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Daimler Trucks North America

Sean Waters
Director
Compliance and Regulatory Affairs

August 8, 2014

Attention: David M. Hines
Acting Associate Administrator for Rulemaking
U.S. Department of Transportation,
West Building, Ground Floor, Room W12–140
1200 New Jersey Avenue SE.
Washington, DC,

Re: Notice of Intent to Prepare an Environmental Impact Statement for New Medium- and Heavy-Duty Vehicle Fuel Efficiency Improvement Program Standards (Docket No. NHTSA-2014-0074)

Dear David M. Hines,

On July 9th, 2014, the National Highway Traffic Safety Administration ("NHTSA" or "the Agency") published a notice for comment titled "Intent to Prepare an Environmental Impact Statement for New Medium- and Heavy-Duty Vehicle Fuel Efficiency Improvement Program Standards ("EIS")," Docket No. NHTSA-2014-0074.[1] The purpose of this Notice is to analyze the range of actions, alternatives, and impacts to be considered while NHTSA and the EPA ("the Agencies") promulgate new fuel efficiency standards for commercial medium- and heavy-duty ("MD/HD") on-highway vehicles and work trucks that will be proposed by the agency pursuant to the Energy Independence and Security Act of 2007 ("Phase 2"). This EIS will facilitate the Agency's scoping process for determining the scope of issues to be addressed in the EIS and for identifying the significant environmental issues related to the proposed action. In response to NHTSA's request, Daimler would like to provide input into this process to help identify the significant issues to be examined in the EIS. Daimler appreciates the opportunity to provide input in to this process.

Daimler Trucks North American ("DTNA") continues to maintain a strong commitment to the safety and fuel efficiency of our vehicles which support both economic productivity and to protect the human and natural environment. This is demonstrated by our history of being first to market with many safety technology systems including antilock brake systems in 1987, obstacle detection systems in 1996, driver airbags in 1998, stability control systems in 2002, lane departure warning systems in 2006, seat belt pre-tensioners and side airbag systems for rollover protection in 2007, and adaptive cruise control and collision avoidance systems in 2007. Moreover, DTNA's engine manufacturing division, Detroit Diesel Corporation, was one of the first heavy-duty engine manufacturers to be certified to the new 2014 EPA/NHTSA GHG and fuel efficiency engine regulations ("Phase 1"). DTNA's vehicle manufacturing divisions, Freightliner, Western Star, Freightliner Custom Chassis, and Thomas Built Buses, were the first to be certified to the new Phase 1 vehicle regulations – certifying DTNA's entire product line before any other manufacturer certified any portion of theirs. Our Detroit© powered Cascadia Class 8 truck is the industry benchmark for fuel efficiency. Consistent with our comments on the Phase 1 rulemaking, Daimler continues to believe that a rule that considers the GHG reduction potential of the entire vehicle with its integrated components is essential. Such a complete vehicle program must include the engine as an integrated component, and be neutral as to the technologies that manufacturers employ to meet the specified standards. This would have

[1] NHTSA, "Notice of Intent to Prepare an Environmental Impact Statement for New Medium- and Heavy-Duty Vehicle Fuel Efficiency Improvement Program Standards" Published Wednesday July 9, 2014, 79FR 38842.

4747 N. Channel Avenue – C2B
Portland OR 97217-7699
503-745-2745 Phone
503-745-5544 Fax
Sean.Waters@Daimler.com

the most impact on improving real-world fuel efficiency and aligns best with similar programs being developed in other countries.

In this EIS, NHTSA lists three programmatic requirements (1) The program must be ‘‘designed to achieve the maximum feasible improvement’’; (2) the various required aspects of the program must be appropriate, cost effective, and technologically feasible for HD vehicles; and (3) the standards adopted under the program must provide not less than four model years of lead time and three model years of regulatory stability. In considering these various requirements, NHTSA will also account for relevant environmental and safety considerations. This document is organized such that first it provides comments on certain statements made in the EIS Federal Register notice, then on the programmatic requirements described therein, finally a separate section details considerations NHTSA should have when further regulating 2B/3 vehicles.

Comments on Statements from the EIS Notice

“The HD sector is extremely diverse in several respects, including types of manufacturing companies involved, the range of sizes of trucks and engines they produce, the types of work the trucks are designed to perform, and the regulatory history of different subcategories of vehicles and engines.”

Daimler is pleased that NHTSA recognizes the extremely diverse nature of the MD/HD commercial trucking industry. We hope that similar to Phase 1, Phase 2 will not result in a program that limits customers' commercial needs in this market. The variety of operational uses of our trucks – from heavy-hauls to urban delivery – precludes one technological solution fitting the entire market. Any attempt to segment the vocational market must carefully consider unintended consequences that could result in preventing commercial needs from being met.

“The Phase 2 standards are expected to spur manufacturing innovation and lead to the adoption of new fuel-efficient technologies on trucks and semi-trailers.”

NHTSA should carefully weigh the likely impact of driving disruptive technology changes through regulation. The trucking industry is extremely sensitive to high year-over-year cost increases, as come at the beginning of a new regulation's applicability, especially given the permanent high cost of technologies required to meet today's near-zero emissions standards. For example, before 2007 emissions requirements took effect, the industry saw a large pre-buy. And when the regulations took effect, the industry saw a dramatic low-buy. The net effect was employment disruption. In the context of NHTSA's present rulemaking, a program that fails to regulate complete vehicle fuel efficiency – but instead forces technology into the engines even when more cost-effective improvements are possible on the rest of the vehicle – will lead to unnecessarily high costs and low cost-effectiveness. In turn, if NHTSA proposes to drive fuel efficiency through separate engine standards, NHTSA risks similar employment disruption as that seen in the 2007 emission change. Moreover, NHTSA diverges from the approach being taken by the rest of the regulators around the globe looking at CO2 standards for MD/HD vehicles, such as the EU and Chinese regulators. In summary, NHTSA should not drive fuel efficiency improvements through separate engine standards.

“Vocational body manufacturers were not regulated in Phase 1”

Is NHTSA considering regulating vocational body manufacturers in Phase 2?

Daimler Trucks North America LLC

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4747 N. Channel Avenue – C2B
Portland OR 97217-7699
503-745-2745 Phone
503-745-5544 Fax
Sean.Waters@Daimler.com

"Tractors sometimes run without a trailer in between loads, but most of the time they run with one or more trailers…"

EPA determined in Phase 1 that tractors rarely travel without a trailer – a study to support Phase 1 showed that based on large statistical sample of trucks on the roads, no more than 1.5% of this sample were observed operating without a trailer at any time.[2]

"Fleet owners and truck owner/operators were not regulated in Phase 1"

Is NHTSA considering regulating fleet owners and truck owner/operators in Phase 2?

"NHTSA has invited EPA, the Federal Motor Carrier Safety Administration (FMCSA), and the Department of Energy (DOE) to serve as cooperating agencies on this EIS. If they accept, these agencies' role in the development of the EIS could include the following as they relate to their area of expertise:

- *Providing information and expertise on manufacture, sale, operation, and maintenance, of heavy-duty vehicles;*
- *Providing information and expertise related to technologies for improving the fuel efficiency of heavy- duty vehicles*
- *…"*

Daimler respectfully asks that the Agencies not overlook MD/HD truck and engine manufacturers and commercial truck users as some of the best direct sources of this information.

Comments on NHTSA's Programmatic Elements

(1) The program must be ''designed to achieve the maximum feasible improvement''

This provision also directs NHTSA to ''*adopt and implement appropriate test methods, measurement metrics, fuel economy standards, and compliance and enforcement protocols that are appropriate, cost-effective, and technologically feasible for commercial medium- and heavy-duty on-highway vehicles and work trucks.*'' In order to best meet these goals, the Agency must include a complete vehicle standard with no separate engine standard in its Preferred Alternative. In Phase 1, despite many concerns raised by OEMs and other stakeholders, the Agencies created two parallel programs for MD/HD engines and vehicles. The engine program credits manufacturers for engine-only CO2 or fuel consumption savings but not for full powertrain savings nor for savings due to (for example) more efficient engine accessories. The vehicle program credits manufacturers only for vehicle technologies such as aerodynamics and speed limiters but not for powertrain savings nor for engine accessories, engine cooling strategies, transmission shift strategies, nor a host of other technologies that involve engine and vehicle systems integration. Rather, the Agencies' simulation model, GEM, assumes predetermined engine operating "fuel maps" (i.e. engine fuel consumption values based on the demand on the engine at different operating points) and predetermined powertrain characteristics. So, if engine and vehicle manufacturers invest in technologies to improve the efficiency of engine accessories, powertrains, cooling, etc., or if engine manufacturers optimize their engines' fuel maps to improve efficiency over real-world drive cycles, the manufacturers cannot get CO2 or fuel economy credits for such improvements even though such a strategy would provide real-world benefits.

This program has already created a divergence between "certified" CO2 values and real-world fuel economy improvements by separating out components such as engines from the complete vehicle. As the stringency

[2] U.S. EPA, Docket Number HQ-OAR-2010-0162-0043

4747 N. Channel Avenue – C2B
Portland OR 97217-7699
503-745-2745 Phone
503-745-5544 Fax
Sean.Waters@Daimler.com

of these standards increase – the risk of this divergence resulting in OEMs being forced to develop technologies that only provide "test cycle" improvements instead of real-world efficiency improvements greatly increases. For decades, the goal of our industry has always been to provide our customers who use these vehicles for commercial purposes with the lowest total operating costs to increase their revenues. After decades of providing continuous improvements, the potential to improve single components is nearly gone; future fuel efficiency gains developed will come from further integration of the vehicle and powertrain and must be credited through complete vehicle standards. Simply trying to "correct" engine test procedures to be more reflective of how engines operate today does not solve the problem as standards will continue to be divergent from manufacturers' future products and how vehicles operate in the real-world. Being continually tied to a standard that does not reflect the most current, advanced fuel efficient technologies will interfere with our ability to engineer solutions that provide real-world fuel economy. Finally, it is not a solution to instead revisit this problem and try to correct it every few years through future potential rulemakings as this would remove certainty needed to engineer, manufacture, and certify our fuel efficient and near-zero emission products. Daimler can provide more information on the divergence between real-world and certified CO2 values on a confidential basis to the agency upon request.

The EIS describes NHTSA's methodology of selecting a "lower point" and "upper point" for stringency analysis that the Agency believes will generate reasonable alternatives for Phase 2 including a "Preferred Alternative" which reflects *"what the agency believes is the ''maximum feasible improvement'' required under EISA, and may require fuel efficiency improvement that is constant throughout the regulatory period or varies from year to year (and from segment to segment) in accordance with predetermined stringency increases."* Daimler would like the Agency to also include in this analysis any assumptions it uses to generate baselines from which it will determine ultimate stringency. For example, there are significant problems with simply using the GEM 2017 vehicle as a baseline. For example, the 2017 GEM model includes an EPA default fuel map that was based on projections that were made early during the development of the Phase 1 rule, and as such now requires updating to include current information so that fuel maps used to project engine efficiency in 2017 are more reflective of actual engines. In addition, the Agencies should include assumptions used for technology penetration and ensure that any values used or carried over from Phase 1 are checked for accuracy based on current sales data.

(2) The various required aspects of the program must be appropriate, cost effective, and technologically feasible for HD vehicles;

The EIS states that the Agencies will assess advanced technologies that may not currently be in production. Daimler hopes the Agencies will recognize that uniform technology adoption is not appropriate for a market whose needs require a very diverse range of commercial vehicles. Further, complete vehicle standards are the best way to ensure our customers receive fully-integrated optimized vehicles at the lowest cost which is the most effective way to encourage adoption of new fuel efficiency technology. As the future brings new and yet unknown technologies to reduce fuel consumption – complete vehicle standards will be less likely to interfere with real-world reductions. As mentioned above, there is great concern that standards not be set that presume the use of expensive and unproven technologies that will disrupt the MD/HD commercial market – standards and regulatory structure should instead encourage and credit such technologies. Moreover, Daimler hopes that the Agencies recognize that not all technologies examined in a regulatory process or studied in a laboratory are sufficiently robust for the MD/HD market. There is significant risk in mandating full- or widespread-penetration of unproven technologies.

The EIS states that for tractor standards, NHTSA will look to "*Engine and powertrain efficiency improvements, aerodynamics, weight reduction, improved tire rolling resistance, hybridization, natural gas engines and converters, automatic engine shutdown, and/or accessory improvements (e.g., water pumps, fans, auxiliary power units, and air conditioning)*" for reduction potentials. It is worth noting that these

Daimler Trucks North America LLC

A Daimler Company

4747 N. Channel Avenue – C2B
Portland OR 97217-7699
503-745-2745 Phone
503-745-5544 Fax
Sean.Waters@Daimler.com

improvements are better assessed when looking at the complete vehicle. For example – using low rolling resistance tires on a truck will reduce the power demanded from the engine and in turn will affect how an engine should be designed.

The EIS also states that NHTSA will evaluate several factors in developing alternatives for consideration and analysis, including costs for technology development and manufacture, and costs that will be paid by heavy-duty vehicle owners and operators. Daimler hopes that NHTSA will also consider the cost burden that other regulatory programs have already placed on the MD/HD trucking industry and that further increases in costs can prevent purchasers from getting financed for new trucks – delaying benefits.

Another concern with technical feasibility is the potential lowering of certain anti-backsliding engine standards (e.g. N_2O or CH_4). These standards were initially set in Phase 1, based on available data, to prevent future increases from existing levels. As Phase 1 has just gone into effect this year, the limited available data from this program does not provide enough support to show that lower standards are feasible nor has there been sufficient time to conduct a thorough evaluation of technical capabilities to do so. It would be inappropriate to modify these anti-backsliding standards to a level that could jeopardize certification of future more fuel efficient products especially as that standard is likely to become more stringent by default as CO_2 stringency increases. For example, as more stringent CO_2 standards and competitive pressures force engine manufacturers to seek fuel economy improvements by increasing engine-out NO_x through combustion improvement or reduced EGR, SCR performance demands and DEF dosing rates will need to increase and complying with existing N_2O standards will likely become a constraint.

(3) The standards adopted under the program must provide not less than four model years of lead time and three model years of regulatory stability.

While the EIS states that NHTSA is bound by lead-time and stability requirements, it also appears to dismiss these requirements by stating that "Phase 2 may include post-MY2018 engine and vehicle fuel efficiency standards that are more stringent than those for MYs 2016-2018. For Phase 1 there is an additional round of stringency that takes effect in 2017, therefore, standards that go into effect in 2019 would not provide required stability. Based on the timeline presented in the EIS (a rule finalized in March of 2016) standards that take effect in 2019 would also not provide manufacturers the required lead-time. Although in Phase 1 manufacturers were willing to overlook NHTSA's requirement of four years of lead-time for the first set of standards, given the complexity of today's MD/HD vehicle and engines, this will not be possible in Phase 2. Planning, engineering, validating, and certifying products takes much longer than even four years.

Lead-time and stability issues are further complicated by the fact that tying the effective date of the regulation to a vehicle model year designation creates an artificial constraint on the heavy-duty industry that helps no one, produces no emission benefits, and does nothing to decrease GHG emissions. In the MD/HD industry, model years are not tightly linked to vehicle build year. A MD/HD model year generally starts early in the preceding year: February, March, or April, as permitted in the provisions of 49 CFR Part 565 and established by long-standing industry practice. Further, vehicle model years are not linked to engine model years. Engine model years are essentially the same as the calendar year (e.g. an engine build February 1, 2014 is a 2014MY engine). Standards should recognize this difference as should lead-time and stability requirements. Specifically, new standards should take effect on a particular day, thereby regulating one model year of vehicle and the prior model year of engine (*e.g.*, model year 2022 vehicles and model year 2021 engines, both of which we expect to begin production in early 2021).

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A Daimler Company

4747 N. Channel Avenue – C2B
Portland OR 97217-7699
503-745-2745 Phone
503-745-5544 Fax
Sean.Waters@Daimler.com

(4) Unintended consequences and relevant environmental and safety considerations.

Daimler believes the EIS lists a very comprehensive and complete group of issues to be analyzed regarding the cumulative impacts from various emissions source categories. In particular, Daimler would like to comment on the “safety” aspect as it pertains to the agency and GHG reductions. The main concern we have is how NHTSA plans to balance its role for promulgating both safety and GHG regulations, and Daimler asks NHTSA to make this clear in the EIS. This is especially concerning given NHTSA’s statement that it may set standards that force technologies not in production today because tomorrow the Agency could set safety standards that either make that technology unworkable or cause substantial delays in the technology being saleable. If NHTSA sets standards based on GHG technologies – and then finds safety reasons later that this technology should not be used – this puts OEMs in an untenable position. The way to create the most certainty for our industry is to not set standards that require unknown and unproven technologies. An agency cannot mandate a fuel efficiency improvement premised on a technology while at the same time administering safety regulations that limit our ability to implement the technology, because doing so would be both 1) arbitrary and capricious prohibited by APA § 706 (in that it would be self-inconsistent regulation) and 2) is in conflict with EO 12866 prohibitions against “regulations that are inconsistent, incompatible, or duplicative with [the agency’s] other regulations or those of other Federal agencies.” Examples of this include aero standards forcing improvements from things such as removing side-mirrors and replacing them with cameras. How many years could NHTSA require to complete such a rulemaking to amend the FMVSS to allow such technology to be used? Another example is low rolling resistance tires and their effect on stopping distance. Daimler encourages NHTSA to include these types of considerations in the EIS and to analyze how impacts from foreseeable future actions of NHTSA or other agencies may affect Phase 2. Future safety standards and/or separate engine standards that force expensive engine technologies can create a CO2 penalty for vehicles, which must be avoided as any weight increase in the engine or change in components that can affect the aero profile of a vehicle will increase a vehicle’s CO2 certification level. These affects must be accounted for in the final rulemaking. In addition, NHTSA should consider the impacts other regulatory options even those outside of the agency’s authority could have on CO2 reductions – for example increased trailer length or allowing multiple trailers per truck.

In its EIS notice, NHTSA asks how it should assess cumulative impacts, including those from various emissions source categories and across a range of geographic locations. One geographical consideration we hope NHTSA will consider – is to ensure that 1) emissions regulations remain uniform across the nation, and 2) that limited localized national ambient air quality standard (NAAQS) attainment issues not drive reductions of criteria pollutant (*i.e.*, NOx) standards at the expense of optimal solutions for GHG reductions and fuel savings. Manufacturers have faced unprecedented challenges in the short span of less than a decade to develop technologies necessary for compliance with dramatically reduced near-zero criteria pollutant standards. In addition to greater than an order of magnitude reductions in criteria NOx and PM emissions, manufacturers have additionally implemented sophisticated on-board diagnostic (OBD) systems to monitor the functionality of emissions control systems over the vehicles’ service life. The ability of manufacturers to step up to these demanding requirements has to an extent only been possible by the existence of uniform standards across the nation which have enabled manufacturers to apply their engineering efforts and limited resources to developing a single engineering solution for application uniformly across the nation.

Even with uniform nationwide requirements, the technical demands of today’s regulations have resulted in at least one reputable engine manufacturer dropping out of the on-highway marketplace and another being on the verge of doing so. Consequently it is imperative that as manufacturers develop and optimize technologies to meet today’s complex rules – and, additionally to meet more stringent GHG emission rules – that the uniformity of standards be maintained so as to facilitate manufacturers’ product development efficiencies, which are essential to the creation of fully-developed, customer-ready products. While California is targeting further reductions from the current near-zero criteria pollutant emission levels in an effort to address localized NAAQS attainment issues in two areas of the state, it is important not to hamper

4747 N. Channel Avenue – C2B
Portland OR 97217-7699
503-745-2745 Phone
503-745-5544 Fax
Sean.Waters@Daimler.com

the nation's ability to meet GHG reduction needs for the sake of such localized needs. Although technological innovations may yet surface which will help mitigate the existing known trade-off between NOx emissions and fuel consumption (CO2), until such time, regulators should focus on the broader needs of the marketplace for fuel consumption improvement and associated GHG reduction and not compromise optimization for fuel consumption by supporting increased stringency of NOx standards for two limited areas of a state.

In Phase 1, the Agencies determined that, consistent with the light duty vehicle GHG rule, monitoring of components and systems for criteria pollutant emissions will have an equally beneficial effect on CO2 emissions such that the Agencies required no new OBD requirements for fuel efficiency. Existing and pending more stringent OBD rules require thorough monitoring of virtually every system and component used by manufacturers for emissions control including emissions critical inputs from the vehicle to the engine control system. Daimler believes this principle and reasoning should also apply for Phase 2. In addition, the unnecessary and expensive burden of additional OBD can hamper development of future technologies. For example, in Phase 1 hybrid manufacturers asked the Agencies to provide a delay in OBD requirements for hybrids, which the Agencies to their credit did. However, California's ARB did not provide for such a delay. Largely due to the low sales volume, the high cost, and tremendous resources required to develop OBD, key hybrid manufacturers are no longer able to offer hybrids in California (and some other states that have adopted California requirements). Many have exited the business, thereby diminishing the availability of fuel-saving vehicles. We recommend that the Agencies do not exacerbate this problem in Phase 2.

Other considerations for avoiding harmful unintended consequences include ensuring that standards do not drive manufacturers to use larger engines than a vehicle needs – a problem that occurs under California rules. In Phase 1 the Agencies understood and allow for the use of smaller engines of a different class (e.g. a medium-heavy-duty engine in a heavy-heavy-duty vehicle) even though the useful life requirements of these service classes may differ. This meant, for example, that hybrid integrators could use a smaller engine in a larger vehicle to increase efficiency. This is not the case in California, however, where the state mandates replacement of such an engine whether or not it is fully functional. Consequently, an engine in a transit bus must be replaced every 185,000 miles, which greatly increases the cost of an already expensive technology.

Expensive technologies must provide significant benefits or they will be rejected. Maintenance costs must not increase, parts must be readily available, downtime must be kept to a minimum, and these technologies must provide a payback. The unintended consequences of a lack of adequate payback (among other reasons) has caused many cities to repower hybrid buses with diesel engines.[3,4,5]

Class 2B/3 Comments:

(1) The program must be ''designed to achieve the maximum feasible improvement''

We appreciate that in the Class 2B/3 regulation the transport efficiency is taken into account with the workfactor. A cargo factor reflecting the transport volume would help to improve the consideration of the transport efficiency of products like work vans.

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[3] McCallum, Kevin, "Santa Rosa may go back to diesel buses." The Press Democrat 10/8/2013. Available here: http://www.pressdemocrat.com/csp/mediapool/sites/PressDemocrat/News/story.csp?cid=2218585&sid=555&fid=181 last accessed 8/6/2014.

[4] CBC News, "Pilot project in draft 2013 budget earmarks $550k to retrofit 5 of city's 177 hybrid buses." Available here: http://www.cbc.ca/news/canada/ottawa/city-could-pay-to-turn-hybrid-buses-into-diesel-buses-1.1154110 Last accessed 8/6/2014.

[5] Angelo Young, "New York City Scrapping Nearly A Fourth of Its Hybrid Bus Engines for 100% Diesel Bus Engines." Available here: http://www.ibtimes.com/new-york-city-scrapping-nearly-fourth-its-hybrid-bus-engines-100-diesel-bus-engines-1329977 Last accessed 8/6/2014.

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4747 N. Channel Avenue – C2B
Portland OR 97217-7699
503-745-2745 Phone
503-745-5544 Fax
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The slope of the current Class 2B/3 regulation is decreasing slightly year by year. That reflects a constant percentage burden over the workfactor but causes a higher absolute burden to vehicles with a higher workfactor. For that reason an identical vehicle with different payload has a different burden. The vehicle with the higher payload and the higher usability has the higher burden. We believe that a parallel shift of the workfactor equation (constant slope) would avoid this disadvantage.

Currently, the adjustment included in Phase 1 for 4WD vehicles fits to real world additional fuel consumption, but decreases by the aforementioned decreasing slope. The 4WD adjustment should be retained. 4WD drives are only chosen by customers with a higher demand on traction - driving in areas with long winter periods or driving on gravel roads, these systems are too expensive to be used to try and game the system.

(2) The various required aspects of the program must be appropriate, cost effective, and technologically feasible for HD vehicles*;*

Stringencies must reflect cost effectiveness of applied and future technologies and be acceptable to customers or benefits of this program will be delayed. Our customers use these vehicles for commercial purposes and business tools to earn money and therefore many of them cannot afford more than 2 years depreciation time. A change of this time in the calculation method of NHTSA would require a change of the business model of many of our customers and may affect customers' abilities to get financing. All technologies taken into account within the Class 2B/3 stringencies need to reflect cost effectiveness calculations especially when it comes to alternative drivetrains such as hybrids, battery and fuel cell driven electric vehicles. Also very important is that many improvements are not in the power of the OEMs, e.g. improvements on the tire level. Compared to the passenger car volume Class 2B/3 volumes are much lower and therefore opportunities to develop new low rolling resistance tires just for the requirements of the Class 2B/3 vehicles are often limited. Low rolling resistance tires available today for light-trucks do not have the required load rating for the Class 2B/3 category.

Mercedes Benz Vans gained experience on alternative drivetrains in Europe in the light commercial vehicle (LCV) segment with the Vito E-CELL, a fully electrically driven van. The Vito was offered at approximately double the leasing rate of a conventional vehicle, because of the higher costs. This high price is not accepted by customers. This behavior shows that the pricing of a commercial vehicle is very decisive for customers. Customers always look at the TCO of a vehicle because a van is just an additive tool in their business. Therefore the interaction between regulation, manufacturer and customer needs to be balanced. If regulations make fuel efficient vehicles too expensive for customers and their business, the goal of reducing GHG emissions and fuel consumption reduction will not be achieved

To cover additional costs for fuel saving technologies a high yearly mileage is needed. Alternative drivetrains are typically beneficial in urban locations with low mileage. Therefore there is a gap in fulfilling cost-effectiveness, especially regarding alternative drivetrain technologies. We recommend that only cost effective technologies should be taken into consideration in setting future standards.

Downsizing of engines has essentially reached its limit. The Mercedes-Benz Sprinter is already today equipped with a 2.2 l in-line diesel engine and we believe further downsizing, based on required payload and towing weight requirements are limited. Therefore the agency should not include any further downsizing of engines for Class 2B/3 vehicles into their fuel consumption simulation model. There are inherent safety tradeoffs in further downsizing engines, including the ability to climb hills, startability, and others.

4747 N. Channel Avenue – C2B
Portland OR 97217-7699
503-745-2745 Phone
503-745-5544 Fax
Sean.Waters@Daimler.com

The technology level in our vans today is already very high thus creating a very expensive vehicle - leaving little room for additional cost increases in order to continue market shifts to these highly efficient vehicles. Approximately 90% of the European van customers choose a 4 cylinder diesel engine for their transport business. Efficient 4 cylinder diesel engines represent a very good compromise in fuel efficiency and transport performance. Even in the US there is a high demand for this technology platform, the demand on V6 engines decreased by half.

Class 2B/3 vehicles are not just bigger cars. Although many components are shared with passenger cars they have to be adapted to the needs of more robust commercial-grade Class 2B/3 vehicles. Especially if payload and towing weights are taken into consideration required torque, power, reliability and vehicle lifetime requirements are very different than passenger car requirements. Additionally many of Class 2B/3 vehicles are used in various configurations even up to fire fighter vehicles, ambulances etc. and therefore their chassis requirements are very different than passenger car technologies. Extensive and costly further developments are needed to extend the durability and reliability of such technologies to commercial vehicle applications.

Today there are large differences between the stringency of diesel and the gasoline standards. We believe that this is a big disadvantage for the more efficient diesel technology. With current near-zero emission standards, diesel technology does not have disadvantages regarding exhaust emissions. The stringency of both gas and diesel standards should be harmonized in a future standard.

Commercial vehicles have very cyclical sales over the course of a model's product life cycle – sales numbers often swing with the GDP/economy. This has a significant impact on type, efficiency and shape of purchased vehicles. Therefore the agency should seek for further flexibilities reflecting changing economic conditions over the product life cycle.

Finally, NHTSA should note that the European light commercial vehicle legislation (LCV) (N1: up to 7,700 lbs) is different than the US Class 2B/3 regulation (8,500 lbs – 14,000 lbs). Vehicles over 7,700 lbs are not regulated in the EU so far. The European LCV market consists of cars, small vans, midsize vans and large vans for commercial use and only to transport goods. The biggest vehicles in this segment are vans like the Sprinter 2500. The CO2-targets in Europe are based on the curb weight.

(3) The standards adopted under the program must provide not less than four model years of lead time and three model years of regulatory stability.

The next standards should not come into force earlier than 2025. Class 2B/3 vehicles do not have the same series volume as passenger cars and require therefore not only a longer production lifetime but also due to limited financial resources a longer development phase. Keeping in mind that the final rule will be signed by March 2016, required normal development and testing time for new technologies aligned with the development of the conventional vehicle requires around seven years, new stringencies should not come into force earlier than MY 2025.

Reflecting the Phase 1 stringencies with their changes over the next years, a further tightening in Phase 2 should not be set in steps that take place every year – standards should remain stable for at least five years, which would provide a majority of the required development and testing time. Technology changes within our vehicles need time and we therefore cannot modify every year the design of our vans.

(4) Unintended consequences and relevant environmental and safety considerations.

The Phase 2 legislation should be one aligned national program between EPA, DOT/NHTSA and ARB.

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Portland OR 97217-7699
503-745-2745 Phone
503-745-5544 Fax
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Conclusion:

Daimler appreciates the opportunity to comment and the work that will go into drafting the actual EIS. In response to NHTSA seeking comments on what criteria should be used to choose the Preferred Alternative, given the agency's statutory requirements, Daimler suggests that if the Agencies must revise the standards, the Agencies only set a complete vehicle standard with reasonable and achievable stringency that does not create market disruptions. Such standards are the most cost effective because they allow manufacturers to provide customers with the most cost-effective solution to meeting customer needs while also meeting additional GHG regulations.

Further, such standards are appropriate because as NHTSA collaborates with the EPA on GHG emission and fuel efficiency standards, the Agencies should focus on standards that deliver cost-effective improvements in the real world – not just on an engine dynamometer. Engine tests, and especially engine tests on outdated test cycles, do not necessarily drive GHG reduction or fuel consumption improvements, because what matters is how complete vehicles perform for our customers on the road. Modifying these tests in some way only perpetuates the problem and adds more uncertainty to manufacturers of MD/HD engines and vehicles. The Agencies should focus on delivering real-world fuel savings by regulating the complete vehicle. Engines, transmissions, drivelines, axles, plus aerodynamics, vehicle weight, and optimizations like eCoast, all factor together into real-world fuel consumption, and the regulations should treat all of the components in an integrated way – as they are designed to perform.

Further still, such a regulatory structure is technically feasible because the use of alternative GEM efficiency inputs (i.e. transmission efficiency) and the use of a real fuel map in GEM is possible as the GEM model can easily accept these inputs, and manufacturers can establish a common practice for measuring fuel maps with the reliability and accuracy necessary for a regulatory program thereby allowing manufacturers to choose the most cost-effective manner to meet upcoming standards.

Respectfully Submitted

Daimler Trucks North America LLC

4747 N. Channel Avenue – C2B
Portland OR 97217-7699
503-745-2745 Phone
503-745-5544 Fax
Sean.Waters@Daimler.com