

Statement of Jeffrey N. Shane
Under Secretary for Transportation Policy
before the
Committee on Commerce, Science, and Transportation
United States Senate
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Mr. Chairman and Members of the Committee:

Thank you for giving me the opportunity to discuss the efforts of the Administration and the U.S. Department of Transportation on policy options for encouraging alternative automotive fuel technologies. This is a matter of great importance to the economy and to our national energy security.

Back in 1985, 73 percent of the petroleum consumed in America came from domestic sources. Since then, American gasoline consumption has increased by about a third, while domestic crude production has dropped, resulting in a dramatic rise in oil imports. Today, only about 35 percent of the crude oil used in U.S. refineries is from domestic sources, and our dependence on foreign oil is increasing. This change did not happen overnight, and many of the strategies to address our oil dependence must look to the long term.

In 2003, President Bush announced a bold initiative to begin the transition to a hydrogen economy. This initiative spans a range of technologies, aimed at developing commercially viable hydrogen-powered vehicles, hydrogen production systems with carbon sequestration, and hydrogen infrastructure. The initiative's goal is to ensure the long-term energy security of America by making vehicles powered by hydrogen fuel cells a practical and cost-effective choice for large numbers of Americans by the year 2020. This is the Administration's long-term vision.

The Department of Energy is primarily responsible for hydrogen production and storage technology, fuel cell development, and light duty vehicle development.

The Department of Energy and the Department of Transportation share responsibility for codes and standards development. DOT, under its statutory authorities, is primarily responsible for ensuring the safety of hydrogen vehicles and infrastructure, and for developing the regulations and standards that ensure that safety. DOT is also responsible for ensuring that hydrogen vehicles can be integrated into the larger transportation system. Some of the specific responsibilities within DOT:

- The National Highway Traffic Safety Administration (NHTSA) concentrates its efforts on ensuring that hydrogen vehicles are safe.
- The Research and Innovative Technology Administration (RITA) coordinates the Department's Hydrogen Working Group, and represents the Department on the National Science and Technology Council and as a member on the Interagency Working Group on Hydrogen exploring hydrogen delivery infrastructure needs. A multi-modal team will develop advice for first responders for vehicle crashes and hazardous material cleanup crews at vehicle crash sites, and for safe infrastructure location and permitting. RITA is also conducting multi-modal safety research, covering vehicles, hazardous materials transport, and fixed infrastructure.
- The Federal Motor Carrier Safety Administration is developing guidelines for the operation, fueling, inspection, and maintenance of hydrogen systems in commercial vehicles.
- The Federal Transit Administration, in partnership with key stakeholders, leads a broad-based national effort focused on fuel cell buses.

- The Pipeline and Hazardous Materials Safety Administration (PHMSA) oversees the safety and security of hydrogen delivery by pipeline, rail, and truck, including existing technologies such as high pressure cylinders and emerging technologies such as metal hydrides. PHMSA will continue to provide advice for first responders to hydrogen and other hazardous materials incidents.

Coordinated codes and standards work is critical to the success of the entire hydrogen venture. Although widespread use of hydrogen-powered vehicles is more than a decade away, there are prototype vehicles on public roads now. Safety is essential to the broad public acceptance of any new technology. Manufacturers of both vehicles and infrastructure will need to know which regulatory standards they must meet before designing systems for mass production and widespread deployment.

We know that hydrogen technology development and deployment will take time. That is why the Administration is also committed to programs that will provide nearer term results.

These include:

- Rulemakings for light trucks under the Corporate Average Fuel Economy (CAFE) program. In 2002, the Congress granted Secretary Mineta's request to resume rule-making under CAFE. NHTSA's rulemaking covering Model Years 2005-2007 vehicles is expected to save 3.6 billion gallons of fuel over the life of the regulated vehicles. For model year 2008-2011 vehicles, we have proposed an innovative new approach: basing light truck fuel economy standards on vehicle

size. This approach will yield greater fuel savings for the driving public while enhancing safety and reducing compliance costs.

- Tax credits for energy-efficient hybrid, clean diesel, and advanced internal combustion engine vehicles created by the Energy Policy Act of 2005;
- The renewable fuels standard incorporated into the Energy Policy Act;
- The extension of the renewable fuels CAFE credit under the Alternative Motor Fuels Act, enacted in the Energy Policy Act;
- Multiple “clean fuels” programs for heavy vehicles incorporated into the Energy Policy Act and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). Many of these clean fuels provisions explicitly permit funding for alternative fuel vehicles.
- Alternative fuel vehicles and infrastructure continue to be eligible under the Congestion Mitigation and Air Quality Improvement (CMAQ) Program, as reauthorized under SAFETEA-LU. Under CMAQ, the Federal Highway Administration and Federal Transit Administration are pursuing a program to reduce truck and heavy vehicle idling, in cooperation with the Department of Energy and the Environmental Protection Agency.
- Programs to mitigate fuel-sapping congestion through encouraging high occupancy vehicle (HOV) lanes, congestion pricing, public-private partnerships, deployment of intelligent transportation systems; and support for transit and para-transit systems and other private vehicle alternatives.

As this portfolio suggests, we view vehicles as elements in a larger transportation system. While improved vehicles are critical to reducing fuel consumption, viewing vehicles together with roads, technology, and alternative transport modes offers important synergies. As we begin to develop ways for vehicles to communicate with the roads and with each other, emerging transportation systems will grow in efficiency and safety.

While reducing automotive fuel consumption presents a difficult and long-standing challenge, today we have certain advantages. We are living in a period of rapid innovation in automotive technology. While today's vehicles may look very much like the vehicles of twenty years ago, many aspects of engine operation are now controlled by microprocessors. Automakers have several technological options for improving vehicle fuel economy without reducing performance, including clean diesel engines and hybrid vehicles. In the next few years, we should see increased potential for advanced hybrids and advanced internal combustion engines.

Due to recent increases in fuel prices, consumers are placing a higher value on fuel economy today than in the recent past. This creates the market conditions under which advanced vehicles that offer improved fuel economy can be successful in the marketplace. We believe that the National Highway Traffic Safety Administration's proposed light truck rulemaking will also encourage manufacturers to adopt more advanced fuel-saving technologies.

Biofuels offer an alternative approach to reducing our near-term dependence on imported fuels. All of the current and near-term advanced automotive technologies that we are considering today, including hybrids, can use biofuel blends. Historically, despite a range of incentives, high

transportation costs limited the scale of fuel ethanol plants and tended to concentrate ethanol use in regional markets in the Midwest and California. However, at present, conditions are better than ever for the expansion of renewable fuels in the transportation sector.

- The renewable fuels standard enacted by Congress in the Energy Policy Act of 2005 mandates a near-doubling of ethanol use in gasoline by 2012, to 7.5 billion gallons (489,000 barrels per day). According to the Energy Information Administration, 2004 U.S. gasoline consumption was about 9.1 million barrels per day; 2004 fuel ethanol production was 3.4 billion gallons (202,000 barrels per day).
- The American Jobs Creation Act of 2004 greatly simplified the long-standing ethanol excise tax credit, offering ethanol blenders a credit of \$0.51 for each gallon of ethanol blended into gasoline. Biodiesel from waste oils is eligible for a \$0.50 per gallon tax credit (through 2008) and biodiesel from virgin agricultural materials is eligible for a \$1.00 per gallon tax credit.
- High petroleum prices and the Federal excise tax credit have greatly improved the competitiveness of alcohol fuels and biodiesel.
- The Energy Policy Act of 1992 and the CAFE credit provisions of Alternative Motor Fuels Act have created a fleet of more than 4 million “ethanol ready” vehicles that can use E85 ethanol blends at their owners’ discretion, and essentially all gasoline vehicles sold in the United States can use up to 10 percent ethanol blended in gasoline without affecting their manufacturers’ warranties.
- There is widespread commercial interest in expanding production of both ethanol and biodiesel. The Renewable Fuels Association reports that there are 92 ethanol plants in the United States, with current fuel ethanol capacity of 4.2 billion gallons per year, and

that 1.4 billion gallons per year of additional capacity are currently under construction, (including 23 new plants and expansions of existing facilities). Biodiesel production has advanced in recent years, although it is not nearly as well established as ethanol. The National Biodiesel Board indicates that 2004 production was 25 million gallons (1,600 barrels per day) and they expect 2005 production to triple to 75 million gallons (4,800 barrels per day). The Federal Transit Administration has a small program to test biodiesel on transit buses in Missouri. There is interesting research underway on biodiesel as well. A recent article in *Science* described a new, less energy-intensive method for making biodiesel that would permit ethanol plants to switch between making ethanol and biodiesel, and opens a potential pathway for generating biodiesel from plant wastes."

- The Energy Policy Act extended the Federal tax credit for small ethanol and biodiesel producers. Small producers (less than 60 million gallons per year) can receive a tax credit of \$0.10 per gallon for the first 15 million gallons of annual production.

In addition, the Energy Policy Act contains incentives for production of cellulosic ethanol, which, if the technology can be made economical, offers the opportunity to convert low value crop residues into fuel-grade ethanol. Biodiesel can be made from waste oils in low volumes (limited by feedstock availability), and from a range of oilseeds in potentially larger volumes.

Biofuel usage is expanding rapidly. Widespread commercialization of cellulosic ethanol would have a positive impact. Essentially all motor vehicles on the road today can use biofuels in blends of less than 10 percent. There may be continuing commercial and economic barriers to

expanding biofuel production. The commercial conditions under which biofuels are produced and consumed have changed greatly. In the coming months, the ways in which fuel producers and consumers will adapt to the new situation created by recent legislation and the continued high fuel prices will become clearer.

Reducing our Nation's dependence on oil cannot be accomplished by any one simple act. The Administration's efforts recognize that there are actions all of us can take today and in the near term, and there are other actions and revolutionary new technologies that require a long-term commitment for successful deployment. The Department of Transportation is pleased to play a vital role in these in these important and ongoing efforts, ensuring public safety in transportation while helping innovative technologies roll out on America's roads.

This concludes my statement. I will be glad to answer your questions.