don't think we're resting on our laurels just yet. As excited as we are about this program, we have to see how it works in action – we're starting to get early compliance data from some manufacturers already, and we're working through it and tying up loose ends from the final rule. We're also starting to explore options for the next round of standards – thinking about whether there are things that we might like to improve, thinking about what technologies will be available, and so forth. Our**

**thoughts on those things are very preliminary at this point, of course.**

**And I should note, on NHTSA's side, the same team that works on heavy-duty is also working on light-duty, and as you may know, we're pretty busy with light-duty right now.**

**You probably heard, in July 2011, President Obama's announcement of the historic agreement with 13 major automobile manufacturers to increase fuel economy to an estimated 54.5 miles per gallon equivalent for cars and light-duty trucks by Model Year 2025, if all of the improvements are made with fuel economy-increasing technologies.**

**We have also proposed fuel efficiency and greenhouse gas emissions standards through model year 2025.**

**NHTSA and EPA worked closely with auto manufacturers, the state of California, environmental groups, and other stakeholders to ensure that the standards we proposed will be achievable and cost-effective, and that they will preserve consumer choice.**

**I hope I have provided some insight into our process, and we will continue to move forward together. We think that harmonization is the best thing for our countries and for our consumers. These standards save folks money at the pump, reduce our dependence on petroleum imports, and reduce harmful greenhouse gas emissions.**

**The more we harmonize, the more we can accomplish.  
Thank you.**