ORAL ARGUMENT NOT YET SCHEDULED

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

TRUCK TRAILER MANUFACTURERS ASSOCIATION, INC., *et al.*, *Petitioners*, v. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, *et al.*, *Respondents*.	Consolidated Case Nos. 16-1430, 16-1447

APPENDIX TO INTERVENOR PUBLIC HEALTH AND ENVIRONMENTAL ORGANIZATIONS' OPPOSITION TO MOTION FOR STAY

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Attachment 1

Declaration of Dr. Elena Craft, Ph.D., Environmental Defense Fund

IN THE UNITED STATE COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

DECLARATION OF DR. ELENA CRAFT

I, Dr. Elena Craft, declare:

1. I am a Senior Scientist at the Environmental Defense Fund ("EDF"). I received a Ph.D. in toxicology from Duke University's Nicholas School of the Environment. I also have a Master of Science degree in toxicology from North Carolina State University.

2. As a Senior Scientist, I conduct outreach and help research, formulate, and implement measures to reduce air pollution that leads to ozone formation, particularly emissions from fossil fuel-fired sources such as gasoline- or diesel-powered vehicles, power plants, and other industrial sources. I also work with government, civic, business, and other groups at the local level, and EDF staff across the nation to design solutions to air quality challenges. I have provided expert testimony at two House Congressional hearings related to issues of air quality, and ozone specifically. I have served on various advisory committees to the EPA, including the Mobile Source Technical Review Subcommittee ("MSTRS") under the Clean Air Act Advisory Committee ("CAAAC"); the Air, Climate, and Energy Subcommittee of the Board of Scientific Counselors; an Environmental Justice Technical Review Subcommittee; and a ports work group.

3. This declaration is submitted in support of the Public Health and Environmental Intervenors' opposition to the Truck Trailer Manufacturers Association ("TTMA") stay request.

Benefits of the Phase 2 Standards

4. In 2016, EPA and NHTSA finalized the rule Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles - Phase 2, 81 Fed. Reg. 73,478 ("Phase 2 Rule"). The Phase 2 Rule applies to medium and heavy-duty engines, vehicles, and trailers covering model years 2018 through 2027.

5. EPA has estimated that these standards will reduce carbon pollution by more than 1 billion tons over the lifetime of the vehicles subject to the program. That is equivalent to the annual CO_2 emissions from 248 coal fired power plants,[1] or taking more than 200 million cars off the road for a year.[2]

6. EPA also projects that the standards will reduce health harming nitrous oxides by 550,000 tons and particulate matter by 32,000 tons over the lifetime of the vehicles sold under the program. These pollutants contribute to serious air quality problems around the nation and contribute to health risks including premature death.

[1] EPA Greenhouse Gas Equivalencies Calculator *available at* https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator
[2] *Id.*

Benefits of the Trailer Provisions

7. The Phase 2 program will improve efficiency and reduce greenhouse gas emissions from a broad variety of heavy-duty engines, vehicles, and trailers. According to EPA, in 2027, new truck engine efficiency will improve 4-5 percent, vocational trucks will be up to 24 percent more efficient and truck tractor efficiency will improve up to 25 percent – all compared to a 2017 truck. And trailers will see efficiency improvements up to 9 percent compared to a 2018 trailer, depending on the type of trailer. The trailer standards are performance-based for box-type trailers, and are based on the use of aerodynamic technologies and tire improvements. Non-box trailers are required to use automatic tire inflation systems or tire pressure monitoring systems, as well as low rolling resistance tires.

8. Tractor-trailers are responsible for approximately 60 percent of total greenhouse gas emissions and fuel consumption within the heavy-duty sector. Because trailer designs substantially influence the greenhouse gas emissions and fuel economy of the vehicle, the trailer provisions of the Phase 2 Rule are crucial to the reduction of emissions from this sector. 81 Fed. Reg. 73,571-572, 73,647.

9. EPA estimates that efficiency improvements to tractor-trailers combined will save 50 billion gallons of fuel and reduce greenhouse gas emissions

by more than 680 million metric tons (MMT) over the life of the program. 81 Fed. Reg. 73,508.

10. And EPA estimates that the trailer program alone will achieve emission reductions of nearly 11 million tons of carbon pollution.[3] As a result of the trailer standards, in 2027, the most ubiquitous trailer type—long box vans—could be up to 10 percent more efficient than today's trailers. *See* Policy Update: U.S. Efficiency & Greenhouse Gas Emission Regulations for Model Year 2018-2027 Heavy-Duty Vehicles, Engines, & Trailers at 4, Table 1, INT'L COUNCIL ON CLEAN TRANSP. (May 2016), *available at* http://www.theicct.org/sites/default/files/publications/US%20HDV%20Phase%202%20FRM_policy-update_08252016_vF.pdf.

Climate Harms

11. The burning of fossil fuels and the resulting CO_2 emissions pose a significant threat to human health and the environment. The latest scientific evidence concludes that the warming of the climate is unequivocal, that it is extremely likely that human influences have been the dominant cause of this warming since the mid-20th century; and that continued emissions of greenhouse gases will spur additional warming. *See e.g.*, Hartmann, D.L, *et al.,* Observations: Atmosphere and Surface, in Climate Change 2013: The Physical Science Basis,

[3] EPA, Tractor-Trailer Cost per Ton Values (August 2, 2016), Docket ID: EPA-HQ-OAR-2014-0827-2210.

Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., *et al*. eds] 166 *available at* http://www.ipcc.ch/report/ar5/wg1/.

12. Many climate impacts directly threaten human health. Certain types of extreme weather events—including heat waves, heavy downpours, floods, and droughts—have become more frequent or more intense due to climate change. *See e.g*., P.B. Duffy & C. Tebaldi, *Increasing Prevalence of Extreme Summer Temperatures in the U.S*., 111 CLIMACTIC CHANGE 487 (2012) *available at* https://link.springer.com/article/10.1007/s10584-012-0396-6. We have recently witnessed a series of hurricanes in Texas, Florida, and Puerto Rico that caused massive infrastructure damage and tragic loss of life. These hurricanes are classic examples of the types of weather events made more severe by climate change.

13. Data also show that warming is causing sea levels to rise, oceans to become more acidic, and snowpack to decline. And rising sea levels can threaten public safety through increased risk of coastal flooding and storm surge.

14. There is also a well-documented connection between rising temperatures and death as a result of climate change, especially among the elderly and people with chronic disease. *See e.g*, Shakoor Hajat & Tom Kosatky, Heat-related mortality: A Review and Exploration of Heterogeneity, 64 J.

EPIDEMIOLOGY & CMTY HEALTH 753 (2010) *available at* http://jech.bmj.com/content/64/9/753.

Climate Change Leads to an Increase in Ozone Formation

15. Climate change also contributes to deteriorating air quality by exacerbating ozone pollution and increasing the risk of wildfires, like the recent devastating one in Santa Rosa, California.

16. Ozone forms when volatile organic compounds (VOCs) and oxides of nitrogen (NO_X) react in the presence of heat and sunlight.

17. Recent studies demonstrate that human-caused climate change has the potential to increase ozone and may already be affecting the ozone concentrations in some areas of the United States. United States Global Change Research Program, The Impacts of Climate Change on Human Health in the Unites States: A Scientific Assessment, 3.2 *Climate Impacts on Outdoor Air Pollutants and Health*.

Exposure to Ground-Level Ozone Harms Human Health

18. A longstanding body of scientific research, including numerous EPA assessments, demonstrates that exposure to ozone harms human health. For example, EPA's most recent Integrated Science Assessment for Ozone concluded a causal relationship or likely causal relationship between short- and long-term ozone exposure and a broad range of harmful respiratory and cardiovascular effects in humans. *See* U.S. EPA. *2013 Final Report: Integrated Science Assessment of*

Ozone and Related Photochemical Oxidants at 1-5–1-8, Table 1-1 (EPA/600/R-10/076F). In addition, there is likely to be a causal relationship between short-term ozone exposure and non-accidental and cardiopulmonary-related mortality. *Id.*

19. Ozone is particularly harmful to people with respiratory diseases or asthma, children, older adults, and people who are active outdoors, especially outdoor workers. Ozone exposure is associated with respiratory morbidity such as asthma attacks, increases in hospital and emergency department visits, and loss of school days, as well as with premature mortality.

20. Even short-term exposure to ozone can have critical health implications. There is strong evidence of an association between out-of-hospital cardiac arrests and short-term exposure to ozone, as reported in Ensor et al., 2013. Katherine B. Ensor *et al*, *A Case-Crossover Analysis of Out-of-Hospital Cardiac Arrest and Air Pollution*, CIRCULATION (Mar. 18, 2013) *available at* http://circ.ahajournals.org/content/127/11/1192. The report illustrates that time scales of exposure up to three hours in duration and also at the daily level on the day of the event were significant. This evidence augments the growing body of literature demonstrating the short-term impacts of ozone pollution.

A Delay in the Phase II Trailer Standards Will Harm Public Health

21. A delay in the implementation of the 2018 trailer standards would allow additional emissions of CO_2. This increase in emissions would contribute to

a warming climate and climate change-related public health hazards, including extreme weather events, rising temperatures, air quality degradation and others.

I declare that the foregoing is true and correct.

Elena Craft, PhD

Dated October 11, 2017

Attachment 2

Declaration of Jack Gillis, Consumer Federation of America

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

TRUCK TRAILER MANUFACTURERS ASSOCIATION, INC., et al. Petitioners, v. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, et al. Respondents, and CALIFORNIA AIR RESOURCES BOARD, et al., Intervenors,	No. 16-1430 (consolidated with No. 16-1447)

DECLARATION OF JACK GILLIS

I, Jack Gillis, declare as follows:

1. I am the Director of Public Affairs for the Consumer Federation of America (CFA), and have extensive experience on issues relating to fuel efficiency, auto safety, auto buying, and consumer protection. In addition, I am the author of *The Car Book,* a consumer guide to car-buying published in cooperation with the Center for Auto Safety. I have participated in numerous rulemakings, regulatory negotiations, and legislative hearings on issues related to the fuel economy of both passenger vehicles and heavy-duty trucks. I submit this declaration on behalf of the CFA and in support of Public Health and Environmental Intervenors' opposition to the Truck Trailer Manufacturers Association ("TTMA") motion to stay.

2. CFA is a nonprofit association of more than 250 consumer groups based in Washington, D.C. that was founded in 1968 to advance the consumer interest through research, advocacy, and education. CFA has participated in dozens of efficiency rulemakings, regulatory negotiations, and legislative hearings involving large and small energy consuming durables, ranging from automobiles and trucks to air conditioners, furnaces, water heaters, computers, and lightbulbs. The CFA website www.consumerfed.org/issues/energy provides links to over 140 testimonies and reports published in the past ten years addressing energy efficiency.

3. During the recent rulemaking on the fuel efficiency of heavy-duty trucks, CFA identified the significant indirect costs associated with heavy-duty truck fuel consumption borne by American consumers. Household budgets bear the burden of truck fuel costs in the cost of goods and services they buy. In CFA's detailed comments on the Phase II Heavy Duty Truck rule, we compared this cost to the amount of money households pay for gasoline and electricity. On a per household basis, we estimated that the cost of fuel consumed by work trucks is equal to almost half as much as households spend on gasoline and almost as much as they spend on electricity. Reducing the energy consumption of medium- and heavy-duty trucks will reduce household expenditures by lowering the cost of goods and services needed by consumers. This will put more money back into the pocketbook of today's financially challenged households and more money back into the economy.

4. EPA and NHTSA estimate that over the lifetime of heavy-duty vehicles produced for sale in the U.S. during model years 2018–2029, the standards would

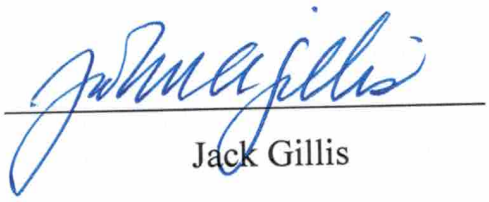
save about 75 billion gallons of fuel. This represents savings of over $200 billion. As fuel costs exceed the underlying estimates, this amount will only increase. In the highly competitive retail marketplace, where consumers spend most of their dollars, a significant amount of these fuel savings will be passed onto consumers.

5. While there is a cost to improving tractor and trailer fuel efficiency, the resulting fuel savings are over six times larger than this cost. At the rate at which big trucks use fuel, the payback period for this technology is projected to be less than two years for tractor trailers that are on the road for over 6 years.

6. Both the tractor and the trailer of heavy-duty truck combinations contribute to fuel consumption. Improving trailer fuel efficiency is not an afterthought, but a significant component of the vehicles' overall fuel consumption. The cost of eliminating or postponing reasonable requirements to improve trailer efficiency will ultimately be paid by consumers. Not only will they lose the benefit of trailer efficiency, but less efficient trailers will reduce the efficiency of the tractors that pull them. On the other hand, while improving the efficiency of the nation's trailer fleet will benefit many industry segments, the most important beneficiary will be the American consumer.

7. Class 7 and 8 tractor-trailers addressed by the trailer standards account for approximately 60 percent of the heavy-duty sector's fuel consumption (81 Fed. Reg. 73,480); and trailer improvements provide up to one-third of the total reduction achievable for Class 7 and 8 tractor-trailers (81 Fed. Reg. 73,516). Delaying or weakening fuel efficiency requirements on this critical element of America's shipping industry would be a very costly decision born by the American consumer.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed this 11th day of October, 2017, in Washington, District of Columbia.



Jack Gillis

Attachment 3

Declaration of Margo Oge, Former U.S. EPA Official

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

DECLARATION OF MARGO OGE

I, Margo Oge, declare as follows:

1. I am an engineer and was formerly an environmental official at the U.S. Environmental Protection Agency (EPA), with over thirty years of experience at the agency. I most recently served as Director of EPA's Office of Transportation and Air Quality, a position I held from 1994 until my retirement in 2012. While in that role, I led the development of EPA's greenhouse gas (GHG) emission standards for cars and trucks. From 1991 until 1994, I served as the Director of EPA's Office of Radiation and Indoor Air.

2. I hold a master's degree in engineering from the University of Massachusetts, Lowell. I also studied economics at George Washington University and leadership and management at the John F. Kennedy School of Government at Harvard University.

3. I have received Presidential Awards from both President Clinton and President George W. Bush. I have also received the California Air Resources Board's Haagen-Smit Clean Air Award, given to recognize individuals' significant achievements in air quality, and I have received numerous other environmental and industry awards in recognition of my work on environmental issues.

4. I currently serve on a number of boards and committees, including the boards of Delta Wing Technologies, the International Council on Clean Transportation, the Global Sustainability Council for Volkswagen Group, and the Union of Concerned Scientists. I also serve on the National Academy of Science (NAS) Board on Energy and Environmental Systems, the Department of Energy Advisory Committee on Hydrogen and Fuel Cells, and the NAS Advisory Committee on Climate Change Research.

EPA's Expertise on Vehicle Technology

5. During my time at EPA, the agency developed and deepened expertise and research capabilities regarding vehicle emissions to carry out its statutory authority to regulate air pollutant emissions from motor vehicles.

6. During that time, the agency engaged in extensive technical and engineering work to understand the health and environmental impacts of vehicle emissions, and to develop cost-effective emissions standards under section 202(a) of the Clean Air Act (CAA) to reduce those impacts.

7. Created in 1971, the National Vehicle and Fuel Emissions Laboratory (NVFEL) is a state-of-the-art test facility that conducts a range of emissions testing to support research, standards development, and compliance assessments. During

my tenure at EPA, it was supported by over 400 scientists and engineers.[1] The NVFEL houses a heavy-duty chassis dynamometer for testing trucks and buses. This dynamometer has one of the largest capacities of its kind in the western hemisphere.

8. EPA's expertise regarding vehicle technology is reflected in the volume and range of reports it issued detailing simulations and exploring pollution controls and other technological opportunities. Since 2004, EPA has authored or funded more than 50 studies regarding vehicle GHG emissions standards.[2] See, for example:

a. James J. Winebrake et al., Estimating the direct rebound effect for on-road freight transportation, 48 ENERGY POL'Y 252 (Sept. 2012), *available at* https://www.sciencedirect.com/science/article/pii/S0301421512004302.

b. Neal Fann et al., EPA, Characterizing the $PM_{2.5}$-related health benefits of emission reductions for 17 industrial, area and mobile emission

[1] U.S. GOV'T ACCOUNTABILITY OFF., GAO-10-336, Vehicle Fuel Economy: NHTSA and EPA's Partnership for Setting Fuel Economy and Greenhouse Gas Emissions Standards Improved Analysis and Should Be Maintained, at 23 (Feb. 2010), *available at* http://www.gao.gov/assets/310/301194.pdf.

[2] *See* EDF Comment submitted to EPA in response to "Request for Comment on Reconsideration of the Final Determination of the Mid-Term Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022–2025 Light-Duty Vehicles," at Attachment D (listing 54 EPA-authored or -funded studies conducted in 2004 or later). (Submitted Oct. 5, 2017 to Docket EPA–HQ–OAR–2015–0827.)

sectors across the U.S., 49 ENV'T INT'L 141 (Nov. 2012) , *available at* https://www.sciencedirect.com/science/article/pii/S0160412012001985.

c. EPA Office of Transportation & Air Quality, Population and Activity of On-road Vehicles in MOVES2014 (Jan. 2016), *available at* https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100O7VJ.pdf.

The Development of Vehicle GHG Emissions Standards at EPA

9. In my role at EPA as director of the Office of Transportation and Air Quality, I oversaw the development of the first and second phases of the light-duty GHG emissions standards, the first phase of the heavy-duty standards, and the initial planning stages for the second phase of heavy-duty standards, which were contemplated in the Phase 1 rulemaking. These were intensive processes, which required significant agency resources, and involved extensive stakeholder engagement with the automobile and truck manufacturing industries.

10. After the United States Supreme Court ruled in 2007 that GHGs are pollutants under the CAA,[3] in December 2009, the EPA issued a formal determination that GHGs endanger the public health and welfare, triggering the agency's section 202 responsibility to adopt emissions standards to reduce GHG

[3] *Massachusetts v. EPA*, 549 U.S. 497 (2007).

emissions from new motor vehicles. We then embarked on a lengthy process of stakeholder engagement, including meetings with the auto industry, air pollution control technology manufacturers, the public sector, the public health and environmental community, consumer groups, labor, and many others to ensure that any emissions standards would be rigorous and durable.

11. We continued this practice of extensive engagement and transparency in developing each phase of the vehicle emission standards during my time as director of OTAQ, and I understand that the agency continued this practice for the development of the heavy-duty Phase 2 standards.

12. The process I led in developing and implementing light-duty vehicle emissions standards was based on a similar collaborative process. As part of the Obama Administration's broader efforts to support the auto industry with a bailout package for General Motors and Chrysler, we worked with the industry on standards that manufacturers and autoworkers publicly supported. The auto industry rebounded, with hundreds of thousands of new jobs added since the low point of the recession and vehicle exports and sales up. The Phase 2 light-duty standards were finalized in 2012, in conjunction with NHTSA, for MY2017-2021 and MY2022-2025 passenger vehicles. Again, these standards had broad stakeholder support.

13. The Phase 1 GHG emissions standards for MY2014-18 heavy-duty vehicles, issued in September 2011, were the product of collaboration between the agency and a broad coalition of stakeholders, including the trucking industry, states, labor, and health and environmental groups, among others. After President Obama announced the program, essentially all of the affected heavy-duty truck and engine manufacturers sent a letter to the agency in support of a national program for GHG emissions reductions based on common principles. The result of that collaboration, the Phase 1 standards, was premised on technologies that were already in production on some vehicles, and were easily adaptable to the broader fleet.[4]

14. Though I was no longer at EPA during the rulemaking process for the Phase 2 standards, I followed the rulemaking closely and have reviewed the final rule and other key rulemaking documents. In my expert opinion, the Phase 2 standards for heavy-duty vehicles, issued in October 2016, were also developed based on rigorous scientific and engineering analysis, and I am aware that the agency conducted extensive stakeholder engagement. Based on my review of stakeholder comments, I believe the Phase 2 standards earned support from the trucking industry. Significantly, the American Trucking Associations recognized

[4] Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles, 76 Fed. Reg. 57,106, 57,362 (Sept. 15, 2011) [hereinafter HD GHG Rule Phase 1].

the opportunity for cost-savings with improved fuel economy that the standards would deliver.[5]

15. EPA's decision with the Phase 2 rulemaking to include standards for trailers also received broad support from the freight industry and fleets. And major trailer manufacturers expressed a willingness and ability to comply.[6]

16. The light-duty and heavy-duty standards have achieved reductions in GHG emissions in conjunction with healthy and growing auto and trucking industries and consumers and businesses benefiting from more efficient vehicles. Though this approach has delivered important benefits, the transportation sector remains a significant source of dangerous climate pollution and additional actions are needed to further reduce emissions.

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[5] *Broad Support Across America: Phase II Greenhouse Gas and Fuel Economy Standards for Freight Trucks and Buses*, ENVIRONMENTAL DEFENSE FUND, at 3, *available at* https://www.edf.org/sites/default/files/content/positive_quotes_on_final_hd_phase_2_rulemaking_10.24.16_final.pdf (compiling statements in support of Rule).

[6] *See* comments by Wabash National Corporation, Docket ID #1242; TransportTopics, Trailer OEMs Are First Group to Face New GHG Mandate, August 22, 2016, *available at* http://www.ttnews.com/articles/trailer-oems-are-first-group-face-new-ghg-mandate (quoting Richard Giromini, CEO of Wabash National Corp.as saying, "Our goal in this process was to work collaboratively with the agencies to simplify compliance while maximizing environmental benefits and overall cost savings for the fleets. I think we've achieved that . . . Wabash will continue to pursue new technologies and develop new aerodynamic solutions to further improve fuel efficiency, reduce the operating costs of our customers and work to develop practical solutions that benefit all stakeholders."); *see also* American Trucking Associations, *ATA Concerned Reopening of GHG Phase 2 Rule Could Undermine Federal Uniformity*, (Aug. 18, 2017), *available at* http://www.trucking.org/article/%20ATA%20Concerned-Reopening-of-GHG-Phase-2-Rule-Could-Undermine-Federal-Uniformity.

EPA's SmartWay Program Set the Stage for the Trailer Standards and Demonstrated Their Feasibility

17. While at EPA, I oversaw the creation of the SmartWay program. Launched in 2004, SmartWay is a voluntary public-private program in which members of the freight industry work with EPA to identify and deploy technologies that will increase fuel efficiency, provide cost savings, and reduce GHG emissions from freight transport. SmartWay has programs across the freight sector, including truck, rail, barge, and air carriers. Currently, approximately 3,500 companies participate in the program.

18. Since its inception in 2004, SmartWay has helped its participants avoid emitting 94 million tons of air pollution.[7] This includes carbon dioxide, a major contributor to climate change, as well as nitrogen oxides and particulate matter, which can have adverse respiratory and cardiovascular effects when inhaled. Trucking companies working with SmartWay have saved $27.8 billion in fuel costs since the program began.[8]

19. The SmartWay program also provided EPA insight into and experience with cost-effective ways to reduce fuel consumption and air pollution emissions. Through SmartWay, EPA has verified multiple technologies to make

[7] *SmartWay Program Highlights*, U.S. EPA SMARTWAY (Apr. 2017), *available at* https://www.epa.gov/sites/production/files/2017-04/documents/420f17012.pdf.
[8] *Id*.

heavy-duty tractor-trailers more efficient and reduce the GHG emissions that result from their use in freight operations.

20. Through the introduction and promotion of these technologies, SmartWay provided building blocks for EPA's trailer standards. The pathways to compliance in the standards use the same devices and technologies that have been part of SmartWay for over a decade and have undergone rigorous testing to ensure they are effective.

21. For example, SmartWay verifies aerodynamic devices for trailers that are added to the rear, sides, or underbodies of trailers to reduce drag and improve fuel efficiency. SmartWay groups these into performance bins of 1 percent, 4 percent, 5 percent, or 9 percent or more fuel savings over traditional trailers. A designated SmartWay trailer must meet a threshold of at least 5 percent fuel savings, while a SmartWay Elite trailer must meet a 9 percent fuels savings threshold. Manufacturers may meet these thresholds through multiple pathways—for example, a manufacturer seeking to meet the 5 percent SmartWay threshold may use one single device from the 5 percent bin, or it could use a combination of devices from the 1 percent and 4 percent bins.[9]

[9] U.S. EPA, No. EPA-420-B-15-021, *USEPA SmartWay Trailer and Aerodynamic Device Program Policy Manual* (Feb. 2015), at 9-10, *available at* https://www.epa.gov/sites/production/files/2016-03/documents/420b15021.pdf.

22. The Phase 2 trailer standards also anticipate the use of aerodynamic devices for compliance. Like SmartWay, the standards group these technologies into bins that reflect increasing levels of aerodynamic improvements; in the case of the standards, there are seven bins. In model year 2018, long box vans covered under the standards must deploy aerodynamic devices consistent with Bin III, which will generally mean the deployment of one single aerodynamic device.[10] Thus, compliance with the model year 2018 standards are predicated on the use of aerodynamic technologies already available and incentivized through SmartWay and other voluntary programs.[11]

23. SmartWay also verifies low rolling resistance (LRR) tires, which reduce energy loss as a tire rolls, improving fuel efficiency. A SmartWay-verified LRR tire must have a coefficient of rolling resistance (CRR) of 5.1 kg/metric ton. There are currently many tires on the market with this CRR value, and in fact, a

[10] *See* Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2, 81 Fed. Reg. 73,478, 73,651, 73,659 (Oct. 25, 2016) [hereinafter HD GHG Rule Phase 2].

[11] *See, e.g.*, Trailer Body Builders, "Great Dane sponsoring efficiency road show," (September 20, 2017), available at: http://m.trailer-bodybuilders.com/trailers/great-dane-sponsoring-efficiency-road-show (quoting Great Dane Vice President Rob Ulsh as saying, "At Great Dane, we are constantly working to develop innovative solutions to help our customers achieve maximum fuel efficiency, which is why we are proud to sponsor Run on Less . . . We wanted to be a part of this unique event to help bring awareness to the technologies that are currently available, while also helping to incite a greater drive within our industry to enhance vehicle efficiency.").

2014 survey of TTMA members indicated that about 85 percent of box vans sold had SmartWay tires.[12]

24. The trailer standards also require use of LRR tires to meet efficiency goals. In model year 2018, box vans covered by the standard must have LRR tires with a CRR of 5.1 kg/metric ton, the current SmartWay standard. Later model years will be expected to have tires with lower CRRs (i.e., greater fuel efficiency). Non-box trailers and non-aero trailers have more modest CRR requirements.

EPA Developed the Trailer Standards through a Coordinated Process that Factored in Stakeholder Feedback

25. As a voluntary program, however, SmartWay has not resulted in the use of these fuel efficient technologies in many of the applications where additional GHG reductions can be achieved. EPA determined that these necessary reductions could be achieved through cost-effective standards applicable to trailers.

26. EPA's regulation of trailers can be traced back to Phase 1 of the heavy-duty rulemaking, which culminated in a final rule issued in 2011. The Phase 1 rulemaking set GHG emissions standards and fuel efficiency standards for heavy-duty vehicles and engines for model years 2014 through 2018. At that time, we considered adopting standards for trailers and believed that cost-effective

[12] *Id*. at 73,652.

improvements could be made to trailer designs to increase the fuel efficiency and reduce the GHG emissions from tractor-trailers.

27. We also recognized that trailer manufacturers would be newly regulated and had limited experience complying with EPA regulations.[13] To assess whether regulating trailers would be appropriate at that time, we solicited comments on the feasibility of such regulation. The comments demonstrated that technologies to improve trailer fuel efficiency and reduce emissions were already available.[14] And we were encouraged by the freight sector and others in the industry to include trailers.[15] However, in response to commenters' concerns that a number of technical issues remained to be resolved, in particular with respect to testing procedures, we determined that trailer regulation should be postponed to allow time to convene a Small Business Regulatory Enforcement Fairness Act (SBREFA) panel to engage with small business stakeholders.[16] While action was

[13] HD GHG Rule Phase 1, *supra* note 4, at 57,362.
[14] *Id*. at 57,362.
[15] Comment submitted by David Kayes, Daimler Trucks North America, Document ID: EPA-HQ-OAR-2010-0162-1819 at 107; Comment submitted by Tom Roller, ecoFridge, Document ID: EPA-HQOAR-2010-0162-2351 at 2 ("Failure to extend these regulations to include trailers and TRUs [Transportation Refrigeration Units] ignores a significant portion of these vehicles' performance and reduces the beneficial impact of engine and vehicle regulations."); Comment submitted by Mindy S. Lubber, President, Ceres on behalf of Business for Innovative Climate and Energy Policy (BICEP), Document ID: EPA-HQ-OAR-2010-0162-2165. *See also* EPA Response to Comments Document (August 2011), EPA-HQ-OAR-2010-0162-3635 at 12-1.
[16] *Id*. at 57,362.

deferred, we did commit in the Phase 1 final rule to move forward to develop a regulatory program for trailers.[17]

28. After the Phase 1 rulemaking, in preparation for its regulation of trailers, it is my understanding that EPA did extensive testing and emissions modeling to determine cost-effective ways to reduce emissions attributable to trailers. EPA used the Greenhouse Gas Emissions Model (GEM) for Medium- and Heavy-Duty Vehicle Compliance, which is a vehicle simulation computer program that combines various vehicle inputs, laws of physics, and assumptions to predict vehicle performance.[18] Based on its GEM testing and analysis, EPA determined that application of aerodynamic technologies, tire technologies (including both LRR tires and tire pressure systems), and weight reduction was feasible, would be cost effective, and would not significantly affect the existing manufacturing assembly line.

29. I am aware that EPA also worked with a large number of diverse stakeholders in finalizing the Phase 2 rulemaking, as the agency did in previous rulemakings. The agency received over 200,000 public comments and held over 400 meetings with stakeholders, including truck, trailer, and component manufacturers, trucking fleets, dealerships, state air quality agencies, non-

[17] HD GHG Rule Phase 1 at 57,111; EPA Response to Comments Document (August 2011), EPA-HQ-OAR-2010-0162-3635 at 12-19 to 12-20.
[18] HD GHG Rule Phase 2, *supra* note 10, at 73,538.

governmental organizations, labor, and others.[19] The trailer manufacturing industry was heavily engaged in this process and met with EPA multiple times prior to the release of the final trailer standards. EPA met with TTMA six times during the pre-proposal period between January of 2013 and May of 2015, and at least an additional five times after the proposal was issued in June 2015.[20] EPA also held numerous other meetings with individual trailer manufacturers and other heavy-duty industry groups.[21] EPA also held two public hearings to obtain additional feedback on the heavy-duty Phase 2 rule.[22] As a result of these discussions, EPA designed a certification process that is cost effective and flexible.

The Trailer Standards Contain Multiple Flexibilities to Ease Manufacturer Compliance

30. I have reviewed the Phase 2 standards and supporting documents and see that EPA responded to stakeholder feedback by crafting standards that give trailer manufacturers adequate lead time to come into compliance. The standards

[19] *Id*. at 73,481.
[20] EPA Stakeholder Meeting Log, Docket ID # EPA-HQ-OAR-2014-0827-0702; Heavy-Duty Phase 2 Rule Meeting Log, Docket ID # EPA-HQ-OAR-2014-0827-2228.
[21] EPA Stakeholder Meeting Log, Docket ID # EPA-HQ-OAR-2014-0827-0702; Heavy-Duty Phase 2 Rule Meeting Log, Docket ID # EPA-HQ-OAR-2014-0827-2228. Between January 2013 and July 2016, EPA also communicated by phone and in meetings with the American Trucking Association at least 11 times; with Wabash National Corporation at least 20 times; with Great Dane LLC at least four times; with Small Entity Representatives (small business trailer manufacturers designated to represent their peers' interest to the agency) at least three times; with the National Trailer Dealers Association at least twice; with the Heavy Duty Fuel Efficiency Leadership Group, an alliance of engine manufacturers and large fleet operators; and with the Owner-Operator Independent Drivers Association.
[22] HD GHG Rule Phase 2, *supra* note 10, at 73,481.

phase in gradually, and additional flexibilities are offered to allow for smooth implementation.

31. The Phase 2 rulemaking was finalized in August 2016 and published in the Federal Register in October 2016, with the first compliance deadline set for model year 2018. Thus, EPA gave trailer manufacturers 16 months from the date the pre-publication version of the rule was released, and 14 months from the publication date to prepare for and comply with the new standards. Moreover, the trailer industry has known since the Phase 1 proposal in 2010 that EPA was planning to adopt trailer standards.

32. The lead time that EPA provided for compliance with the trailer standards reflects the already extensive penetration of the necessary technologies, which companies have adopted through voluntary programs including SmartWay, and to comply with state-level trailer standards in California. Indeed, the 2018 trailer standard merely requires that the same technologies that would achieve SmartWay verification be further expanded across the trailer fleet.

33. EPA also eased compliance by requiring only a gradual phase-in of the required technologies. In model year 2018, the agencies project that manufacturers of long box vans will meet the standards by adopting at least one aerodynamic device (e.g., side skirts or a boat tail), LRR tires with a CRR of 5.1 kg/ton or lower (i.e., SmartWay-level tires), and the use of an automatic tire

inflation system.[23] Short box vans are expected to use the tire-related technologies starting in 2018, but aerodynamic improvements are not needed until model year 2021.[24] These standards are consistent with the requirements for a trailer to be SmartWay-certified and are therefore eminently achievable for the industry in the initial years of the Phase 2 program.

34. The trailer standards include other flexibilities such as allowances for non-complying trailers in the initial years of the program. For model years 2018 through 2026, 20 percent of trailer manufacturers' production (up to a total of 350 units) does not have to be compliant with the trailer standards.[25] EPA adopted this provision in response to trailer manufacturer concerns about having to meet the standards for all of their trailers. This transitional allowance is intended to ease compliance for manufacturers.

35. As another flexibility, any device manufacturer that attains SmartWay verification for a device prior to January 1, 2018 is eligible to submit its previous SmartWay-verified data to EPA's Compliance Division for pre-approval, provided their test results come from one of SmartWay's 2014 test protocols. This is especially helpful for small businesses with more limited administrative resources.

[23] *Id*. at 73,659.
[24] *Id*.
[25] *Id*. at 73,674–75.

36. In fact, the standards contain multiple flexibilities designed to accommodate manufacturers that have less than 1,000 employees and therefore qualify as small businesses under SBREFA. During the Phase 2 rulemaking process EPA convened a Small Business Advocacy Review (SBAR) Panel, as required by SBREFA. EPA concluded that 147 of the 178 trailer and tank manufacturers are small businesses.[26]

37. I understand that, based on the extensive input from the small business representatives, EPA designed the standards keeping the majority small-business nature of the trailer manufacturing industry in mind. For example, EPA excluded many types of non-box trailers from the rule altogether, so that businesses manufacturing these trailers have no regulatory requirements at all—this reduced the number of small business manufacturers covered by the rule from 147 to only 74 companies.[27] For covered non-box trailers, EPA adopted design standards only, which manufacturers can meet by installing tire technologies. These tire technologies do not require the trailer manufacturer to do any testing, and this further reduces the regulatory burden on small businesses. Similarly, EPA allowed small box van manufacturers to choose pre-approved aerodynamic data that will save them the burden of performing testing.

[26] *Id*. at 73,677.
[27] *Id*.

38. Finally, EPA allowed all small business trailer manufacturers a one-year delay in implementation of the program, so that they do not need to meet the initial year standards until model year 2019, instead of 2018. This extra year will provide small businesses more time to make staffing and resource adjustments to comply with the standards.

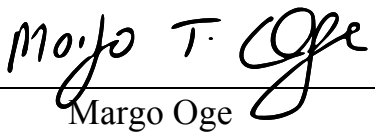
The Trailer Standards Are Critical to Addressing the Transportation Sector's Impact on Climate Change

39. EPA's mission is to protect human health and the environment. The Office of Technology and Air Quality within EPA supports that mission by working to reduce harmful air pollution from the transportation sector to improve air quality and protect public health and welfare. EPA recognizes that standards that help to drive additional adoption of fuel saving technologies are not always initially embraced, especially for a newly regulated segment of an industry. That is why EPA coordinated closely with industry stakeholders in Phase I, and I believe it also did so throughout the Phase 2 rulemaking process to make sure the program was as simple and efficient as possible. The transportation sector has just surpassed the power sector as the nation's largest source of GHG emissions,[28] and heavy-duty vehicles account for nearly a quarter of all transportation sector

[28] EIA, Today In Energy, https://www.eia.gov/todayinenergy/detail.php?id=30712&src=email (last visited July 17, 2017).

emissions.[29] By making tractor-trailers more efficient and greatly reducing fuel consumption and GHG emissions from the trucking sector, the trailer standards will have a significant role in reducing harmful GHG pollutants nationwide.

I declare that the foregoing is true and correct.



Margo Oge

Dated October 12, 2017

[29] Energy Information Agency, *Annual Energy Outlook* (2017) Table A-19. These estimates do not include upstream emissions.

Attachment 4

Declaration of Michael Walsh, Independent Technical Consultant

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

DECLARATION OF MICHAEL P. WALSH

I, Michael Walsh, declare as follows:

1. I am a mechanical engineer who has spent nearly 50 years working on issues related to motor vehicle pollution. I received a Bachelor of Science degree from Manhattan College in 1966 and pursued graduate study at Princeton University from 1969 to 1970.

2. I am currently an independent technical consultant working with governments and industries around the world, providing recommendations on effective strategies to reduce pollution associated with the transportation sector. Previously, I directed motor vehicle pollution control efforts for both the City of New York and for the U.S. EPA. I also co-chaired the EPA's Mobile Sources Technical Advisory Committee for 14 years.

3. During my tenure at EPA, I served as Deputy Assistant Administrator for Mobile Source Air Pollution Control. In that role, I led the development of air pollution control standards applicable to medium- and heavy-duty vehicles, including the development of a more realistic emissions testing procedure as well as the world's first diesel particulate standard.

4. After leaving EPA, I became an independent consultant advising governments and industry on motor vehicle pollution control issues, including issues related to heavy-duty vehicles. I helped found the International Council on Clean Transportation (ICCT), and I continue to advise its Board. ICCT is an organization founded to provide technical and scientific analysis to environmental regulators around the world to help improve the environmental performance of on-road, off-road, marine, and air transportation sources.

5. I have been involved in numerous other activities as well. These include serving as a consultant to the U.S. Senate Committee on Environment and Public Works during the development of the 1990 Clean Air Act Amendments; a member of the Committee for the Study of Public Policy for Surface Freight Transportation, convened by the National Research Council's Transportation Research Board; a member of the National Academy of Engineering Panel on the Future of the Automobile in China; and a member of the Independent Review Panel for EPA's 2007 Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements.

6. I have been invited to testify before the U.S. House of Representatives and have written several technical papers regarding heavy-duty vehicle emissions. I have also authored papers and made presentations regarding the transportation sector's significant contribution to climate change. I have contributed to the work

of the Intergovernmental Panel on Climate Change (IPCC) and was recognized by the IPCC President in association with the 2007 Nobel Peace Prize as an individual who has "contributed substantially to the work of the IPCC over the years."

7. I have received EPA's Lifetime Individual Achievement Award and the California Air Resources Board's Haagen-Smit Award, given in recognition of significant career accomplishments in the air quality field. In 2005, I was selected as a MacArthur Fellow for my work designing and implementing innovative, cost-effective programs to improve air quality across the globe. In 2009, I received the Silver Magnolia Award from the City of Shanghai, given to foreigners in recognition of their contributions to Shanghai's development, and in 2010, I received the Friendship Award from China, which is the country's highest award for international experts.

HEAVY-DUTY VEHICLES EMIT A LARGE AND GROWING AMOUNT OF GREENHOUSE GAS POLLUTION.

8. The most recent data from the Energy Information Administration (EIA) shows that the transportation sector has just surpassed the power sector as the nation's largest source of greenhouse gas emissions.[1] Medium- and heavy-duty trucks and buses are a significant contributor to overall transportation sector greenhouse gas emissions, emitting more than 400 million tons of climate pollution

[1] Perry Lindstrom, *U.S. Energy-Related CO2 Emissions Fell 1.7% in 2016*, U.S. Energy Info. Admin. (Apr. 10, 2017), https://www.eia.gov/todayinenergy/detail.php?id= 30712&src=email.

annually and accounting for nearly a quarter of all transportation sector greenhouse gas emissions.[2]

9. Absent strong standards to reduce these emissions, medium- and heavy-duty vehicles are projected to emit an additional 1.1 billion tons of climate pollution over the life of the trucks and trailers regulated.[3]

THE HEAVY-DUTY TRACTOR AND TRAILER ARE DESIGNED AND OPERATED AS AN INTEGRATED VEHICLE.

10. From a design, engineering, and operational standpoint, heavy-duty tractors and trailers function as an integrated vehicle, designed to haul cargo together. For instance, heavy-duty tractors have engines that are sized and optimized to haul a cargo-loaded trailer and often have aerodynamic roof devices designed with trailer height in mind to reduce tractor-trailer fuel consumption. Trailers are likewise designed to be used in tandem with a tractor, and indeed, the sole purpose of the trailer is to be pulled behind a tractor.

11. As EPA explained in the final Phase 2 rulemaking, trailers are not merely coupled with tractors for occasional use; they are one-half of the

[2] U.S. Energy Info. Admin., *Annual Energy Outlook 2017*, Table A19 (2017), https://www.eia.gov/outlooks/aeo/index.php. These estimates do not include upstream emissions.

[3] U.S. EPA, EPA-420-F-16-044, EPA and NHTSA Adopt Standards to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles for Model Year 2018 and Beyond 1 (2016) [hereinafter EPA and NHTSA Adopt Standards].

tractor-trailer vehicle and are essential to the commercial function of that vehicle.[4] Indeed, operating a tractor without a trailer is inefficient, costly, and potentially dangerous, and companies endeavor to eliminate any such operation.

TRAILERS ACCOUNT FOR SIGNIFICANT EMISSIONS AND EPA'S TRAILER STANDARDS WILL DELIVER IMPORTANT GREENHOUSE GAS REDUCTIONS AND FUEL SAVINGS.

12. This integration is clear when it comes to fuel efficiency and greenhouse gas emissions: trailer design can contribute substantially to tractor-trailer fuel efficiency and therefore contribute a significant portion of the tractor-trailer greenhouse gas emissions.

13. Given the substantial greenhouse gas emissions associated with trailers and the readily available technologies to reduce those emissions, discussed more fully below, EPA adopted trailer standards in the Phase 2 Heavy-Duty Rule. EPA projects that full implementation of the trailer standards in model year (MY) 2027 will achieve CO_2 emissions reductions of up to 9 percent compared with the baseline scenario in which no regulatory program is implemented.[5] Moreover, depending on the types of tractor and trailer involved, EPA estimates that implementing controls to improve the efficiency of trailers can result in

[4] Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2, 81 Fed. Reg. 73,478, 73,516 (Oct. 25, 2016) [hereinafter HD GHG Phase 2 Rule].
[5] *Id.* at 73,648.

approximately one-third of the total greenhouse gas emissions reductions achievable for the tractor-trailer as a whole.[6]

14. Compliance with the trailer standards will also deliver financial benefits to purchasers of trailers in the form of fuel savings. In total, the trailer standards will save operators billions of dollars in fuel costs.[7]

TRAILER STANDARDS APPLY ONLY TO CERTAIN TRAILER TYPES, FOR WHICH APPLICATION OF TECHNOLOGIES CAN SECURE GREENHOUSE GAS REDUCTIONS.

15. The trailer standards recognize there is variability in the trailer market; thus, the standards apply only to certain trailer types whose design characteristics facilitate application of cost-effective efficiency technologies. The rule divides trailers into two general categories: box vans and non-box trailers.

16. Box vans, the most ubiquitous type of trailers representing approximately 70 percent of the market,[8] have an enclosed cargo space that is permanently attached to the trailer chassis. These trailers, especially long box vans (i.e., vans longer than 50 feet), tend to be used a greater percentage of the time in long-haul applications such that technologies that save fuel and reduce greenhouse gas emissions can deliver even greater benefits.

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[6] *Id.* at 73,516 n.89.
[7] EPA and NHTSA Adopt Standards, *supra* note 3, at 1.
[8] U.S. EPA & Nat'l Highway Traffic Safety Admin., EPA-420-R-16-900, Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles – Phase 2: Regulatory Impact Analysis 1-3 (2016), Docket ID: EPA-HQ-OAR-2014-0827-2345 [hereinafter HD GHG Phase 2 RIA].

17. EPA has subcategorized box vans into those that are greater than 50 feet long (long box vans) and those that are 50 feet and shorter (short box vans). Box vans of either length with self-contained cooling and/or heating systems are considered refrigerated vans, and vans without such systems are considered dry vans. The agency recognized that because box vans shorter than 50 feet generally travel shorter distances at lower speeds, these trailers would not benefit from fuel saving technologies to the same degree as longer vans, and so the agency adopted less stringent standards for short box vans.[9] Similarly, EPA adopted less stringent standards for box vans with equipment that may inhibit application of aerodynamic technologies.[10]

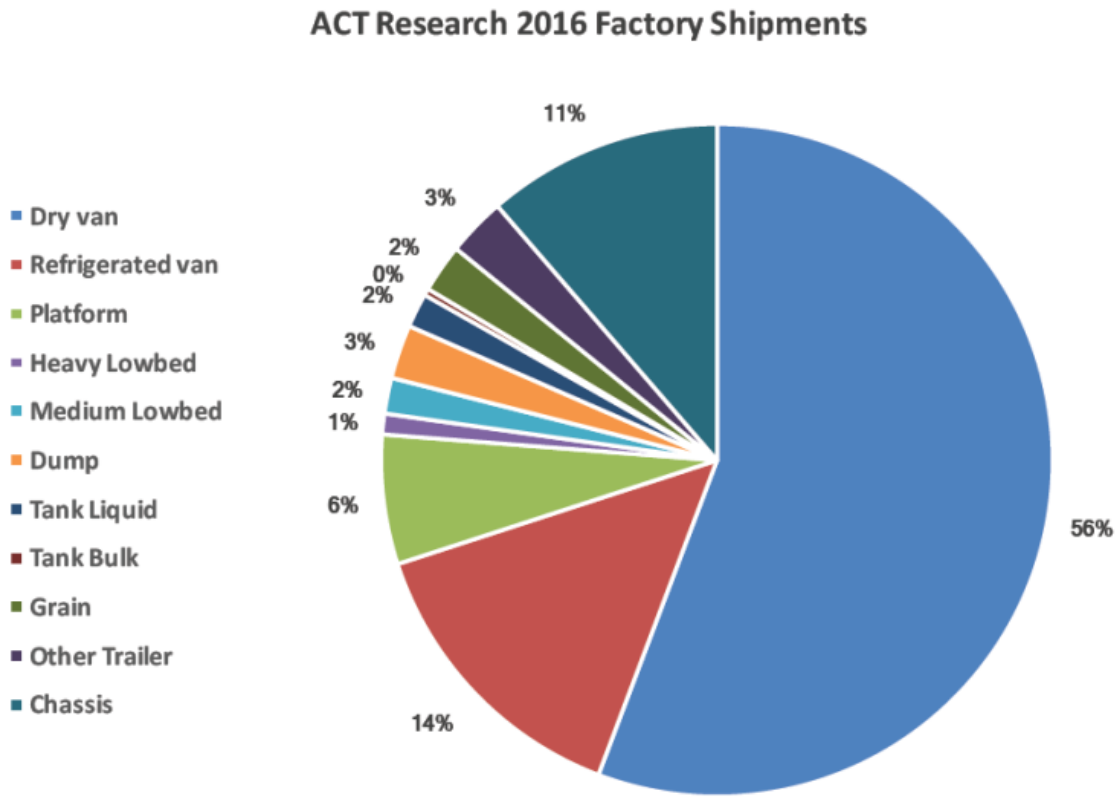
18. The trailer standards consider all trailers that are not box vans to be non-box trailers, and include standards for only three specific types of these trailers: tankers, flatbeds, and container chassis. Together, these trailers make up approximately 16 percent of 2016 trailer sales.[11] EPA determined that applying trailer efficiency technologies to these trailers would deliver significant greenhouse gas emissions reductions.

19. The standards exclude all other types of non-box trailers based on their unique physical characteristics and intended uses. EPA recognized that these

[9] HD GHG Phase 2 Rule, *supra* note 4, at 73,645.
[10] *Id.* at 73,645–46.
[11] Calculation based on 2016 data obtained from Americas Commercial Transportation Research Co. (ACT Research).

features might not be compatible with some of the technologies required by the rulemaking.[12] EPA also excluded trailers that are intended to haul very heavy loads, even if those trailers are of a type that would otherwise be regulated, such as box vans.[13] Figure 1, below, shows the relative percentage of different trailer types based on 2016 data from ACT Research.

Figure 1[14]



[12] HD GHG Phase 2 Rule, *supra* note 4, at 73,646.
[13] *Id.* at 73,647.
[14] Calculations based on 2016 data obtained from ACT Research.

THE TRAILER STANDARDS ARE BASED ON PROVEN, LOW-COST, HIGHLY EFFECTIVE TECHNOLOGIES.

20. Trailer manufacturers can meet the 2018 standards through the use of a combination of different types of technologies that improve the efficiency of trailers and therefore reduce greenhouse gas emissions from the tractor-trailer: aerodynamic technologies such as side skirts and tails; tire technologies such as lower rolling resistance (LRR) tires, automatic tire inflation systems (ATIS), and tire pressure monitoring systems (TPMS); and weight reduction technologies, or the use of lighter weight components.

21. These proven, off-the-shelf technologies are in wide-spread use and trailer manufacturers have been deploying them for many years. As described above, EPA projects that the mix of technologies reflected in the trailer standards can secure anywhere from 2 to 9 percent reduction in greenhouse gas emissions.[15] Indeed, trailer manufacturer Wabash National Corporation (Wabash) already offers a trailer that provides over a 10 percent improvement in fuel economy.[16] And the Department of Energy's Super Truck Program is helping drive even greater trailer

[15] HD GHG Phase 2 Rule, *supra* note 4, at 73,648.
[16] Press Release, Wabash Nat'l Corp., Wabash National Expands Trailer Aerodynamic Solutions Portfolio with Aerofin™ XL Tail Device (Dec. 14, 2015), http://news.wabashnational.com/wabash-national-expands-trailer-aerodynamic-solutions-portfolio-with-aerofin-xl-tail-device/.

efficiency improvements.[17] Figure 2, below, summarizes how the trailer standards deploy these technologies, and subsequent paragraphs discuss each technology in more detail.

Figure 2: Trailer Standards and Technology Requirements[18]

Trailer type	Technologies included in the regulation
Box-type trailers of all sizes (both dry and refrigerated trailers)	• Aerodynamic devices, • Low rolling resistance tires • Tire pressure management systems • Weight reduction via material substitution (optional)
Non-box trailers	• Low rolling resistance tires • Tire pressure management systems

22. Box Vans. For box vans, manufacturers can meet the performance-based trailer standards by applying a combination of the technologies described above. To achieve the standards, manufacturers do not have to use each of the technologies listed, but can choose among them.

23. First, box van manufacturers may use technologies that reduce aerodynamic drag, including aerodynamic panels known as fairings or skirts that can be applied to the front, rear, or undersides of trailers. These technologies smooth the transition of airflow around, beneath, and beyond the trailer, reducing

[17] *See* Nat'l Acads. Of Scis., Eng'g, & Med., *Review of the 21st Century Truck Partnership, Third Report* (2015), https://www.nap.edu/catalog/21784/review-of-the-21st-century-truck-partnership-third-report.
[18] Ben Sharpe, *Truck Trailers in the U.S.: Leading from Behind*, Int'l Council on Clean Transp. (Aug. 18, 2016), http://www.theicct.org/blogs/staff/US-truck-trailers-leading-from-behind.

drag and thereby reducing fuel consumption and greenhouse gas emissions. Trailer fairings and skirts are commercially available and in the case of box vans, these technologies are already in widespread use, with increasing adoption and decreasing costs over the past decade. Figure 3, below, shows a side skirt and boat tail installed on a 53-foot box van, used for hauling cargo on highways.

Figure 3: Aerodynamic Side Skirt and Boat Tail

24. Full aerodynamic requirements apply to box vans except for those vans that have work-performing equipment on the underside and/or rear of the trailer that would interfere with the installation of aerodynamic technologies. For these types of trailers, a separate "partial-aero" or 'non-aero" standard applies.[19]

25. Second, box van trailer manufacturers can likewise use "lower rolling resistance" (LRR) tires to comply with the performance standards. As compared to higher rolling resistance tires, LRR tires lose less energy as they roll, leading to

[19] HD GHG Phase 2 Rule, *supra* note 4, at 73,643.

greater fuel efficiency and fewer greenhouse gas emissions. The performance standards for box vans assume that these trailers can meet a coefficient of rolling resistance (CRR) value of 5.1 kg/ton or better in 2018, which is achievable with currently available technology.[20]

26. Many trailers are already equipped with these LRR tires. In fact, in an October 2014 letter to EPA, the Truck Trailer Manufacturers Association (TTMA) indicated that according to its members, about 85 percent of box vans sold at that time had tires that met EPA's SmartWay standard,[21] which applies to tires with a CRR value of 5.1 kg/ton or better.

27. Third, manufacturers may reduce greenhouse gas emissions from trailers by installing systems designed to monitor and in some cases correct for low tire pressure. Underinflated tires are inefficient; they have higher rolling resistance, which leads to increased load on the engine and in turn greater fuel consumption and greenhouse gas emissions. EPA's performance standards for box vans assume that trailer manufacturers can install either of two different technologies to prevent sustained driving on underinflated tires: tire pressure monitoring systems (TPMS) and automatic tire inflation systems (ATIS). Both TPMS and ATIS alert the driver when tire pressure drops below a set level; ATIS

[20] *Id.* at 73,652.
[21] *Id.*; *see also* Letter from John Freiler, Eng'g Manager, Truck Trailer Mfrs. Ass'n, to Tad Wysor, EPA Phase 2 HD GHG Trailer Team 2 (Oct. 16, 2014), Docket ID: EPA-HQ-OAR-2014-0827-0146 [hereinafter TTMA Letter].

go a step further and use the trailer's air brake systems to supply air back into the tires. Both systems are currently commercially available and widely in use.

28. Finally, though the trailer standards do not require manufacturers to reduce trailer weight, EPA did provide weight reduction as a compliance flexibility that manufacturers can choose to meet the standards. Weight reduction can be accomplished by replacing trailers' structural components, such as roof posts, side posts, and floor sections, with lighter weight options, or by using lighter weight wheels and tires. Many trailer manufacturers already offer lighter weight structural components that represent an additional compliance flexibility.

29. Non-Box Trailers. For non-box trailers, EPA established design standards that require deployment of certain tire technologies. Aerodynamic technologies are not required for non-box trailers, due to the use and design features of these trailers.[22] For covered non-box trailers, the standards require trailer manufacturers to install low rolling resistance tires that meet a less stringent CRR of 6.0 and likewise require installation of tire inflation systems.[23]

30. These technologies are low-cost. According to EPA's estimates, in model year (MY) 2018, a 53-foot box van without any work-performing special components that may limit incorporation of full aerodynamic technologies will have costs of $716 to implement aerodynamic technologies, as well as LRR tires

[22] HD GHG Phase 2 Rule, *supra* note 4, at 73,650–51.
[23] *Id.* at 73,652–53.

and a tire inflation system.[24] A 28-foot box van with the same characteristics is expected to have costs of $339.[25] These costs are expressed as incremental costs above the average baseline costs for a new trailer of that type. Figure 4, below, reproduced from the final Phase 2 rulemaking, sets forth incremental costs for each covered trailer type in 2018.

Figure 4[26]

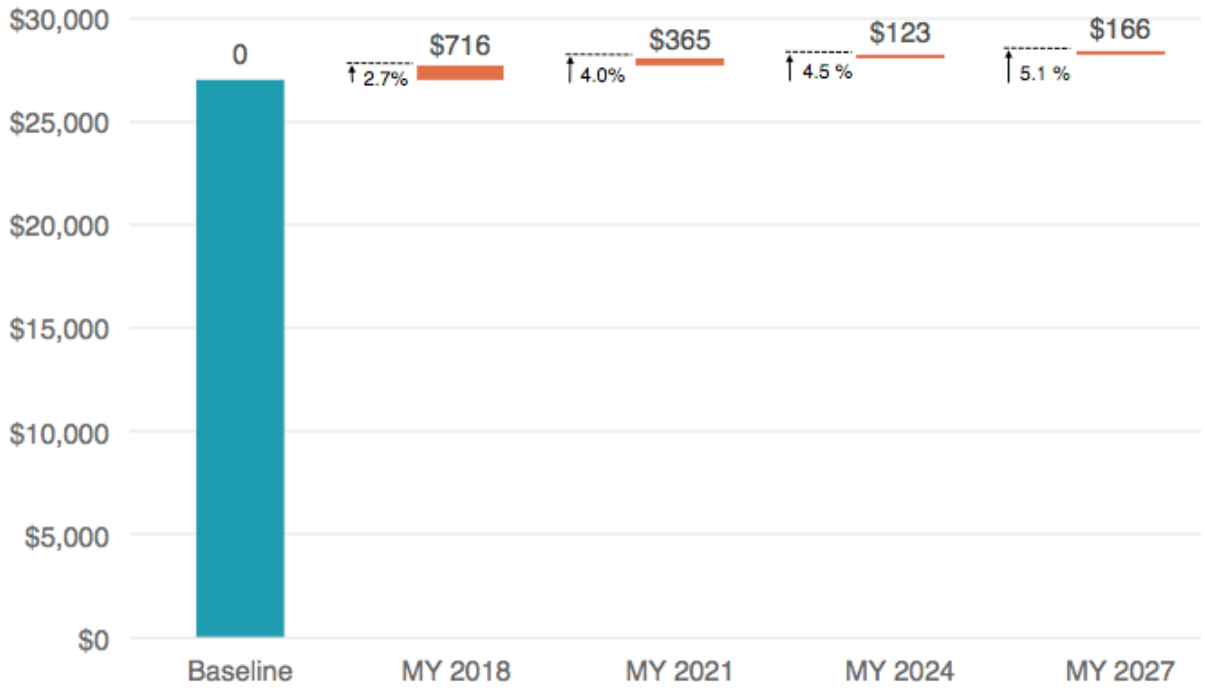
TABLE IV-20—TRAILER TECHNOLOGY INCREMENTAL COSTS IN THE 2018 MODEL YEAR
[2013$]

	Long vans, full aero	Long vans, partial aero	Short vans, full aero	Short vans, partial aero	Long vans, no aero	Short vans, no aero	Non-box
Aerodynamics	$367	$742	$0	$0	$0	$0	$0
Tires	2	40	1	20	40	20	28
Tire inflation system	347	659	338	494	421	210	421
TOTAL	716	1,441	339	514	461	231	448

31. Figure 5, below, compares incremental costs for long dry vans in 2018, 2021, 2024, and 2027 to baseline trailer manufacturing costs. Figure 5 shows that when built to comply with MY 2018 standards, long dry van trailers have incremental costs resulting in a 2.7 percent increase in trailer costs above baseline cost.

[24] *Id.* at 73,661–62.
[25] *Id.*
[26] *Id.* at 73,662 tbl. IV–20.

Figure 5: Incremental Costs for Long Dry Van Trailers[27]
Final Rule 81 FR 73662 October 25, 2016 [Tables IV-20, 21, 22, 23]



32. EPA estimates that trailers meeting the standards for the final year of implementation, MY 2027, will recoup the costs of installing and maintaining efficiency technologies through fuel savings in just the second year of ownership.[28] And individual technologies that can be used to comply with the EPA's 2018

[27] Calculations based on data contained in HD GHG Phase 2 Rule, *supra* note 4, at 73,662 tbls. IV–20 to –23. Baseline cost from Ben Sharpe, Nigel Clark and Dana Lowell, Int'l Council on Clean Transp., *Trailer Technologies for Increased HDV Efficiency* 25 (2013), http://www.theicct.org/sites/default/files/publications/ICCT_HDVtrailertechs_20130702.pdf.
[28] HD GHG Phase 2 Rule, *supra* note 4, at 73,510.

standards offer far shorter payback periods. Side skirts, for example, can have a 6-month payback period.[29]

THE TRAILER STANDARDS GRADUALLY PHASE IN TECHNOLOGIES AND INCLUDE FLEXIBILITIES TO HELP FURTHER SMOOTH COMPLIANCE.

33. The trailer standards phase in the above-described technologies over a 9-year period, from 2018 to 2027, such that trailer manufacturers need only gradually make the changes required to secure reductions in greenhouse gas emissions. And the modest 2018 standards remain through 2020, with the next step in efficiency requirements not beginning until 2021.

34. The prevalence of these efficiency technologies already in use in the current fleet is reflected in the baseline EPA adopted as a reference point[30] for evaluating the benefits and costs of the trailer standards. The baseline was informed in part by a 2014 survey of TTMA members, which found that a majority of box vans were already equipped with LRR tires and that a number of long box vans were equipped with aerodynamic side skirts.[31]

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[29] Ben Sharpe & Mike Roeth, Int'l Council on Clean Transp., *Costs and Adoption Rates of Fuel-Saving Technologies for Trailers in the North American On-Road Freight Sector* 8 tbl.2 (2014), http://www.theicct.org/sites/default/files/publications/ICCT_trailer-tech-costs_20140218.pdf.

[30] EPA analyzed a static baseline, in which technology penetration would remain constant over time absent the standards, and a dynamic baseline, in which technology penetration would grow but at a rate slower than that provided for by the standards. HD GHG Phase 2 Rule, *supra* note 4, at 73,656–57.

[31] *Id.* at 73,656; TTMA Letter, *supra* note 21, at 2.

35. EPA's baseline for the trailer standards reflects these levels of technological penetration. The baseline that assumes that in MY 2018—without the standards in place—40 percent of full-aero long box vans and 5 percent of full-aero short box vans will have aerodynamic devices, 90 percent of all box vans will have LRR tires, and 45 percent of all box vans will have ATIS technology.[32] EPA does not expect partial-aero box vans, non-aero box vans, or non-box trailers to adopt aerodynamic devices in the baseline.

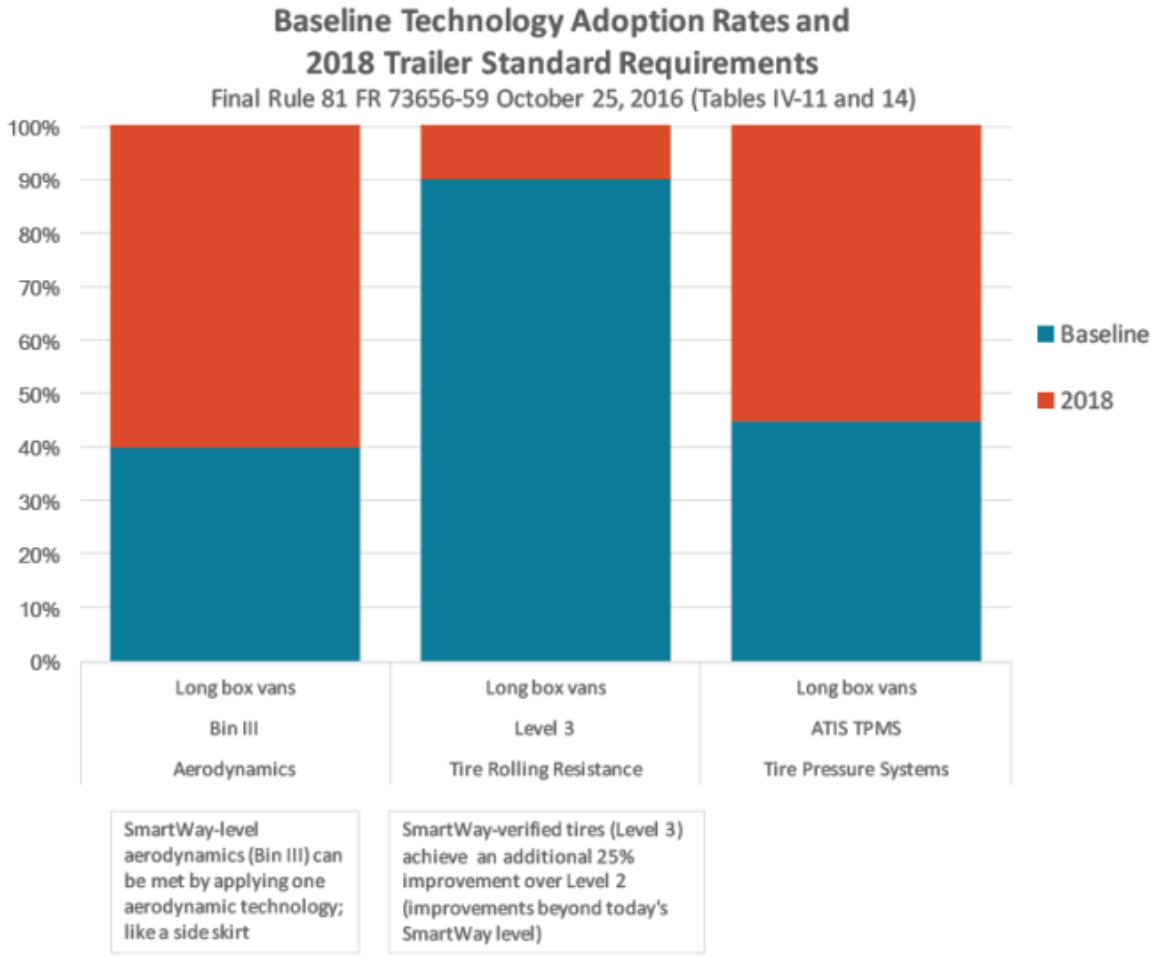
36. The 2018 trailer standards require only incremental improvements beyond these baseline values. For instance, for long box vans—the most common type of trailers—manufacturers can meet the 2018 standards by incorporating just one form of aerodynamic improvement (i.e., side skirts), switching to LRR tires, and adding tire pressure devices.[33] In subsequent years, manufacturers can meet standards by applying additional aerodynamic devices and incorporating more efficient tires. Accordingly, while the trailer standards are necessary to ensure full

[32] HD GHG Phase 2 Rule, *supra* note 4, at 73,656. Other, more recent studies, suggests that for certain fleets, these technology penetration levels may be even greater. The North American Council for Freight Efficiency's 6th Annual Fleet Fuel Study (AFFS), completed in 2017, includes data from 19 fleets, representing approximately 4 percent of the heavy-duty on-road vehicles in North America. According to the study, in 2016, nearly 90 percent of the trailers surveyed were using aerodynamic technology that would meet the 2018 standards, 80 percent of the trailers had LRR trailer duals, and about 75 percent employed tire pressure inflation systems. N. Am. Council for Freight Efficiency, *2017 Annual Fleet Fuel Study* (2017).

[33] *See* HD GHG Phase 2 Rule, *supra* note 4, at 73,651, 73,659.

penetration of greenhouse gas reducing technologies in the trailer fleet, the 2018 standards can be met by more broadly deploying technologies that are already reducing these emissions. Figure 6, below, shows baseline technology penetration for long box vans in the existing fleet and the additional increments that the 2018 standards would require.

Figure 6[34]



[34] Calculations based on data contained in HD GHG Phase 2 Rule, *supra* note 4, at 73,656–57 tbl. IV–11, 73,659 tbl. IV–14.

37. In addition to a modest phase-in, the trailer standards provide further flexibilities to help smooth compliance. First, to address any residual implementation concerns, EPA granted each manufacturer an "allowance" of trailers that do not need to meet the standards. For MY 2018 through 2026, up to 20 percent of box van manufacturers' production (to a maximum of 350 units) may not comply with the trailer standards.[35] EPA adopted a similar allowance for non-box trailer manufacturers.

38. Second, the standards allow manufacturers to receive credit for off-cycle technologies—for example, trailer solar roof panels—that are not necessary to meet the current standards. This allows manufacturers to develop additional efficiency technologies that were not accounted for at the time of the Phase 2 rulemaking and get credit for those technologies toward meeting the standards.

39. Finally, the standards contain flexibility provisions specifically designed to help facilitate small manufacturers' compliance. According to EPA, 147 of the 178 trailer and tanker manufacturers it identified for its Regulatory Impact Analysis (RIA) qualify as small businesses (with less than 1,000 employees).[36] And the true number of regulated small businesses is even smaller: many of these small businesses are exempt from the standards because they manufacture types of non-box trailers that EPA is not subjecting to regulation.

[35] *Id.* at 73,674–75.
[36] *Id.* at 73,677.

Thus, EPA estimates that only 74 of the identified companies that must comply with the standards are small businesses.[37] Though they make up the majority of all trailer manufacturers, EPA estimates that small business manufacturers produce less than 15 percent of the industry's total inventory.[38] Given their size, EPA found that these smaller manufacturers may need more time to make investments necessary to comply with the rule. Accordingly, the standards require small businesses to comply beginning in MY 2019 rather than MY 2018.[39]

TRAILER STANDARDS RELY ON TECHNOLOGIES THAT HAVE LONG BEEN DEPLOYED IN VOLUNTARY AND REGULATORY PROGRAMS.

40. The technologies that form the basis of the trailer standards have long been deployed in various voluntary and regulatory programs. For example, EPA's voluntary SmartWay program helps shipping companies track and assess fuel efficiency and greenhouse gas emissions, and works with the industry to identify and advance fuel-efficient technologies and practices. SmartWay verifies the performance of technologies—including the aerodynamic equipment and LRR tires identified by EPA as approved means of complying with the trailer standards—and publishes that performance information on its website.

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[37] *Id.* EPA limited its regulation of non-box trailers to only three types—tankers, flatbeds, and container chassis—and exempted all other non-box trailers from all regulatory requirements. *Id.*
[38] *Id.*
[39] *Id.*

41. Trailers equipped with specific SmartWay-verified technology may receive special status under the program, as either a SmartWay Designated trailer or a SmartWay Designated Elite trailer. A SmartWay Designated trailer is a 53-foot box van with verified LRR tires and one or more verified aerodynamic devices. A SmartWay Designated Elite trailer is a 53-foot box van with verified LRR tires and two or more verified aerodynamic devices.[40]

42. The SmartWay website advertises that fleets can purchase SmartWay Designated trailers from manufacturers such as Utility Trailer Manufacturing Company (Utility Trailer), Hyundai Translead, Inc. (Hyundai Translead), Great Dane LLC, and Wabash.[41] These manufacturers are all TTMA members and declarants in support of TTMA in this litigation. These trailer manufacturers do not only have a demonstrated capacity to produce trailers with LRR tires and aerodynamic devices that would meet the 2018 trailer standards, but are doing so now as a matter of business as usual.

43. Many trailers operating in the state of California are already required to meet SmartWay's certification standards. The state's Tractor-Trailer Greenhouse Gas Regulation, adopted in 2008, applies to all box van trailers 53 feet

[40] *SmartWay Designated Tractors and Trailers*, U.S. EPA, https://www.epa.gov/verified-diesel-tech/smartway-designated-tractors-and-trailers (last visited Oct. 11, 2017).
[41] *Id.*

or longer operating in the state.[42] Trailers covered by the regulation must be compliant with the SmartWay program, whether they are newly built to SmartWay-certified specifications or are retrofitted with SmartWay-verified technology, including both aerodynamic devices and LRR tires. As a result of this program, many trailers, including those operated by TTMA members, are already in compliance with the 2018 standards.

44. Finally, other countries have recognized the importance of applying commonsense technologies to reduce greenhouse gas emissions associated with trailers. Of particular relevance, Canada has recently proposed trailer standards that will align with the EPA's trailer standards, requiring improvements for trailers beginning January 1, 2018.[43]

45. Notwithstanding this widespread adoption, EPA found that a meaningful percentage of trailers did not yet employ cost-effective technologies to reduce greenhouse gas emissions, as discussed more fully below, and so standards were necessary to secure these important benefits.

[42] HD GHG Phase 2 Rule, *supra* note 4, at 73,641.
[43] *See generally* Regulations Amending the Heavy-Duty Vehicle and Engine Greenhouse Gas Emission Regulations and Other Regulations Made Under the Canadian Environmental Protection Act, 1999, C. Gaz., Part I, vol. 151, no. 9 (Mar. 4, 2017).

THERE IS NO EVIDENCE THAT THE TRAILER STANDARDS WILL RESULT IN LOST SALES.

46. I am aware that TTMA has claimed in its motion for stay and in supporting declarations that its members will lose sales due to the trailer standards. This claim is based on TTMA's assertion that, because the trailer technologies required by the rule save trailer purchasers money, these purchasers have an incentive to incorporate technologies where they are profitable. Where market forces do not lead to incorporation of these technologies, TTMA hypothesizes, they will deliver no benefits to purchasers—either in the form of fuel savings or greenhouse gas reductions. These claims rest on unsupported assumptions that are inconsistent with available data on trailer sales, orders, and cancellations.

47. *Available Data Contradict Claims that Trailer Orders, Sales, and Cancellations Have Been Adversely Affected by the Trailer Standards*. I have reviewed the most recent data on the trailer industry sales from Americas Commercial Transportation Research Co. (ACT Research), released September 21, 2017. The report (ACT Report), entitled *State of the Industry: U.S. Trailers,* includes information on trailer orders, sales, and cancellations through August of 2017 and likewise includes information on 2017 year-to-date performance in each of these areas. EPA used data from ACT Research to support the Phase 2 rulemaking, including the trailer standards, and trailer manufacturers have likewise relied on this information in the past.

48. The ACT Report's summary conclusions underscore the strength of trailer industry sales. In particular, the ACT Report finds: "[f]actory shipments were up [year over year] for the third straight month," and "cancellations, a leading indicator of fleet retrenchment, continued to be a non-issue."[44] This data shows that orders, builds and shipments of new trailers have experienced expected growth in 2017 with no significant variation from original projections.

49. Table 1, below, synthesizes the latest available data from the ACT Report on trailer builds, net orders (the difference between new orders and any cancellations), and factory shipments. The Table presents information on all trailers, as of August 2017, and likewise presents information for dry vans (accounting for approximately 56 percent of new builds) and refrigerated vans (accounting for approximately 14 percent of new builds).[45] The table includes information on dry vans and refrigerated vans because those trailers account for the most significant percentage of new trailer builds and are subject to modest greenhouse gas standards beginning January 1, 2018.

[44] ACT Research, *State of the Industry: Commercial Vehicles: US Trailers: August and YTD 2017 Data*, at ii (Sept. 21, 2017).
[45] *Id.* at 18. I have calculated total trailers and percentage of dry vans and refrigerated vans based on year-to-date actual builds through August.

Table 1: Builds, Net Orders, and Factory Shipments for All Trailers, and Select Types[46]

AUGUST 2017	ALL TRAILERS Month / Month (M/M)	ALL TRAILERS Year / Year (Y/Y)
New Builds	+14%	+9%
Net Orders	+9%	+2%
Factory Shipments	+12%	+8%

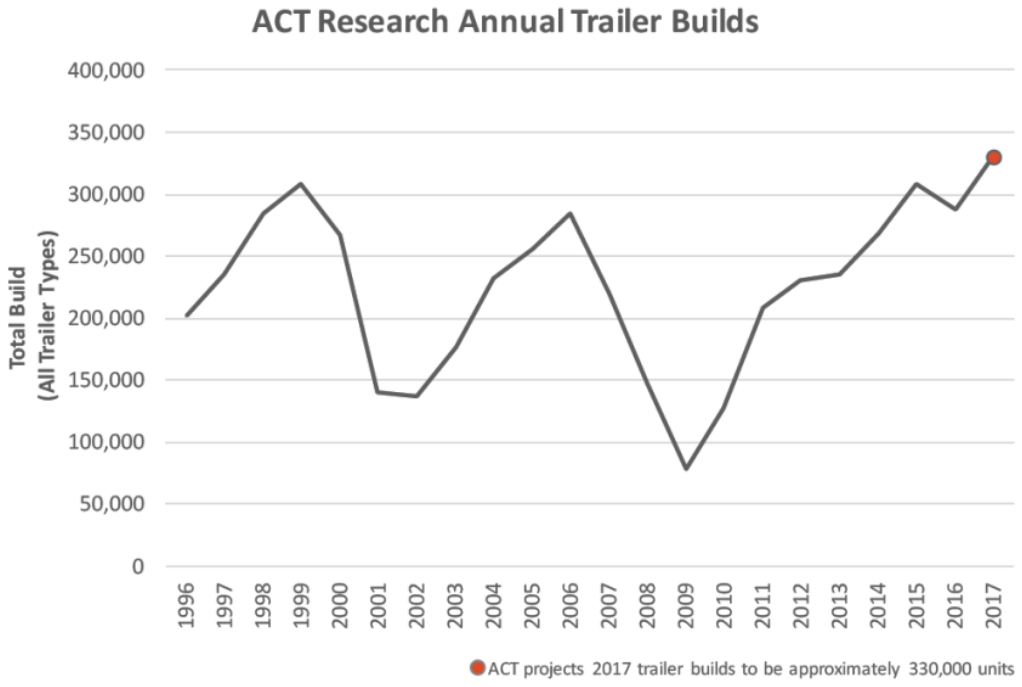
AUGUST 2017	DRY VANS (56 Percent of All New Builds) M/M	DRY VANS (56 Percent of All New Builds) Y/Y
New Builds	+15%	+8%
Net Orders	+15%	-8%
Factory Shipments	+11%	+5%

AUGUST 2017	REFRIGERATED VANS (14 Percent of All New Builds) M/M	REFRIGERATED VANS (14 Percent of All New Builds) Y/Y
New Builds	+13%	+6%
Net Orders	+28%	+21%
Factory Shipments	+16%	+8%

50. Table 1 shows positive overall growth and growth in key categories of trailer sales as compared with last year. This data also reflects a positive historical sales trend. As EPA noted in RIA for the Phase 2 rulemaking, trailer sales after the 2009 recession were depressed, but since that time have grown steadily.[47] As shown in Figure 7, below, ACT projects 2017 annual trailer builds to be approximately 330,000 units,[48] near the very upper end of builds since 1996.

[46] Data compiled from ACT Research, *supra* note 44, at 11–12, 17.
[47] HD GHG Phase 2 RIA, *supra* note 8, at 1-5.
[48] ACT Research, *supra* note 44, at 18.

Figure 7[49]



51. ACT Research's forecast for 2018 projects that the number of trailers built in the first quarter of 2018 will be up over 10 percent compared with the first quarter of 2017, indicating that there is no expectation of a disruption to the market as a result of the impending 2018 trailer standards.[50] Taken together, this data

[49] Calculation based data obtained from ACT Research.

[50] ACT Research, *supra* note 44, at 18–19. The ACT Report notes that, notwithstanding this strong overall economic picture, some purchasers may be waiting on orders in light of uncertainty around the trailer standards. Importantly, to the extent this uncertainty exists, if at all, is not due to the costs of technologies required by the standards, but instead to EPA's recent decision to reconsider those standards and TTMA's legal challenge to the standards. In any event, the Report describes any such effect in modest and qualitative terms: uncertainty may lead to "some reluctance to commit [to orders] now." *Id.* at 1. Moreover, any modest effect this may have would likely lead to deferred orders as opposed to foregone orders.

paints a strong picture of trailer industry sales and does not support the sales disruptions TTMA alleges in its filings and declarations.

52. *Declarant Wabash's Public and Financial Statements Contradict Claims that Trailer Sales Have Been Adversely Affected by Trailer Standards*. Wabash, the nation's largest trailer manufacturer and a declarant in support of TTMA's stay request, is a publicly traded company that files disclosure reports with the U.S. Securities and Exchange Commission.

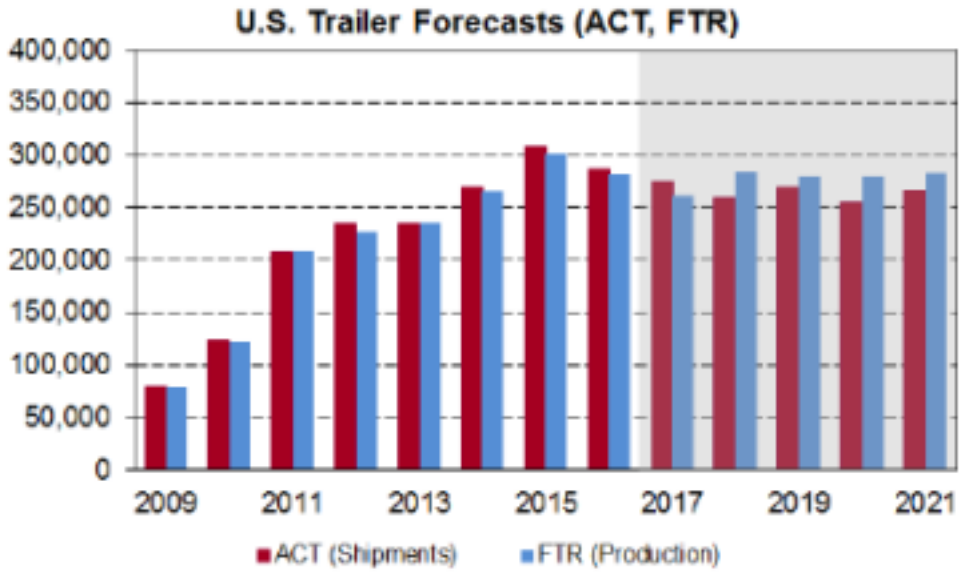
53. In its most recent quarterly 10-Q report, filed July 25, 2017, Wabash made representations consistent with the ACT Research data. For instance, Wabash noted: "The demand environment for trailers remained strong through the first six months of 2017, as evidenced by our strong backlog, a trailer demand forecast by industry forecasters above replacement demand levels for the next several years, and our ability to maintain strong margins. Recent estimates from industry analysts, ACT Research Company ("ACT") and FTR Associates ("FTR"), forecast trailer demand for 2017 and beyond to remain healthy."[51] In discussing its outlook, Wabash did not mention any risks associated with the trailer standards.

54. In its annual 10-K report, filed in February of 2017, Wabash does discuss the trailer standards, noting that "[i]n addition to increasing the cost of a trailer, these regulations may also lead to a higher demand for various aerodynamic

[51] Wabash Nat'l Corp., Quarterly Report (Form 10-Q) 36 (July 25, 2017).

device products."[52] In addition, Wabash stated that it "believe[d] the need for trailer equipment [would] be positively impacted" by the coming regulatory requirements it discussed, which included the EPA trailer standards.[53] The company made similar statements in a May 2017 update to its investors, in which it noted that "[s]trong demand above replacement levels [is] forecast for [the] next 5 years" and identified "[f]leet equipment dynamics and regulations [as] key drivers of trailer demand."[54] Wabash provided investors with the following projections from ACT Research and FTR, another firm that compiles industry data.

Figure 8[55]



[52] Wabash Nat'l Corp., Annual Report (Form 10-K) 35 (Feb. 27, 2017).
[53] *Id.*
[54] Wabash Nat'l Corp., Investor Update: May 2017, at 28 (2017).
[55] *Id.*

55. Wabash's financial and public statements suggest that sales are strong and that the industry's sales outlook is likewise promising. These statements are consistent with the ACT Research industry data and undermine claims that the trailer standards are resulting in loss of sales.

56. *Economics Literature and the History of EPA Standards Undermine Claims that the Trailer Standards Will Result in Lost Sales*. Finally, TTMA's claims that trailer manufacturers will lose sales are based on two flawed assumptions: 1) that the market will function perfectly on its own to deliver fuel savings and greenhouse gas reductions; and 2) that consumers will not purchase trailers that meet more efficient standards.

57. There is a well-developed and rigorous body of research documenting that market barriers prevent some purchasers from investing in efficiency technology that will save them fuel and money and reduce greenhouse gas emissions.[56] One reason is that purchasers may not have complete or reliable information about the effectiveness and durability of a particular technology–both

[56] HD GHG Phase 2 Rule, *supra* note 4, at 73,859; *see also* Heather Klemick et al., *Heavy-Duty Trucking and the Energy Efficiency Paradox: Evidence from Focus Groups and Interviews*, 77 Transp. Res. Part A: Pol'y & Practice 154 (2015), Docket ID: EPA-HQ-OAR-2014-0827-1992; N. Am. Council for Freight Efficiency & Cascade Sierra Sols., Mike Roeth et al., *Barriers to the Increased Adoption of Fuel Efficiency Technologies in the North American On-Road Freight Sector* (2013), Docket ID: EPA-HQ-OAR-2014-0827-0084; CE Delft, Sanne Aarnink et al., *Market Barriers to Increased Efficiency in the European On-Road Freight Sector* (2012), Docket ID: EPA-HQ-OAR-2014-0827-0076.

in the new vehicle market and the resale market. Another, which is particularly true in the heavy-duty market, is that there are barriers due to split incentives, where the party paying the upfront cost of the fuel-saving equipment may be different from the party realizing the fuel cost savings.[57] A third is that even with relatively short payback periods, like the period of up to two years here, some companies will still choose to invest their money in ways other than fuel-saving devices. Even in a relatively efficient market, these barriers can impede the development and uptake of the full array of modern technologies.

58. Regardless of the efficiency of the trailer market, it is incorrect to assume that the greenhouse gas reductions and fuel savings delivered by the market—i.e. what is profitable for purchasers—are the same as reductions that can be delivered by EPA standards adopted pursuant to the agency's Clean Air Act authority. For example, purchasers may seek payback times as short as 6 months to incorporate fuel-saving technologies into their fleet.[58] Standards can ensure that technologies with incrementally longer payback periods—for instance, up to two years in the case of the 2027 trailer standards—can nonetheless be deployed in a way that saves fuel, saves money, and reduces emissions. As described above, EPA crafted common sense trailer standards to ensure they would apply only to

[57] HD GHG Phase 2 Rule, supra note 4, at 73,860; *see also* Roeth et al., *supra* note 56.
[58] Sharpe & Roeth, *supra* note 29, at 8 tbl.2.

trailers where technologies would help to realize fuel savings and greenhouse gas reductions and at the same time minimize the regulatory burden on the trailer manufacturers. The agency found, however, that the market alone wouldn't ensure full deployment of these technologies:

> We do not believe a voluntary trailer program will produce sufficient emissions and fuel consumption reductions to meet our regulatory obligations. The agencies' baseline accounts for improvements already present in the trailer fleet due to participation in the voluntary SmartWay program or other factors. The agencies project that very significant and cost-effective reductions over that baseline are available, largely through further utilization of already-available tire and aerodynamic technologies that are not presently deployed on significant portions of the trailer fleet. Thus, reliance on further voluntary efforts will not achieve reductions which are readily feasible in the lead time provided, cost-effective, and which indeed, will pay for themselves in fuel savings.[59]

59. Previous standards under section 202 of the Clean Air Act have functioned in the same manner. For instance, standards for cars and lights trucks have required deeper penetration of fuel saving technologies than would otherwise be delivered by the market. Automakers have met these standards, while experiencing record sales over the last several years. While there are some differences between the trailer markets and car and truck markets, this past

[59] U.S. EPA & Nat'l Highway Traffic Safety Admin., EPA-420-R-16-901, Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles – Phase 2: Response to Comments for Joint Rulemaking 965–66 (2016), Docket ID: EPA-HQ-OAR-2014-0827-2344.

experience undermines the claim that fuel efficiency and greenhouse gas standards result in loss of sales.

IT IS UNLIKELY THAT LARGE MANUFACTURERS WILL LOSE MARKET SHARE BECAUSE THE TRAILER STANDARDS PROVIDE AN ADDITIONAL YEAR FOR SMALL MANUFACTURER COMPLIANCE.

60. TTMA has also claimed that larger manufacturers will lose market share to smaller manufacturers because the trailer standards afford smaller manufacturers an additional year—until January 2019—to comply with the standards. This claim depends on the assertion that purchasers will not buy more efficient trailers required by the standards, which, as described above, is inconsistent with market data and company statements.

61. In addition to these flaws, the structure of the trailer market makes any significant shift in market share very unlikely, especially in the limited, one-year period before smaller manufacturers have to comply with the trailer standards as well. According to EPA's analysis, the top five manufacturers alone are responsible for more than 75 percent of the industry's total production, and the top four (all of whom provided declarations in support of TTMA's stay request) represent over 60 percent of all production.[60] Several of these manufacturers, including declarants Wabash and Great Dane, have revenues of over $1 billion.

[60] HD GHG Phase 2 RIA, *supra* note 8, at 1-4.

Across all large manufacturers, average revenue is $276 million.[61] Figure 9, below, from EPA's RIA shows the percentage of the market that large manufacturers account for.

Figure 9[62]

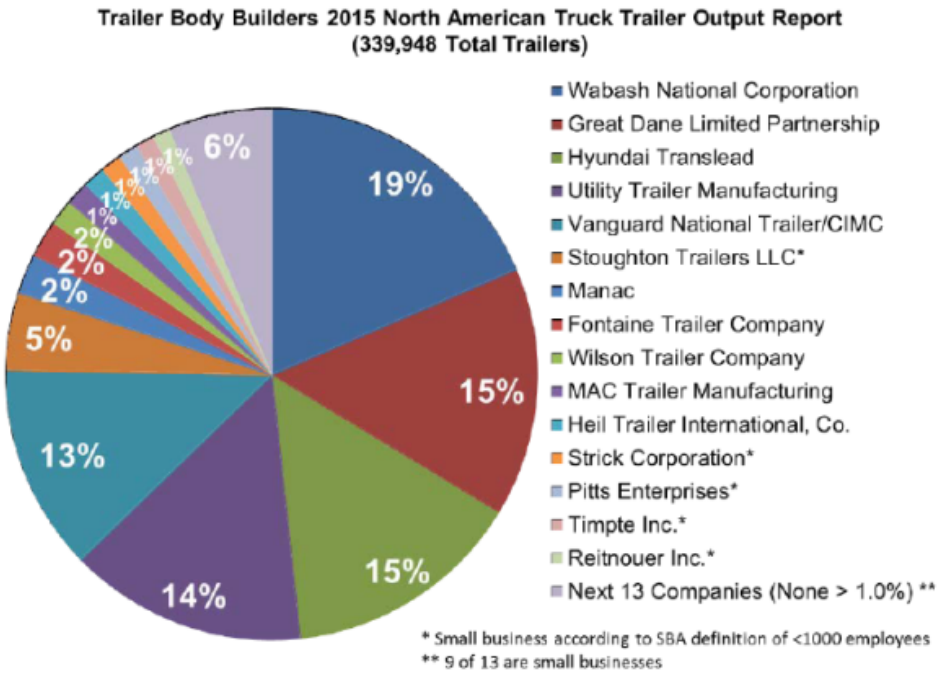


Figure 1-3 2015 Trailer Output Report from Trailer Body Builders

62. 147 small manufacturers produce only 15 percent of all trailers. On average, these small manufacturers have revenues of $16 million, with the majority having revenues of less than $10 million per year.[63] Given this imbalance in the

[61] *Id.* at 1-5.
[62] *Id.* at 1-4.
[63] *Id.* at 1-5.

marketplace, small manufacturers lack the capital and infrastructure that would be needed to meaningfully scale production in a way that would impact market share before MY 2019, when they too are required to comply with the standards. EPA reached this same conclusion when it finalized the one-year delay for small business manufacturers, noting that any diverted sales will be only a very small portion of the large manufacturers' total production.[64]

63. This dynamic is especially true for TTMA declarants Wabash, Great Dane, Hyundai Translead, and Utility Trailer, the four largest manufacturers, all with revenues well above the average for large manufacturers. In fact, Wabash, Great Dane, and Hyundai themselves have market shares equal to or greater than the sum total of all of the remaining 147 small trailer manufacturers, and, as discussed above, Wabash's financial statements forecast continued growth. Kentucky Trailer, the final manufacturer that provided a declaration in support of TTMA's stay request, is itself a small business based on data reported to the Small Business Regulatory Enforcement Fairness Act (SBREFA) Panel and so will face no compliance obligations until January 2019.[65]

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[64] HD GHG Phase 2 Rule, *supra* note 4, at 73,677.

[65] U.S. EPA & Nat'l Highway Traffic Safety Admin., Small Business Economic Burden Calculations for Trailer SISNOSE Analysis Spreadsheet (2016), Docket ID: EPA-HQ-OAR-2014-0827-2218 [hereinafter Small Business Economic Burden Spreadsheet].

64. Finally, because TTMA members account for over 90 percent of U.S. trailer production (a virtual monopoly),[66] it is unclear how market shifts could collectively impact TTMA's membership.

IT IS UNLIKELY THAT THE TRAILER STANDARDS WILL RESULT IN ADDITIONAL EXPENSES RELATED TO PERSONNEL OR STORAGE.

65. TTMA members also claim that they will incur additional expenses associated with storing trailer parts, including hiring personnel and building storage facilities.

66. These claims depend on the assertion that trailer manufacturers will not be able to sell more efficient trailers, which as described above, is inconsistent with market data and company statements. Indeed, it is likely that manufacturers will pass along to purchasers any additional costs associated with producing more efficient trailers. Purchasers, in turn, will recoup any such additional costs through fuel savings within six months to two years.[67] In its most recent quarterly report, Wabash notes that it "will endeavor to pass raw material and component price increases to [its] customers,"[68] and in its investor materials, notes that it is operating at profit margins of approximately 17 percent.[69] Given these practices, it

[66] Decl. of Jeff Sims in Supp. of Truck Trailer Manufacturers Association, Inc.'s Mot. for Stay 1.
[67] *See* HD GHG Phase 2 Rule, *supra* note 4, at 73,481; Sharpe & Roeth, *supra* note 29, at 8 tbl.2.
[68] Wabash Nat'l Corp., Quarterly Report (Form 10-Q) 37 (July 25, 2017).
[69] Wabash Nat'l Corp., Investor Update: May 2017, at 3 (2017).

is likely that companies would recoup any additional costs associated with manufacturing more efficient trailers when those trailers are sold.

67. In addition, EPA and NHTSA's analysis in the record suggests that the specific storage costs presented in TTMA's declarations are overstated. The agencies concluded that large manufacturers could experience costs of approximately $250,000 for storage and small manufacturers could experience costs of approximately $125,000, and costs would be zero beyond the first year.[70] The agencies also estimated startup costs to be $65,600 for any manufacturers that produce box vans and $46,500 for manufacturers that only produce non-box trailers.[71] Again, these costs would be zero beyond the first year of the program.

68. Finally, given the seasonality of the trailer business, manufacturers likely employ just-in-time manufacturing processes to further minimize the need for extended storage.

THE HARMS TTMA MEMBERS ALLEGE REPRESENT A VERY SMALL FRACTION OF COMPANY REVENUES.

69. As discussed above, the economic impacts asserted in TTMA members' declarations are either inconsistent with available data, unsubstantiated, or highly speculative. Even assuming these TTMA members' claims are accurate,

[70] Memorandum from Jessica Brakora, Eng'r, Assessment & Standards Div., Office of Transp. & Air Quality, EPA, to HD GHG Phase 2 Docket, on Small Business Economic Burden Calculations for Trailer SISNOSE Analysis 2 (July 18, 2016), Docket ID: EPA-HQ-OAR-2014-0827-2218.
[71] *Id.*

however, the alleged expenses represent only a very small fraction of company revenues. Table 2, below, compares alleged compliance costs in the TTMA members' declarations to these same companies' revenues, as reflected in the agencies' SBREFA analysis. The Table includes only costs claimed by large manufacturers—Wabash, Great Dane, Utility Trailer, and Hyundai Translead—with 2018 compliance obligations. Kentucky Trailer is excluded because the company is a small manufacturer that need not demonstrate compliance until January 2019.

Table 2: Comparison of Allege Compliance Costs and Revenues for Large Manufacturers[72]

ALLEGED COSTS	WABASH	UTILITY	GREAT DANE	HYUNDAI
Storage		$2,448,000	$2,000,000	$1,000,000
Additional Personnel		$5,000,000		
Other	$965,000			
Alleged Total Costs	**$965,000**	**$7,448,000**	**$2,000,000**	**$1,000,000**
Total Revenue (SBREFA Analysis)	**$1.8 billion**	**$1 billion**	**$466,000,000**	**$664,000,000**
Cost as a Percentage of Revenue	**0.05%**	**0.80%**	**0.43%**	**0.15%**

[72] Table created based on data provided in TTMA members' declarations and Small Business Economic Burden spreadsheet, *supra* note 65.

CONCLUSION.

70. The trailer standards are based on readily-available, off-the-shelf technologies that are cost-effective and have a history of use in voluntary and regulatory programs. These technologies will deliver substantial benefits in the form of fuel consumption savings and greenhouse gas emission reductions, with no evidence of a disruptive effect on trailer manufacturers' businesses.

I declare that the foregoing is true and correct.

Michael P. Walsh

Dated October 12, 2017

Attachment 5

Letter from Ceres BICEP Network to E. Scott Pruitt, Administrator, U.S. EPA (Oct. 10, 2017)

Ceres
Sustainability is the bottom line.

BICEP Members:

Annie's Inc
Aspen Skiing Company
Autodesk
Aveda
Ben & Jerry's
Burton Snowboards
CA Technologies
Clif Bar & Company
Dignity Health
eBay Inc.
Eileen Fisher
Etsy
Fetzer Vineyards
Gap Inc.
General Mills, Inc.
IKEA
JLL
KB Home
The Kellogg Company
L'Oreal USA
LBrands
Levi Strauss & Co.
Mars Incorporated
Nature's Path Foods
Nestle
New Belgium Brewing
Nike, Inc.
The North Face
Outdoor Industry Association
Owens Corning
Patagonia, Inc.
Portland Trail Blazers
Seventh Generation
Sierra Nevada Brewing
Squaw Valley
Starbucks
Stonyfield Farm
Symantec Corporation
Timberland
Unilever
Vail Resorts
VF Corporation
Vulcan, Inc.
Worthen Industries

October 10, 2017

The Honorable E. Scott Pruitt
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Administrator Pruitt:

As a coalition of businesses committed to stronger climate and clean energy policies, we write to express our serious concern with EPA's reconsideration of the trailer provisions of the Phase 2 greenhouse gas (GHG) standards, Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2. Business for Innovative Climate and Energy Policy (BICEP) was founded in 2009. The Ceres BICEP network is made up of forward-thinking companies who are respected leaders in our sectors and recognize that the low-carbon economy will continue stimulating growth and creating new jobs, while stabilizing our climate.

We represent $437,698,998,000 billion in annual revenue. Our companies are largely considered "shippers," relying on freight trucking companies, or "carriers," to move goods through our supply chain and to market, though some of us have our own private fleets, which we purchase from the original equipment manufacturers (EOMs) of trucks and trailers.

The Phase 2 standards are an economically sound climate and energy regulatory policy. We fully supported the Phase 2 program during the rulemaking process and continue to support the standards today. In total, the Phase 2 standards will deliver $170 billion in fuel cost savings over the lifetime of the covered vehicles and trailers – savings to our companies and our customers.

Emissions from freight transportation make up a significant portion of our environmental footprint. And Class 7 and 8 tractor-trailers account for approximately 60 percent of the heavy-duty sector's total CO_2 emissions and fuel consumption. Reducing these emissions is an important aspect of our sustainability goals.

Ceres
Sustainability is the bottom line.

Our companies support the trailer standards in particular as they will deliver a significant portion of the emissions and fuel cost savings from the program—EPA estimates trailer controls can account for one-third of the total reductions achievable for tractor-trailers—and they employ common sense, cost-effective measures that are already widely available and in use. The Phase 2 trailer standards will increase the benefits by 48% compared to truck standards alone.

In fact, the trailer standards are predicated on technologies and measures that many private fleets, including those among us, already employ on our trailers, and that we desire our carriers to use on their fleets when transporting our goods, such as side skirts, tails, weight reduction technologies, tire pressure systems, and low-rolling resistance tires. We have been buying and implementing these devices and measures over the last decade.

Many of us operate in California, where trailers are already required to have these control measures. Volunteer and regulatory programs such as EPA's SmartWay program and California's tractor-trailer GHG standards have accelerated the availability and market penetration of these fuel and cost saving devices that we rely on today. Through these regulatory programs, together with our own internal corporate policies, we are already experiencing the benefits of the same control measures the federal trailer standards will employ: improved fuel economy benefits to each of the entities down the supply chain from the trailer OEM.

The regulatory compliance costs that trailer OEMs incur are passed on to the end-users who purchase the trailers, including carriers, shippers, and private fleets—and ultimately to consumers. The costs that trailer manufacturers incur to comply with the Phase 2 trailer standards, which are passed on to us, will be far surpassed by the benefits from fuel cost savings. Overall, we anticipate that the Phase 2 standards will reduce our freight costs by 21 cents a mile as new trucks come into the fleet, and up to a third of these savings can be attributable to trailer efficiency measures. This quickly adds up to meaningful savings across our millions of distribution miles. In addition, six of the BICEP companies are SmartWay members. Through SmartWay, we reward fleets that adopt fuel efficiency solutions, like trailer aerodynamic devices.

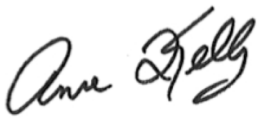
Though emissions reduction and fuel economy measures such as aerodynamics and tire technologies are cost-effective and widely available, as shippers, when we purchase transport services from trucking companies, we cannot always ensure that they are utilized on the trailers that transport our goods. The Phase 2 federal trailer standards will create uniformity among the nation's fleet of trailers that will ensure that we—and our customers in turn—will consistently benefit from the fuel cost savings these measures provide.

Ceres
Sustainability is the bottom line.

Our trailers and the trailers we hire operate on regional and city routes as well as long-haul trips—each trailer may be used in different applications and on different routes throughout its lifetime. As trailers are typically used across these environments, though the fuel economy benefits from efficiency technologies on trailers are greater for trailers that travel longer distances and at higher speeds, broad deployment of fuel saving solutions ensures that emissions and costs are minimized. Some of us have private fleets of our own trailers and have already submitted orders to trailer manufacturers for MY2018 trailers. We expect these trailers to be compliant with the Phase 2 trailer standards.

A stay of the trailer standards would deprive businesses of the benefits of improved fuel economy of the freight trucks that transport our goods. We urge you not to alter the duly promulgated Phase 2 trailer standards.

Respectfully submitted,



Anne Kelly
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Attachment 6

Press Release, Wabash National, "Wabash National Introduces Trailer Aerodynamic Solutions at ATA's Technology and Maintenance Council Exposition" (February 16, 2015)

DETAILS

Feb 16,2015

Wabash National Introduces Trailer Aerodynamic Solutions at ATA's Technology and Maintenance Council Exposition

Wabash Aerodynamic Device Combination Verified to New EPA SmartWay Elite Category, Provides Over Nine Percent Fuel Economy Improvement

NASHVILLE, Tenn. – February 16, 2015 – Wabash National Corporation (NYSE: WNC), a diversified industrial manufacturer and North America's leading producer of semi-trailers and liquid transportation systems, today introduced three new solutions designed to significantly improve trailer aerodynamics and fuel economy at ATA's Technology and Maintenance Council Exposition in Nashville, Tenn.

The company's exhibit, located in booth #856, features a new trailer drag reduction system and aerodynamic tail device that, when used together, provide over nine percent in fuel economy improvement (certified by an independent, third-party in accordance with SAE J1252 Wind Tunnel Test). Together, the devices are verified as an EPA SmartWay Elite aerodynamic device combination, a new category for the SmartWay program that recognizes devices providing the highest levels of fuel savings. In addition, the company introduced a new lightweight trailer side skirt product.

"After extensive research, development and testing, we're pleased to introduce the latest advancements in trailer aerodynamics," said Brian Bauman, vice president and general manager, Wabash Composites. "When used in combination with low rolling resistance tires, these devices can improve fuel economy by more than ten percent. We're driving fuel savings to new levels to help reduce fleet fuel consumption, operating costs and greenhouse gas emissions."

The Ventix DRS™ drag reduction system utilizes a patent-pending segmented design to manage air flow across the entire length of the trailer and eliminate drag points. Each of the system's aero panels are engineered and mounted to direct airflow under and around the trailer, maximizing aerodynamic performance. In SAE J1252 Wind Tunnel Test comparisons, the Ventix DRS provides 50 percent more fuel savings than trailer side skirts when used as a stand-alone device.

The aerodynamic tail device, named the AeroFin™, manages airflow across the rear of the trailer to reduce aerodynamic drag. The compact device deploys and retracts automatically with swing door operation, requiring no additional interaction from the driver and does not interfere with trailer loading and unloading.

- More -

Building on the fleet-proven success of its DuraPlate AeroSkirt® introduced in 2009, Wabash National also introduced its commercially available AeroSkirt CX™ – a trailer side skirt that, like its predecessor, provides up to 6.0 percent in fuel economy improvement (SAE J1321-Type II Track Test) in a design that weighs approximately 25 percent less.

"Our engineers are readily available to advise fleet managers on Wabash National's new aerodynamic solutions as well as the new device testing protocols," said Gus Sumcad, director of engineering, Wabash Composites. "The new testing protocols provide fuel savings estimates that better correlate with actual results. It's important that carriers understand aerodynamic testing methods and the questions that need to be asked when specifying these types of devices.

To learn more about Wabash National aerodynamic trailer solutions, visit wabashcomposites.com. More information on the EPA SmartWay program can be accessed at http://epa.gov/smartway/forpartners/technology.htm

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About Wabash National Corporation

Headquartered in Lafayette, Indiana, Wabash National Corporation (NYSE: WNC) is a diversified industrial manufacturer and North America's leading producer of semi-trailers and liquid transportation systems. Established in 1985, the company specializes in the design and production of dry freight vans, refrigerated vans, platform trailers, liquid tank trailers, intermodal equipment, engineered products and composite products. Its innovative products are sold under the following brand names: Wabash National®, Transcraft®, Benson®, Walker Transport, Walker Barrier Systems, Walker Engineered Products, Brenner® Tank, Beall®, Garsite, Progress Tank, TST®, Bulk Tank International, Extract Technology®, DuraPlate®, DuraPlate AeroSkirt®, AeroSkirt CX™, Ventix DRS™ and AeroFin™. To learn more, visit www.wabashnational.com.

CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing **Appendix to Intervenor Public Health and Environmental Organizations' Opposition to Motion for Stay** on all parties through the Court's electronic case filing (ECF) system.

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