



AUTO ALLIANCE
DRIVING INNOVATION®

STATEMENT
OF
THE ALLIANCE OF AUTOMOBILE MANUFACTURERS

BEFORE THE:
SENATE ENERGY AND NATURAL RESOURCES COMMITTEE

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PRESENTED BY:

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Chairman Murkowski and Ranking Member Cantwell, on behalf of the members of the Alliance of Automobile Manufacturers (Alliance), I appreciate the opportunity to testify today before the Committee on the innovative technologies that automakers are currently integrating into their vehicles – making today’s automobile among the most sophisticated technology owned by consumers.

Alliance members account for 75 percent of annual car and light-truck sales by revenue in the United States. The Alliance includes amongst its diverse membership companies headquartered in the U.S., Europe and Asia, including the BMW Group, Fiat Chrysler Automobiles US, Ford Motor Company, General Motors Company, Jaguar Land Rover, Mazda, Mercedes-Benz USA, Mitsubishi Motors, Porsche, Toyota, Volkswagen Group of America and Volvo Car Group.

This hearing could not have come at a better time – fresh off a record-breaking year for auto sales. Automakers sold 17.5 million cars and light-trucks in 2015, a 5.7% sales increase over 2014. Considering where we were just seven years ago – in the midst of the worst economic crisis since the Great Depression – this is especially heartening. These new vehicles are among the safest, environmentally cleanest and most fuel efficient we’ve ever seen on U.S. roads.

We are experiencing the most innovative time in automotive history. Automakers continue to drive a revolution in vehicle safety and fuel-efficient technologies. Until recently, these goals – maximizing safety and maximizing environmental progress - were not always aligned. But the very nature of today’s crash avoidance technology helps harmonize safety and environmental objectives. Crash avoidance and connectivity technologies will help prevent crashes from happening in the first place, which will lead to lower congestion and result in lower overall carbon and emission levels.

Virtually every aspect of today’s automobile is high-tech. As a result, automakers are consistently recognized as leaders in research and development (R&D) investments, in the U.S. and globally. A 2013 report by The Boston Consulting Group found that almost half of the world’s top 20 “Most Innovative Companies” were automakers. In fact, last year’s top 20 list included more automobile companies than technology companies. To keep pace with ever-growing consumer demands for sophisticated new technologies, recent studies show that automakers spend more than \$100 billion annually on R&D — including \$18 billion in the U.S. alone. It’s an astounding commitment to innovation that is paying off for families and society.

A number of factors are driving this wave of automaker innovation. Companies are working to increase vehicle fuel-efficiency, while developing even more capable hybrid and electric models, more efficient power trains and lighter car bodies. At the same time, automakers are building safer vehicles with cutting-edge technologies like automatic emergency braking systems and vehicle-to-vehicle communications. A recent report by the U.S. Department of Transportation described innovations by automakers as a “revolution in safety.”

Automakers also recognize that a top priority for our nation is to put more fuel-efficient vehicles on our roads to help drive us ever closer to energy independence. As a result, the industry is rapidly deploying a range of fuel-efficient technologies, providing consumers a wide set of options that meet their lifestyle needs. In 2015, there were more than 490 models available to consumers that achieved an average of 30 miles per gallon (mpg) – up 600 percent from 2006 when there were only 69 models. And, the number of models reaching 40 MPG is growing as well, with 76 models available to consumers in 2015 – nearly a 1,000 percent increase from 2006 when there were only 7 models.

Earlier this month, at the Consumer Electronics show in Las Vegas, GM CEO, Mary Barra, summed it up nicely, stating "I have no doubt the auto industry will change more in the next five to 10 years than it has in the last 50." And that change – this evolution – has begun. While it will still be a few years before consumers will find fully autonomous vehicles on showroom floors, the American consumer already can enjoy vehicles equipped with crash avoidance or “driver assist” technologies that are focused on helping drivers avoid crashes or reducing their severity of injuries that vehicle occupants or pedestrians would have been exposed to just a few years ago.

Keep in mind, driver error remains the primary cause of 94 percent of crashes, according to the National Highway Traffic Safety Administration (NHTSA). That’s why technologies that address human error have the potential to improve safety outcomes. Crash avoidance technologies employ sophisticated software to interpret data from sensors, cameras, or radar-based technologies that allow vehicles to sense the environment around them and alert drivers of impending dangers. Some of these technologies – like blind spot warning for example - alert the driver about risks ahead or behind and potentially help him or her avoid a crash by focusing the driver’s attention on the driving task. Other technologies intervene and impact the operation of the vehicle to prevent or mitigate the severity of the crash. Intervention technologies can be invisible to the driver – electronic stability control is an example – while others actively impact operation of the car. Examples include automatic emergency braking, lane keeping assist, adaptive cruise control and automatic high beam lighting.

Even more exciting is the next phase of vehicle safety technology – cars that “talk” to each other and “talk” to the surrounding environment, often referred to as vehicle to vehicle (V2V) and vehicle to infrastructure (V2I) communications. These technical communications systems that rely on wireless spectrum allocated for public safety are designed to allow vehicles to communicate with one another and the environment around them to enhance safety and eliminate congestion in our cities and on our highways. NHTSA estimates connected vehicle technology could potentially mitigate or eliminate up to 80 percent of crash scenarios involving non-impaired drivers. The implications are profound, and justify why both automakers and the government have invested hundreds of millions of dollars in the development of connected vehicle technologies.

The potential for these innovative vehicle technologies to help reduce the number and severity of crashes is promising. But there are other benefits as well. When a crash is avoided, the traffic congestion resulting from the crash is eliminated. Reduction in traffic

congestion means less fuel is wasted by vehicles idling in traffic, thereby cutting down on greenhouse gas emissions. Crashes that don't happen also help bring down insurance costs, and productivity rises as drivers waste less time in traffic or time spent recovering from injuries sustained in automobile crashes. That's good for families, commuters and businesses that rely on a safe and efficient roadway system across the country.

We refer to these technologies collectively as “convergence” technologies because they advance safety, mobility, and environmental goals. NHTSA's automated vehicle white paper spells out the convergence of the environment and safety by noting:

“Vehicle control systems that automatically accelerate and brake with the flow of traffic can conserve fuel more efficiently than the average driver. By eliminating a large number of vehicle crashes, highly effective crash avoidance technologies can reduce fuel consumption by also eliminating the traffic congestion that crashes cause every day on our roads. Reductions in fuel consumption, of course, yield corresponding reductions in greenhouse gas emissions. To the extent vehicles can communicate with each other and with the highway infrastructure, the potential for safer and more efficient driving will be increased even more.”

And just last week, while announcing new initiatives to accelerate vehicle safety innovations, including new guidance on autonomous vehicles, DOT Secretary Foxx stated the following:

“We are on the cusp of a new era in automotive technology with enormous potential to save lives, reduce greenhouse gas emissions, and transform mobility for the American people. Today's actions and those we will pursue in the coming months will provide the foundation and the path forward for manufacturers, state officials, and consumers to use new technologies and achieve their full safety potential.”

Despite the numerous benefits of these vehicle technologies, automakers still face several roadblocks to their wide scale deployment.

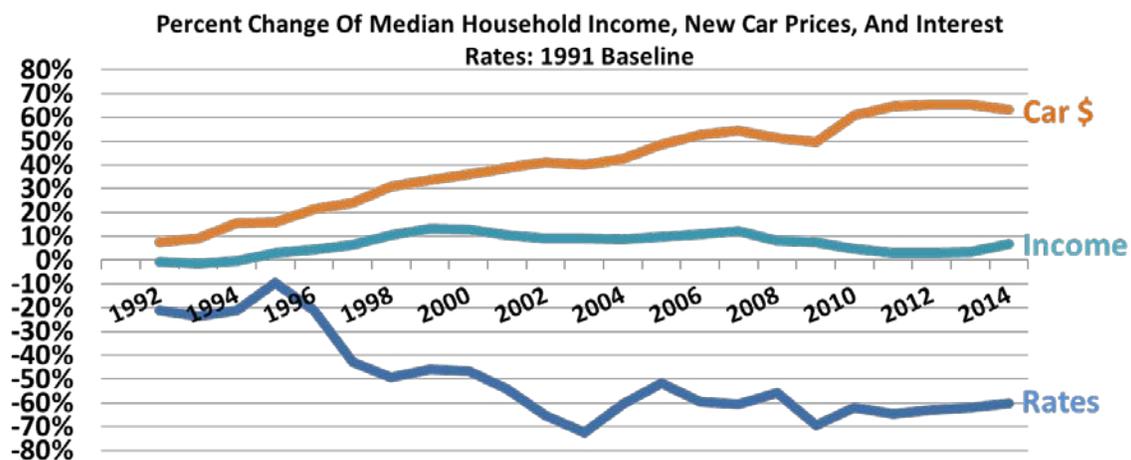
We are sometimes caught in the middle between the goals of public policy and the preferences of consumers. National fuel economy requirements – which call for a fleet average of 54.5 MPG by 2025 – are a mandate not on production but on customer purchases. So too is the Zero Emission Vehicle (ZEV) program – which requires that plug-in hybrids (PHEVs), battery electric and fuel cell vehicles (BEVs and FCVs, respectively) comprise 15.4% of all car sales in California and the northeast by 2025. It doesn't matter what automakers produce, just what consumers buy.

And while EPA and the California Air Resources Board (CARB) are understandably focused primarily on reductions of greenhouse gas emissions, consumers have a broad array of goals in mind when they buy a vehicle – everything from functionality, cost of operation, design, technology, safety features, performance, hauling, towing and reliability. Do consumers like fuel efficient vehicles? Absolutely. But are they always

looking to optimize fuel efficiency solely? No. And that's especially true when gas prices have collapsed and the fuel efficiency of conventional engines has improved so significantly.

We see this reflected in vehicle sales figures. Earlier in my testimony, I mentioned that automobile manufacturers sold more cars than ever last year; however, of the 17.5 million vehicles sold, only 116,548 (or less than one percent) were PHEVs or BEVs. In fact, automakers have sold 400,639 PHEVs and BEVs since 2010 – far short of President Obama's goal to have 1 million on U.S. roads by 2015.

The following chart illustrates how interest rates, household income and car prices have evolved over the last 24 years.



As you'll note, car prices have risen (in part to accommodate the costs of compliance with safety, energy and environmental requirements), household income has essentially been flat, and interest rates, until recently, have shown decline. In effect, in the context of stagnant income, increased vehicle costs have essentially been paid for by lower interest costs and increases in the duration of loans. As interest rates rise, higher financing costs, along with increasing compliance obligations, could make it more difficult for some families to replace their old car with a new one. And that of course is a problem on lots of levels. First, it reduces demand for new cars, which has a depressing economic and jobs impact. And, second, it impedes the replacement process – we call it the virtuous cycle - by which cleaner, more fuel efficient and safer vehicles are brought into the fleet.

So, the question is not whether our industry will continue to introduce and integrate these sophisticated vehicle innovations, but how quickly and deeply they penetrate the overall vehicle fleet due to consumer acceptance and purchases. Industry and government must continue to work collaboratively to ensure we fully maximize the benefits of these technologies while being cognizant that consumers may not be able to afford to purchase such a vehicle. After all, vehicles with great safety and environmental technologies that

get stuck in showrooms do little to advance the safety and environmental goals of policymakers.

This Committee should be commended for examining policies that will help spur, not hinder, technological innovation. For example, Chairman Murkowski's Promoting Critical Minerals Policy, S. 883, would help create a more secure domestic supply chain for critical minerals. The new generation of sophisticated and fuel-efficient vehicles is increasingly reliant on a variety of critical minerals and components. Ensuring affordable and reliable access to critical minerals is important to the continued success of the auto industry.

We have worked closely with Senators Stabenow, Peters and Alexander on the Vehicle Innovation Act, S. 1408, that the Committee also included in the Energy Policy Modernization Act of 2015, S. 2012. The Vehicle Innovation Act would promote investments in research and development of fuel-efficient and advanced safety technologies, such as V2V and V2I.

Finally, we support Senator Stabenow's efforts to expand the Department of Energy's Advanced Technology Vehicle Manufacturing (ATVM) program to allow medium- and heavy-duty truck manufacturers to qualify for loans under the program (S. 1449). Opening the ATVM loan program up to automotive suppliers has been successful; we believe affording the same opportunity to truck manufacturers will further advance our nation's goal of energy independence.

It is important to note that all of the aforementioned vehicle policies examined by this Committee are technology neutral. Automakers believe that effective energy policy must be based on broad, market-oriented principles. The market should be allowed to weigh variables like cost, quality, utility, reliability, and risk. Ultimately, consumers will decide which transportation solutions work best for them.

In closing, I would like to reiterate the excitement and innovation that characterizes today's auto sector – not just because of the record sales numbers for 2015 but also because of the tremendous performance, environmental and safety features that are being incorporated into vehicles available to consumers in showrooms across the country. Mobility has never been better.

Thank you again for providing me this opportunity and I look forward to answering your questions.