

Testimony of John Bozzella

**President and CEO, Association of Global Automakers, Inc. before the
House Committee on Energy and Commerce
Subcommittee on Commerce, Manufacturing and Trade and
Subcommittee on Energy and Power Hearing on the Midterm Review and Update on the
Corporate Average Fuel Economy Program and Greenhouse Gas Emissions Standards for
Motor Vehicles**

September 22, 2016

Summary

- Global Automakers' members are manufacturing cars and trucks that are more fuel efficient and cleaner than ever before, and improvements continue. Automakers have introduced numerous improvements in conventional vehicles, as well as remarkable advancements in alternatives to traditional gasoline vehicles, such as plug-in hybrid electric, battery electric, and hydrogen fuel cell electric vehicles.
- In 2012, the Environmental Protection Agency (EPA), the National Highway Traffic Safety Administration (NHTSA) and the California Air Resources Board (CARB) established standards for light duty fuel economy and greenhouse gas (GHG) emissions through 2025, under "One National Program" (ONP). The ONP includes a "Midterm Evaluation" to assess the assumptions made in 2012 and reexamine the path towards 2025.
- The Midterm Evaluation is critical to the overall goals of a strong, unified national program. Federal and state fuel economy and GHG emissions standards must be aligned to minimize differences and costs while maximizing environmental and energy benefits.
- The first step in the Midterm Evaluation process was the agencies' release of the draft Technical Assessment Report (TAR) in July. According to the TAR, additional technologies beyond what is on the road today will be needed to meet the standards through 2025. Our initial analysis of the TAR shows that the agencies overestimated the efficiencies of many technologies and that as a result, more technologies will be needed than those included in the TAR. This will increase prices beyond earlier estimates and may result in customers having to make trade-offs between fuel efficiency and other options.
- As the EPA, NHTSA, and CARB continue through the Midterm Evaluation process and into the future, there are three crucially important issues that should be at the forefront: (1) ensuring that our customers' needs and preferences are accounted for; (2) reducing inefficiencies and inconsistencies in the system that create drag, discourage innovation, and waste resources; and (3) identifying how we can work together to achieve the nation's climate and energy goals, both through 2025 and beyond.

Testimony

Chairman Burgess, Chairman Olson, Ranking Member Schakowsky, and Ranking Member Rush, on behalf of the Association of Global Automakers (Global Automakers), I want to thank you for the opportunity to testify before your Subcommittees today. Global Automakers represents international automobile manufacturers that design, build, and sell cars and light trucks in the United States. Our member companies have invested \$56 billion in U.S. based facilities, directly employ more than 100,000 Americans, and sell nearly half of all new vehicles purchased annually in the country. Combined, our members operate three hundred production, design, R&D, sales, finance, and other facilities across the United States.

Our members are manufacturing cars and trucks that are more fuel efficient and cleaner than ever, and advancements continue. Automakers have improved engine and transmission efficiency, reduced vehicle weight, improved aerodynamic designs, and applied more efficient cooling and lighting, stop-start systems to reduce idling-related emissions, and other technologies.

Automakers are also making remarkable progress in alternatives to traditional gasoline vehicles, such as plug-in hybrid electric and battery electric vehicles, which get energy from the grid, and fuel cell electric vehicles, which generate energy by converting hydrogen to electricity. Global Automakers' members' ongoing and longtime investments in the development and deployment of these vehicles is proof of their commitment to these technologies. Our members are in the market today with vehicles, such as the Toyota Mirai Fuel Cell, Hyundai Tucson Fuel Cell, Honda Clarity Fuel Cell, Nissan Leaf Battery Electric, and Kia Soul Battery Electric. We view

these technologies as important to our long-term goals of reducing petroleum consumption and lowering greenhouse gas (GHG) emissions.

Seven years ago, the auto industry, the federal government, and the state of California committed to “One National Program” (ONP) to establish harmonized Corporate Average Fuel Economy (CAFE) and GHG emissions standards for light duty vehicles to provide substantial environmental benefits across the nation. As part of this commitment, in 2012, the U.S. Environmental Protection Agency (EPA) and the National Highway Traffic Safety Administration (NHTSA) promulgated standards for model years (MY) 2017 through 2025. Recognizing the nationwide benefits produced by the federal program, California issued regulations accepting compliance with the federal standards as compliance with the California GHG program promulgated by the California Air Resource Board (CARB).

In light of the fact that the 2012 rule established standards over a decade into the future and that NHTSA is statutorily required to undergo another rulemaking, ONP includes a “Midterm Evaluation” to assess the assumptions made in 2012 and reexamine the path towards 2025. This Midterm Evaluation was key to the industry’s participation in ONP.

Today’s hearing comes at a pivotal point during the Midterm Evaluation process, and I thank the Subcommittees for holding this hearing. Congress must play an active oversight role during this regulatory review.

The Midterm Evaluation will entail an assessment of a broad range of issues, such as the agencies’ assumptions concerning the effectiveness and market penetration of various technologies. This Midterm Evaluation must also look at the broader issues of consumer

acceptance for new vehicles with these technologies. The result of this review will be a decision as to whether the standards for MY 2022-2025 should be adjusted.

The first step in the Midterm Evaluation was the agencies' release of the draft Technical Assessment Report (TAR) in July. The TAR analysis runs over 1,200 pages covering thousands of data points and reference models, and contains two separate analyses—one by NHTSA and one by EPA, with differing baseline years and using different analytic models.

We are currently working with our member companies and consultants to analyze all of this material so that we can provide meaningful input as quickly as possible, but we continue to be concerned with the lack of transparency in the TAR and the underlying technical analyses. We expect that the EPA's upcoming Proposed Determination and NHTSA's Notice of Proposed Rulemaking for the MY2022-2025 standards will consider all of the comments submitted on the draft TAR, and the result will be a Midterm Evaluation that is based on a complete record and the most reliable and up-to-date data.

As the EPA, NHTSA, and CARB continue through the Midterm Evaluation process and into the future, there are three crucially important issues that should be at the forefront: (1) ensuring that our customers' needs and preferences are accounted for; (2) reducing inefficiencies and inconsistencies in the system that create drag, waste resources, and discourage innovation; and (3) identifying how we can work together to achieve the nation's climate and energy goals, both through 2025 and beyond.

Role of Customers

Regulators must understand the critical role of hardworking Americans who buy cars and trucks to the success of emissions and fuel economy standards now and through 2025. Customers determine, by their purchasing decisions, what vehicles are driven on our roads and what real world fuel consumption and emissions will be. They have specific needs and wants when they are considering a vehicle purchase, and technology and the price of the vehicle can factor into that decision. The draft TAR includes only a very brief discussion of the role of consumers, yet consumers' behaviors and attitudes are key to the future success of the program.

News coverage of the draft TAR release focused on a number – a miles per gallon (mpg) figure (50.8 mpg). This figure represents a target for fleet average fuel economy in 2025 based on revised estimates about what the vehicle fleet mix will be in the future. The target reflects only what size and types of vehicles customers are expected to purchase. The target does not necessarily measure the technological capabilities of manufacturers in improving efficiency or in developing alternatives to the internal combustion engine. In an environment of historically low gas prices, to what degree will consumers value more costly technologies that save fuel? As automakers employ more innovative fuel-saving technologies, will consumers embrace those technologies? These questions must be addressed.

According to the TAR, additional technologies beyond what is on the road today will be needed to meet the standards through 2025. Our initial analysis of the TAR shows that the agencies overestimated the efficiencies of many technologies and that as a result, more technologies will be needed than those included in the TAR. This will increase prices beyond earlier estimates and

may result in customers having to make trade-offs between fuel efficient technologies and other options, including vehicle size.

The footprint-based standards were intended to adjust for shifts in consumer tastes. However, this is only a one-dimensional view based on vehicle size (large sedan vs. compact car) or vehicle class (car vs. truck). The standards do not account for changing preferences between similarly sized vehicles in the same fleet or powertrain options within the same vehicle model. When consumers are considering the purchase of a new car or truck, they are thinking about much more than size. They are thinking about safety, utility, and reliability. A truck buyer will have a choice between a V6 and a V8 engine in the same model. The buyer of a particular car can choose to power it with a V6 engine, a turbo-charged inline 4, or a hybrid. Ultimately, consumers select a vehicle that meets their needs at a price they can afford.

Cost to Consumers

Cost is a significant factor in these purchasing decisions. Today, the average price of a new vehicle is estimated at \$33,560, already a 2.6% increase from the previous year.¹ According to the draft TAR assumptions, the proposed standards by MY 2025 would increase the cost of a new vehicle, on average, by between \$894 and \$1,017 compared to a MY 2021 vehicle.² Our preliminary analysis shows that this number increases by \$356 (or an additional 35-40%) when accounting for electric-drive vehicles that are required by the Zero Emission Vehicle Mandate.

¹<http://www.usatoday.com/story/money/cars/2015/05/04/new-car-transaction-price-3-kbb-kelley-blue-book/26690191/>.

² Draft TAR at ES-8.

This has a significant impact on Americans' monthly budgets, and the overall cost of the average vehicle is now more than half of the 2015 median income of \$56,500.³

Further, these estimates assume the car buyer will choose to spend the extra money on the types of technologies needed to achieve the standards, *i.e.*, purchasing the hybrid sedan instead of the one with the V6. The draft TAR also assumes that the increased purchase cost to consumers will be offset by fuel savings over the course of ownership of a more fuel efficient vehicle.

In an environment of low gas prices, many consumers will not see sufficient savings to justify the increased up-front cost of the advanced technology vehicle. Consumer research shows that car buyers will purchase a more expensive, high fuel economy vehicle only where the payback period (the period over which the increased upfront cost of the vehicle is offset by the reduced cost of fuel purchases) is between two and three years⁴. This stands in stark contrast to the five to six-and-a-half-year payback period assumed in the draft TAR.⁵ Further consideration must be given to the upfront costs consumers can manage and the time period over which that upfront cost would be recouped.

Additional Consumer Acceptance Factors

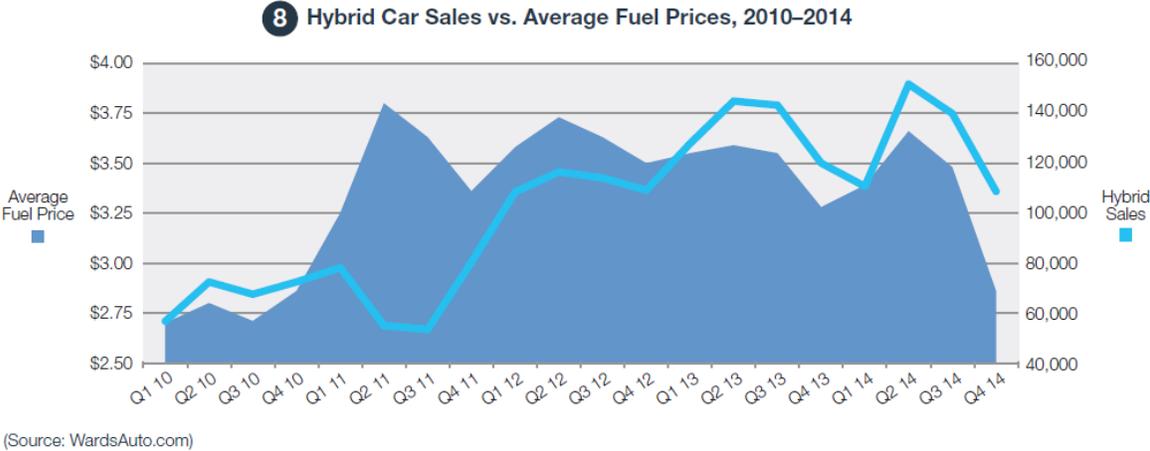
In addition to the question of what consumers can afford, there is also a question about what consumers will accept in terms of vehicle technologies, especially as the technologies affect how consumers drive, the feel of driving, or behaviors related to driving (*i.e.* the need to charge your

³<http://www.nytimes.com/2016/09/14/business/economy/us-census-household-income-poverty-wealth-2015.html? r=0>.

⁴ National Academies of Science. "Consumer Impacts and Acceptance Issues." *Cost, Effectiveness and Deployment of Fuel Economy Technologies for Light-Duty Vehicles*, 317.

⁵ Greene, D. et al. "The Case for Market Failure." *Reducing Climate Impacts in the Transportation Sector*, 195-6.

vehicle instead of going to the gas station). The sale of gasoline-hybrid vehicles, which have been in the market for more than twenty years, serves as a strong proxy for consumer acceptance of advanced technology vehicles, and the impact of gas prices on those sales. What the research shows is a declining demand for hybrids as gasoline prices have fallen.



The data and the consumer research show that the overall cost of advanced powertrain vehicles, as well as the price of gasoline, play a significant role in the willingness of consumers to pay the increased price for these vehicles.

In addition to cost, the regulators must assess how consumers will react as fuel saving technologies have a more direct and noticeable impact on the driving experience. Technology will matter more to consumers in terms of the perceived trade-offs. Even today, car buyers do not necessarily think about the option of choosing a turbocharger on their vehicle, but they do react to its potential impact on performance. How will they think about start/stop technology – is it a benefit or a daily irritant? Or, will buyers of battery-electric vehicles be overly concerned with

finding the charging station closest to their workplace? As automakers develop new innovations to save fuel and reduce emissions, these technologies will become more visible to consumers and will likely become more of a “choice” in the purchase decision process. We need to carefully consider these questions going forward to make sure that, even if the technology can get us to 2025, consumers are along for the ride as well.

The Need to Maintain a National Program and Further Harmonize the Standards

Regulatory misalignment creates drag in the system. It prevents automakers from finding the most efficient and cost-effective path for improving fuel economy while also responding to consumers’ needs. Thus, a key goal of the Obama Administration’s 2017-2025 MY standards was to create “a unified approach that harmonizes NHTSA’s CAFE standards for fuel economy, the Environmental Protection Agency’s automotive greenhouse gas standards under the Clean Air Act, and California’s greenhouse gas program.”⁶ This approach was intended to address the concern that different standards at the federal and state levels would diminish the overall benefits of establishing *any* standards. The extent to which the standards are harmonized is one of the most important questions to be answered in this Midterm Evaluation. Unfortunately, today’s programs administered by EPA, NHTSA and CARB remain different in many significant ways.

Harmonization between Federal GHG and CAFE Programs

One of the fundamental goals of ONP was unification and alignment of two federal programs flowing from different statutes: the Clean Air Act and the Energy Policy and Conservation Act (EPCA). A real challenge posed by the two federal programs is that they were developed to

⁶ https://www.whitehouse.gov/sites/default/files/fuel_economy_report.pdf.

achieve different goals – reducing petroleum consumption in one case and reducing GHG emissions in the other. As a result, the two programs do not equally recognize the societal benefits of the technological strides the automakers are making for the environment. Further, the tools built into the programs to balance vehicle product planning with the increasing stringency of the standards are different, in some cases due to differences in statutory authority. The current scheme creates friction and drag in the system that slows innovation and results in unnecessary additional compliance costs ultimately borne by consumers with no additional environmental or energy benefits.

Despite statutory differences, which we would encourage Congress and the agencies to work to resolve, there is more that can be done to align the two federal programs. Areas where harmonization could provide the greatest benefit include:

Different standards and credit programs. Contrary to the promise of harmonization, which encouraged the manufacturers to support the program, the currently proposed standards result in a scenario in which a manufacturer could comply with one standard but violate the other. A harmonized program would not allow for such anomalies. Differences in the GHG and CAFE credit programs add unnecessary costs and complexity.

The agencies' Midterm Evaluation methodologies: The agencies use different models to assess the national program standards and answer questions such as the efficacy of fuel economy technology and its costs. The agencies have used two different baseline fleets (MY2014 and MY2015) to develop modeling for the draft TAR, and this divergence in modeling results in further challenges to program alignment. If agencies could agree to start in the same place, their modeling would yield clearer and more transparent results. Global

Automakers urges the agencies to develop a single, robust model that uses the same assumptions and other inputs based on the most up-to-date information available about the fleet and the technologies used for fuel economy and GHG reductions to create the starting point for any modeling.

Prior to the release of the draft TAR, Global Automakers and the Alliance of Automobile Manufacturers submitted a petition to NHTSA and EPA outlining some of the misalignments between the agencies' programs. We request that the agencies act expeditiously on this petition.⁷

Harmonization between the Federal Program and California

California, eleven additional states and the District of Columbia have adopted the California GHG program, which is part of ONP through a “deemed to comply” provision. This provision was critical to the auto industry’s participation and commitment to support the ONP, since without it manufacturers would be faced with a patchwork of individual federal and state standards and compliance fleets. These provisions remain critical to the success of the program going forward, and we urge California to continue its commitment to the ONP. There is, however, room for greater harmonization between California and the federal agencies. Areas for further alignment include:

CARB regulatory timeline: While CARB is participating in the national Midterm Evaluation, it is also undergoing a midterm review of its own GHG program that is further along than the federal review and will likely make critical decisions well ahead of the federal process. It is

⁷http://www.globalautomakers.org/system/files/document/attachments/joint_alliance_-_global_petition_for_rulemaking.pdf

difficult to understand how standards can be aligned when the agencies are on such different schedules. These differences also mean that the same information available to the federal agencies will not be available to CARB, leading to the potential for very different conclusions. Global Automakers urges the federal agencies and CARB to align their regulatory schedules.

The Zero Emission Vehicle Mandate: In addition to its GHG emissions regulations, California has adopted a zero emissions vehicle (ZEV) mandate that specifies requirements for the sale of specific technologies—which include battery-electric, plug-in hybrid-electric, and fuel cell-electric vehicles—in the state through 2025. This mandate has been adopted by nine other states, primarily in the Northeast.⁸ Above and beyond these regulatory steps, California and seven of the other ZEV states signed the ZEV “Memorandum of Understanding,” under which the states have committed to building a ZEV market of 3.3 million cumulative ZEV sales by 2025. The ZEV mandate is regulated and enforced separately from the ONP, but greatly impacts the ONP.

CARB estimates that the incremental additional annual compliance cost of the ZEV regulations in California alone is approximately \$2 billion, with total costs through 2025 reaching \$10.5 billion and an estimated per vehicle cost to consumers of up to \$14,500.⁹ This scales up to \$24 billion dollars, as a conservative estimate, when all ten ZEV states are considered. This incremental cost for the ZEV program and technology is on top of the requirements set by the

⁸ The states that have adopted the California ZEV mandate are Connecticut, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Rhode Island and Vermont. For more information, please visit <http://www.drivingzev.com/>.

⁹ California Environmental Protection Agency Air Resource Board, Staff Report <http://www.arb.ca.gov/regact/2012/zev2012/zevisor.pdf>.

fuel economy and GHG emissions standards under One National Program. Whether or not a manufacturer needs ZEVs to comply with the fuel economy and GHG emissions standards does not matter; the ZEV mandate forces a certain technology pathway by requiring ZEVs to be sold in ten states. This mandated focus on ZEV sales forecloses the use of more efficient and more cost effective technologies to reduce GHG emissions. The ZEV mandate, in just ten states, increases the compliance cost of the national program and drives up vehicle prices for consumers in all fifty states.

In the current draft TAR, some of the assumptions made by the EPA have included the benefits of the ZEV mandate and counted the vehicles in the estimated compliance scenarios, but not the costs. Vehicles produced under the ZEV mandate should and must be counted and considered, but the costs of producing those vehicles must also be part of any thorough assessment. The agencies should take a consistent approach: just as the agencies account for both the benefits and costs of emissions reducing technologies for internal combustion engines, they should account for both the benefits and costs of the ZEV mandate. Moreover, in the current simulations, the agencies assume full compliance with the ZEV mandate in California and the nine other states. In other words, they assume that the projected 3.3 million ZEV vehicles and the necessary electric and hydrogen infrastructure to support them are fully in place and functioning at full capacity.

But the reality is that consumers are not embracing these technologies at the desired or projected rates, and states are not investing in the refueling infrastructure at the rate needed to support the vehicles, as many states have put other budget priorities ahead of support for ZEVs. Vehicle registration data indicates these vehicles, as a percentage of all new automobiles registered,

represented six tenths of one percent (0.6%) of the nation's market in 2015.¹⁰ The new vehicle market share of these vehicles was in 2014 at 0.7%, and in a year of record low gas prices and near record overall vehicle sales, battery electric, fuel cell electric, and plug-in hybrid electric vehicles did not increase in the market at the same rate as traditional cars and trucks.

While these advanced technology vehicles offer the possibility of zero-emission travel, they also present many challenges. Putting the technological considerations aside, more research is needed to better understand the consumer acceptance of ZEV technology. In order to increase deployment of these technologies, barriers such as cost, refueling infrastructure, consumer acceptance and other market externalities must be addressed. The marketplace for these vehicles is still in its early stages. Although additional technological advancements are expected for these vehicles—including improved range, reduced costs, and additional model offerings—consumer demand remains low, requiring additional time, resources, and investments by all stakeholders to support market development.

Importantly, the ZEV program produces no incremental GHG emissions benefits despite the high compliance costs. Current CAFE and GHG emissions standards already specify each manufacturer's total fleet-wide emissions, and therefore, in a system that averages together all vehicles in a manufacturer's fleet, the fleet-wide emissions standards act as a cap when combined with an overall compliance fleet strategy.

Given the cost, lack of incremental emissions benefits, and inflexibility of the mandate with regard to market-based factors, Global Automakers remains concerned about inconsistencies

¹⁰ IHS Global Vehicle Registration Data, January-December 2015.

between the ZEV mandate and the goal of a harmonized national CAFE and GHG program. EPA, NHTSA and CARB should evaluate and incorporate the costs of the ZEV program as a required technology pathway in the CAFE and GHG Midterm Evaluation.

Encouraging Innovation and Looking to a Future Beyond 2025

As the GHG and fuel economy standards become increasingly more stringent, it will be important for regulators to think beyond the combustion chamber and tailpipe, and to recognize that significant emissions reductions can be achieved through new and innovative technologies in broader realms and applications. Some of these technologies result in improving the fuel economy and GHG emissions of the specific vehicle to which it is applied. The “off cycle” program in ONP is intended to give manufacturers GHG and fuel economy credits for innovative technologies that result in real world fuel economy improvements that may otherwise not be accounted for by existing agency fuel economy and emissions laboratory testing programs. However, certain aspects of that program have become extremely burdensome and difficult for manufactures to use, which discourages such innovation. The agencies should be looking at how to enhance the off-cycle program to encourage innovation and ensure the benefits of additional, and real, GHG reductions.

The EPA and NHTSA should start thinking creatively about how new connected and automated vehicle technologies entering the marketplace will advance the goals of the GHG and fuel economy programs. With every year, automakers are innovating and developing vehicles that have the potential to revolutionize the overall driving experience while reducing energy consumption. Automated vehicles, with features available now like automatic emergency braking and lane departure warnings, help reduce crashes and associated traffic congestion.

Additionally, Dedicated Short Range Communications (DSRC) devices, utilizing the 5.9 GHz spectrum band, allow cars to communicate with each other and with the surrounding infrastructure leading to fewer crashes, less congestion, and other potential benefits. NHTSA agrees that this technology could be a "game changer," potentially addressing 80% of vehicle crashes involving non-impaired drivers. Connected car technologies that help reduce crashes and improve traffic management have the potential to make cars dramatically safer while reducing emissions - saving lives, saving fuel, and saving time spent on the road.

Global Automakers believes that the existing off-cycle credit program should account for demonstrable, real-world GHG emissions benefits from the application by automakers of these advanced technologies. We would welcome the opportunity to discuss with Congress and the agencies ways to make the off-cycle credit program more efficient so that it can do what it was intended to do—*i.e.*, incentivize investment in innovations that provide real-world improvements in fuel economy and GHG emissions that are not captured by EPA's existing fuel economy and emissions testing program—for individual vehicles and the fleet as a whole.

Now is the time to not only think broadly about ways to improve fuel economy and reduce GHG emissions under the current regulatory framework, but also look beyond 2025. Regulators and policymakers need to investigate the real-world benefits of connected vehicles, explore the possibilities that innovations in smart cities offer, and examine new models of car ownership and use that reflect the changing face of the consumer. These factors highlight the opportunities brought by the tremendous transformation occurring in mobility. These innovations are powerful in themselves, but together, they create significant opportunities for reducing GHG emissions and petroleum use.

We need to continue to work together to develop policies that consistently cover the entire country, and think broadly about fuel use and emissions. The question is not whether to reduce carbon produced by transportation, but how best to do it: how to create the right regulatory framework; promote innovation; and offer attractive solutions for consumers to choose vehicles that safely and efficiently get them to their destinations. We need to consider if the current regulatory framework is best suited to address the changing nature of the industry and mobility generally.

Conclusion

Global Automakers appreciates the Subcommittees' thorough attention to the Midterm Evaluation on GHG and fuel economy regulations. Congressional oversight of this review process is crucial given that these regulations will have a significant impact on our customers and your constituents for years to come.

The review of the assumptions that went into the MY 2022-2025 standards must be science-based and data-driven because the implications to customers are significant. We need to work together to eliminate inconsistencies in the national program in order to foster innovation and help reach our shared policy goals.

Thank you again for the opportunity to testify before the Subcommittee.