Alliance OF AUTOMOBILE MANUFACTURERS

STATEMENT

OF

THE ALLIANCE OF AUTOMOBILE MANUFACTURERS

BEFORE THE:

HOUSE COMMITTEE ON SCIENCE AND TECHNOLOGY,
SUBCOMMITTEE ON
ENERGY AND ENVIRONMENT

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PRESENTED BY:

Dr. Kathryn Clay
Director of Research

Mr. Chairman,

Good morning, my name is Kathryn Clay and I am the Director of Research for the Alliance of Automobile Manufacturers. The Alliance is a trade association made up of eleven car and light truck manufacturers including BMW Group, Chrysler LLC, Ford Motor Company, General Motors, Jaguar/Land Rover, Mazda, Mercedes-Benz USA, Mitsubishi Motors, Porsche, Toyota, and Volkswagen. On behalf of the member companies of the Alliance I would like to thank you for giving me the opportunity to speak with you about vehicle technology research supported by the Department of Energy and opportunities for this work to serve both public and industry interests in reinventing the automobile.

Meeting our national goals of reductions in greenhouse gas emissions and reducing our reliance on foreign oil will require the development of a suite of technologies. Responding to this challenge, automakers are leaders in research and development investment – total R&D investment by the industry was $79 billion in 2007, up 8 percent from the previous year.

Automakers invest in a diverse array of vehicle technologies. There is no "silver bullet," or one right answer, to what the autos of the future should look like. In the coming decades, the vehicle fleet will likely be much more diverse technologically, with growing proportions of flex fuel, clean diesel, fuel cell, hydrogen internal combustion engine, hybrid electric and pure electric vehicles. Continued improvements to the efficiency of the internal combustion engine will also play a significant role.

I would like to begin by identifying general principles that should guide the Department of Energy vehicles technology program to maximize its effectiveness, and then provide recommendations for work on two particular technologies.

First, the DOE program should aim to promote technological diversity to the maximum extent feasible, including a wide range of alternative vehicle technologies.

Second, recognizing that each alternative vehicle technology will depend on a well-functioning infrastructure, the vehicle technology program should work collaboratively with other divisions within the department that are addressing alternative fuels infrastructure challenges. For example, the transportation electrification infrastructure program, included in the Recovery Act at a funding level of up to $400 million, has the potential to significantly advance vehicles like plug-in hybrids.

Third, the program should support work that spans the full range of the R&D spectrum, including basic research, applied research, manufacturing R&D, and deployment and commercialization activities. Getting the balance right will be challenging, but no part of the spectrum can be neglected if new technologies are to be brought from the laboratory bench all the way through to the marketplace.

Fourth, the Department should consider linkages between the vehicle technologies program and government purchasing programs. Acting as early adopters, government fleets can help lead the way to bringing new automotive technology to market. The government should continue to purchase flex fuel vehicles; demand maximum utilization of E-85 in the government flex fuel fleets; use federal fueling to stimulate publicly accessible pumps; and provide funding

to permit purchase of electric, plug-in and fuel cell vehicles into federal fleets as soon as technology is available.

Finally, the Department should develop metrics of success that promote innovative, high-risk/high-reward research. This Committee originated the legislation that authorized the Advanced Research Projects Agency for Energy (ARPA-E), and well knows the importance of emphasizing this type of research. The recent stimulus package included $400 million to set-up ARPA-E. It would be unfortunate if a newly created ARPA-E had the unintended effect of decreasing investment in high-risk research in other DOE programs like the vehicles technology program. There is an opportunity for the new ARPA-E to "cross pollinate" other programs and encourage the inclusion of more forward-leaning research despite lower certainty in their outcomes.

Next, let me highlight two specific research areas that are of critical importance: the ongoing hydrogen and fuel cell learning demonstration program, and the recently established advanced battery manufacturing program.

The DOE Hydrogen and Fuel Cell Learning demonstration started in 2004. There have been 140 fuel cell vehicles introduced into the program, with 119 currently operating. There are 20 hydrogen stations in the project, located in Northern and Southern California, Detroit Michigan area, Orlando Florida, the New York City area and in Washington DC. The automotive and energy company teams include GM and Shell; Chrysler, Daimler, and BP; and Ford and BP.

Under this program, vehicles have traveled nearly 2 million miles in the project and there has been 88,000 kg of hydrogen produced or dispensed at the 20 hydrogen stations. The fuel cell vehicles have a projected durability of 1,977 hours. Testing has shown that second generation vehicles have a range of up to 254 miles with a fuel economy from 43 to 58 miles/kg. Phase two of the program is now in planning. This program has demonstrated success both in terms of hydrogen technology advancements and also for the learning demonstration model, and should continue to receive support.

Last week, President Obama announced that the Department of Energy would begin soliciting proposals for up to $1.5 billion in grants included in the stimulus to establish a domestic manufacturing base for advanced batteries. A strong, diverse supplier base for advanced batteries will help all automakers move forward to bringing electric powertrain vehicles to market. To maximize the benefit of this funding, the DOE should consider the following two elements:

First, it is essential that the recipients of this funding have the knowledge and experience needed to establish battery production at scale. Opportunities for technology transfer through joint ventures with other manufacturers could help establish a domestic advanced battery manufacturing base more quickly.

Second, the awards should require not only the construction of a battery manufacturing facility, but a strong commitment to manufacturing R&D. An emphasis on manufacturing R&D will enable the nascent advanced battery manufacturing industry to be innovative and globally

competitive. Without this as a strong program element, the manufacturing capacity we buy with our investment will become outmoded soon after it enters production.

We look forward to working with the Department of Energy to advance a diverse array of vehicle technologies. In doing so, we will position our industry to be at the cutting edge of the new clean energy economy.

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