STATEMENT OF:
THE UNION OF CONCERNED SCIENTISTS

BEFORE THE:
SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION'S SUBCOMMITTEE ON SURFACE TRANSPORTATION AND MERCHANT MARINE

PRESENTED BY
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Thank you Mr. Chairman and Members of the Committee for the opportunity to testify before you today. My name is David Friedman. I am the research director and a senior engineer with the Union of Concerned Scientists' (UCS) Clean Vehicles Program. UCS is a nonprofit partnership of scientists and citizens that has been working at the intersection of science and policy for over 30 years.

The president could not have been more correct when he told the nation that we are addicted to oil. Data from the Energy Information Administration indicates that we import over sixty percent of our oil and other petroleum products. Last year the cost of our oil and petroleum imports was equivalent to almost one-third of the United States trade deficit. At today's oil prices, we are sending more than $500,000 to other countries every minute just to purchase that oil and other petroleum products. In other words, every minute over one half of a million dollars that could have been spent creating U.S. jobs and strengthening our economy leaves this country. Forty percent of the oil dependence responsible for this is due to the 220 million cars, SUVs, minivans and pickup trucks we drive every day.

The cost of our addiction, however, does not end there. For each mile our cars, SUVs, minivans and pickups drive each year, another pound of global warming pollution (carbon dioxide equivalent) is released from the tailpipe. That means each vehicle produces six tons of global warming pollution from its tailpipe every year and the fleet of automobiles produces over 1,300 tons. Including the global warming pollution emitted in making the fuel required for these vehicles, the total impact represents about 1,700 tons of global warming pollution, more than most countries produce from their entire economies. Only the entire economies of the United States, China, and Russia exceed the global warming pollution resulting from our cars and trucks alone.

Since the time when Model T was first mass-produced, global warming pollution from cars and many other sectors throughout the world have increase carbon dioxide levels in the atmosphere to levels higher than the globe has experienced for the past 650,000 years. We are already seeing the impacts. Nineteen of the twenty hottest years on record (since 1880) have occurred since 1980. Five of the six hottest have occurred just since 2000. As the problem accelerates, we will be forced to rename Glacier National Park as the glaciers disappear and dramatic impacts will be felt in lives and economies throughout the country and the world.

Ending the Addiction

As long as the United States is tied to oil, American's pocket books will be susceptible to instability in the Persian Gulf and other regions of the world. Rising oil consumption in China and other developing nations will only make matters worse. And as long as the United States is tied to fossil fuels, we will be contributing to many significant environmental problems that impact our health and our economy, especially the reality of global warming.

These facts make the destination clear—in the next fifty years, we must switch to clean, renewable fuels to power our cars and trucks—but the reality is that there are no silver bullets to tap into overnight. We will continue to be dependent on oil as a transportation fuel for decades to come. Yet we have the ability to dramatically lessen the addiction. There is reason for optimism if we put policies in place that ask both consumers and automakers to take the necessary steps to increase fuel economy and reduce travel. Both of these steps will also ensure that renewable fuels work in the long run, because if we keep increasing the amount of fuel we use, the alternatives will take up too much land, be too expensive, and may just lead to imports of alternatives from countries that are just as unfriendly towards U.S. interests as most oil producers are today.

Consumers can and must do their part by keeping their tires pumped up, getting regular vehicle maintenance, reducing travel through carpooling, taking transit when available, walking or biking if it is safe, combining trips, and purchasing the highest fuel economy car or truck that meets their needs. But the last step is very difficult in today's market. The average fuel economy of the fleet of new cars and trucks sold in the U.S. in 2005 was lower than it was in 1985. Automakers note the number of models on the market that get more than 30 miles per gallon on the highway, but they fail to mention that most of those are mid-size or compact cars and that consumers spend more of their time driving in congested urban conditions. The answer to high gas prices, our oil addiction, and our warming planet is not limiting fuel economy choices as automakers have done, but rather giving consumers who do need vehicles of all shapes and sizes the safe, high fuel economy options they need to be able to find in the showrooms.

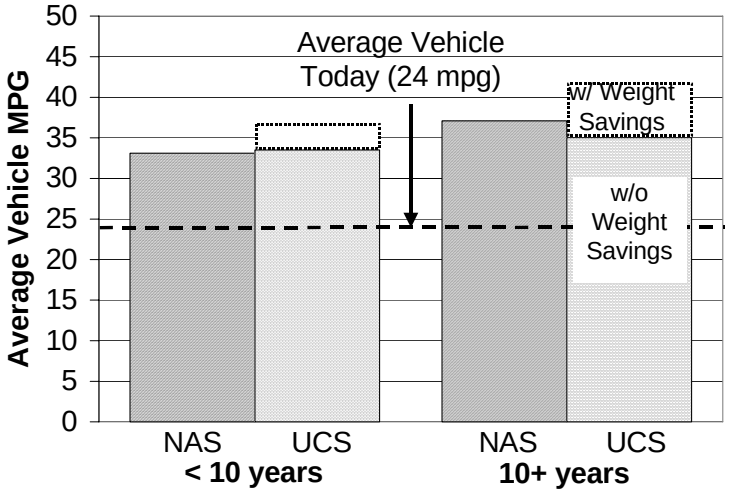
Consumer Choice

In the past, fuel economy standards have ensured that consumers could have higher fuel economy vehicles and not have to give up options. Just as we see today, automakers were not ready for the gasoline shortages and the price spikes that occurred in the early 1970s. As a result consumers jumped on the only option they had at the time, relatively poorly designed smaller cars. However, as fuel economy standards were fully phased in automakers switched from giving consumers poor choices to putting technology in all cars and trucks so consumers could have options in the showroom with 70% higher fuel economy than they had in 1975 (2005 EPA Fuel Economy Trends Report).

Today, consumers have vehicles that are larger and faster than they had in 1975, but they get higher fuel economy due to Corporate Average Fuel Economy Standards. If the fuel economy of today's cars and trucks was at the level the fleet experienced in 1975 instead of today's 25 miles per gallon, we would be using an additional 60 billion gallons of gasoline on top of the 140 billion gallons we will use this year. At $2.50 per gallon, that represents $150 billion dollars

saved. That number could have been much higher, however, if fuel economy standards had not remained essentially unchanged for the past two decades.

The fact that fuel economy standards have remained stagnant has yet again allowed automakers to set up consumers for a fall. With regular gasoline hovering around $3.00 per gallon, consumers have few good choices in the marketplace. Hybrids are now on the market and their sales are growing, but manufacturer production capabilities are very limited and will be slow to grow while the hybrids carry a higher price premium. What is lacking from the market is the over 40 mpg family car, the 37 mpg minivan, the 34 mpg mid-sized SUV, and the 30 mpg pickup. These are the vehicles that the National Academies report, requested by Congress, shows are possible with existing technology (Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards, page 45). Together in a fleet of the same make-up as the NAS analyzed, these vehicles would average 37 mpg. Over the life of these vehicles, consumers would more than pay for the cost of the technologies, saving a net of $2,500, essentially paying consumers to help cut our oil dependence and global warming pollution.



Notes:
a. NAS values based on sales-weighted average of individual class fuel economy estimates from NRC, *Effectiveness and Impact of CAFE Standards*. January 2002.
b. UCS estimates from Friedman, et al., *Drilling in Detroit*. June 2001.

All that is possible without hybrids, diesels, or high-strength materials, as the NAS study did not include these in their detailed technology evaluations. In fact, as noted in a February 9, 2005 press release from Resources For the Future regarding the former RFF president's statement before the House Science Committee, "[Paul] Portney, chair of the National Research Council's Committee on Effectiveness and Impact of CAFE Standards, noted that, upon reflection, the committee's 2001 report may have been too conservative in its fuel economy recommendations… 'It might be possible to meet more stringent fuel economy standards at lower costs than the committee foresaw in 2001.'"

Union of Concerned Scientists' analysis of conventional technology, which included the NAS technologies as well as high-strength materials, indicates that such a fleet could go even farther. Examples of some of these technologies are shown in Figure 1 at the end of this document. A fleet that put these technologies to work could reach 40 mpg over the next ten years while providing the same size, acceleration and even improved performance compared to today's vehicles. Tapping hybrid and diesel technology could bring the fleet to more than 50 mpg by 2025.

Setting Standards and Presidential Authority

With the NAS study as its foundation, Congress can and should set a fleetwide fuel economy target for all new cars, SUVs, minivans, and pickups at 37 miles per gallon within the next ten years. Congress should not defer its regulatory authority to the Administration and it need not as it can base such standards on the scientific research it requested. Congress can be confident that this is both technically feasible, cost effective, and safe. The engineers, scientists and other experts on the NAS CAFE panel noted that, "… it is technically feasible and potentially economical to improve fuel economy without reducing vehicle weight or size, and, therefore, without significantly affecting the safety of motor vehicle travel."[p. 70]

This committee has the opportunity to ensure that savings like these are realized in our near future. If Congress does not exercise this authority, consumers are likely to receive little relief from high gasoline prices. The president's recent rulemaking on light trucks will save less than two weeks of gasoline each year for the next two decades. Such a small amount will not make a significant dent in our oil addiction. Furthermore, the president's rulemaking applied size-based standards in a way that will lead to erosion of even this small amount. Improperly designed, size-based standards encourage automakers to market larger, lower fuel economy vehicles, and allow them to abandon some sectors of the market. In the 1990's we saw the impact of improperly designed class-based standards as automakers took advantage of the loophole allowing a lower standard for minivans and SUVs despite the fact that they are passenger vehicles and should have been included in that category instead of with pickups and cargo vans in the non-passenger category established by Congress. The result has been a decline in fleet-wide fuel economy from its peak of nearly 26 mpg in 1987 to 24.6 mpg in 2005 (EPA Fuel Economy Trends Report).

Congress can ensure that this erosion does not happen again by requiring a fleet-wide fuel economy backstop when giving the president the authority to set size-based standards for passenger and non-passenger automobiles. If Congress does only the latter, however, the benefits will be small to non-existent given the Administration's actions on minivans, SUVs and pickups.

Based on the guidance requested and received from the NAS, Congress should ask that the president put in place regulations to ensure that the average fuel economy of the fleet of new cars, SUVs, mininvans and pickups sold ten years from now be at least 37 miles per gallon. By doing this, Congress would be fulfilling its regulatory role by setting a fleet-wide fuel economy target that will cut oil dependence by 3.5 million barrels per day in 2025. In addition, setting a fleet-wide fuel economy target within the context of size-based standards would create a backstop that would ensure both that the oil savings are realized and that consumers will get the choices they will need in a world marked by continuing high and unstable gasoline prices and growing impacts of global warming.

Economic and Jobs Impacts of Setting Fuel Economy Targets

Contrary to claims by the auto industry, investments in fuel economy technology, just like other investments, will lead to prosperity. In order to quantify the benefits of actions to increase future fuel economy, UCS estimated the effect of moving existing technologies into cars and trucks

over the next 10 years to reach an average of 40 miles per gallon (mpg) by 2015. Slowing down the timeline or reducing the fuel economy target would reduce the benefits, but for 40 mpg we found that:

- In 2015, the benefits resulting from investments in fuel economy would lead to 161,000 more jobs throughout the country, with California, Michigan, New York, Florida, Ohio, and Illinois topping the list.
- In the automotive sector, projected jobs would grow by 40,800 in 2015.
- For consumers, the cost of the new technology would more than pay for itself, saving a net $23 billion dollars in 2015 alone.

Getting technologies like these into the fleet over the next ten years and then tapping into the growing potential of hybrid cars and trucks could get us to the point of saving five to six million barrels of oil per day by 2025 (Figure 2). That would be enough of a reduction in oil use to stop the current growth in oil demand and hold us where we are today while we wait for the breakthroughs that are needed for clean and renewable alternatives to oil. The new jobs would be created both because of investments in new technologies by the automakers and because consumers would shift spending away from gasoline to more productive products and services.

Requiring all automakers to improve fuel economy will increase the health of the industry. Companies like Ford and General Motors are currently in junk-bond status due to poor management decisions, not fuel economy standards, which have been stagnant for the past two decades. Those poor decisions have put them in a place where, just as in the 1970s, they do not have the products consumers need at a time of high gasoline prices, and they are continuing the slide in market share that began the first time they made this mistake.

In contrast to automaker claims, it is actually high gasoline prices, not technology investment, which will undermine the health of the domestic automobile industry. According to a recent study by the University of Michigan and the NRDC, a sustained gasoline price of $2.86 per gallon would lead Detroit's Big 3 automakers' profits to shrink by $7 billion as they absorb 75 percent of the lost vehicle sales as consumer budgets are squeezed compared to a scenario with gasoline at $1.96 per gallon. This would put nearly 300,000 people out of work in states like Indiana, Michigan, Ohio, Oklahoma, Texas and Wisconsin.

By requiring Ford, GM, and all automakers give consumers the choices they need, Congress can ensure automaker jobs stay in the U.S. and models like the Ford Explorer and Chevrolet Tahoe are still on the market ten years from now but they will go farther on a gallon of gas.

Safety Impacts of Setting Fuel Economy Targets

While the NAS study clearly states that fuel economy can be increased with no impact on the safety of our cars and trucks, critics of fuel economy standards often point to the chapter, which takes a retrospective look at safety. Despite the fact that this chapter did not represent a consensus of the committee (a dissenting opinion was included in the appendices) and the fact that three major analyses have since shown that fuel economy and safety are not inherently linked, claims are still made to the contrary.

First, David Greene (one of the NAS panel members) produced a report with Sanjana Ahmad in 2004 (The Effect of Fuel Economy on Automobile Safety: A Reexamination), which demonstrates that fuel economy is not linked with increased fatalities. In fact, the report notes that, "higher mpg is significantly correlated with fewer fatalities." In other words, a thorough analysis of data from 1966 to 2002 indicates that Congress can likely increase fuel economy without harming safety if the past is precept.

Second, Marc Ross and Tom Wenzel produced a report in 2002 (An Analysis of Traffic Deaths by Vehicle Type and Model), which demonstrates that large vehicles do not have lower fatality rates when compared to smaller vehicles. Ross and Wenzel analyzed federal accident data between 1995 and 1999 and showed that, for example, the Honda Civic and VW Jetta both had lower fatality rates for the driver than the Ford Explorer, the Dodge Ram, or the Toyota 4Runner. Even the largest vehicles, the Chevrolet Tahoe and Suburban had fatality rates that were no better than the VW Jetta or the Nissan Maxima. In other words, a well-designed compact car can be safer than an SUV or a pickup. Design, rather than weight, is the key to safe vehicles.

Finally, a study by Van Auken and Zellner in 2003 (A Further Assessment of the Effects of Vehicle Weight and Size Parameters on Fatality Risk In Model Year 1985-98 Passenger Cars and 1985-97 Light Trucks) indicates that increased weight is associated with increased fatalities, while increased size is associated with decreased fatalities. While this study was not able to bring in the impacts of design as well as size, it helped inform NHTSA as they rejected weight-based standards in favor of size-based standards based on the vehicle footprint.

These studies further back up Congress' ability to set fuel economy targets of 37 mpg for the fleet in the next ten years without impacting highway safety.

Conclusions

Setting a fleet-wide target of 37 mpg in 10 years while giving the president the authority to reach that target through size-based standards will save consumers money, stimulate the economy, create and protect jobs and preserve the safety of our vehicles. All of these benefits will come in addition to cutting our oil dependence and emissions of global warming pollutants from our cars and trucks.

Investing in efficiency to cut oil use, the equivalent of eating right and getting more exercise, has been overlooked for the past two decades. Fuel economy technology has gone to double the power of our car engines and increase weight by 25 percent. Consumers are clearly happy with the size and acceleration of their vehicles today. We don't have to change that. But consumers are clearly unhappy with the cost of high gasoline prices and our economy and our environment cannot sustain the impacts of our oil addiction.

Congress has the opportunity to ensure that automakers spend the next 20 years using technology to curb our oil addiction. It should not be surprising that Congress is needed to play this role, the Federal government has helped drive every major transportation revolution this country has seen, whether it was trains, planes, or automobiles. The next transition will be no different.

In addition to setting a fleet-wide fuel economy target of 37 mpg over the next 10 years, there are several different mechanisms the government could also put to work to help reduce oil usage. Among the viable options are:

- Enforceable, national oil savings targets
- Performance-based incentives for suppliers and manufacturers to produce higher fuel economy vehicles
- Eliminating the 60,000 vehicle cap on consumer incentives
- Incentives to increase alternative fuel production, including production targets, research and development, and infrastructure investments
- Incentives and requirements to increase efficiency of oil usage in the heavy duty transportation and industrial sectors
- Closure of existing loopholes in fuel economy regulations and tax laws

None of these options is a silver bullet. And some, if not all of them, are politically challenging. But by adopting a reasonable package that includes several of these measures now, we can reduce the trade deficit and create hundreds of thousands of new jobs, while steadily reducing our oil usage. And that's something I hope we can all support.

Thank you for the opportunity to testify today. I would be happy to answer any questions you may have.

Figure 1. Fuel Economy Potential for a Ford Explorer.

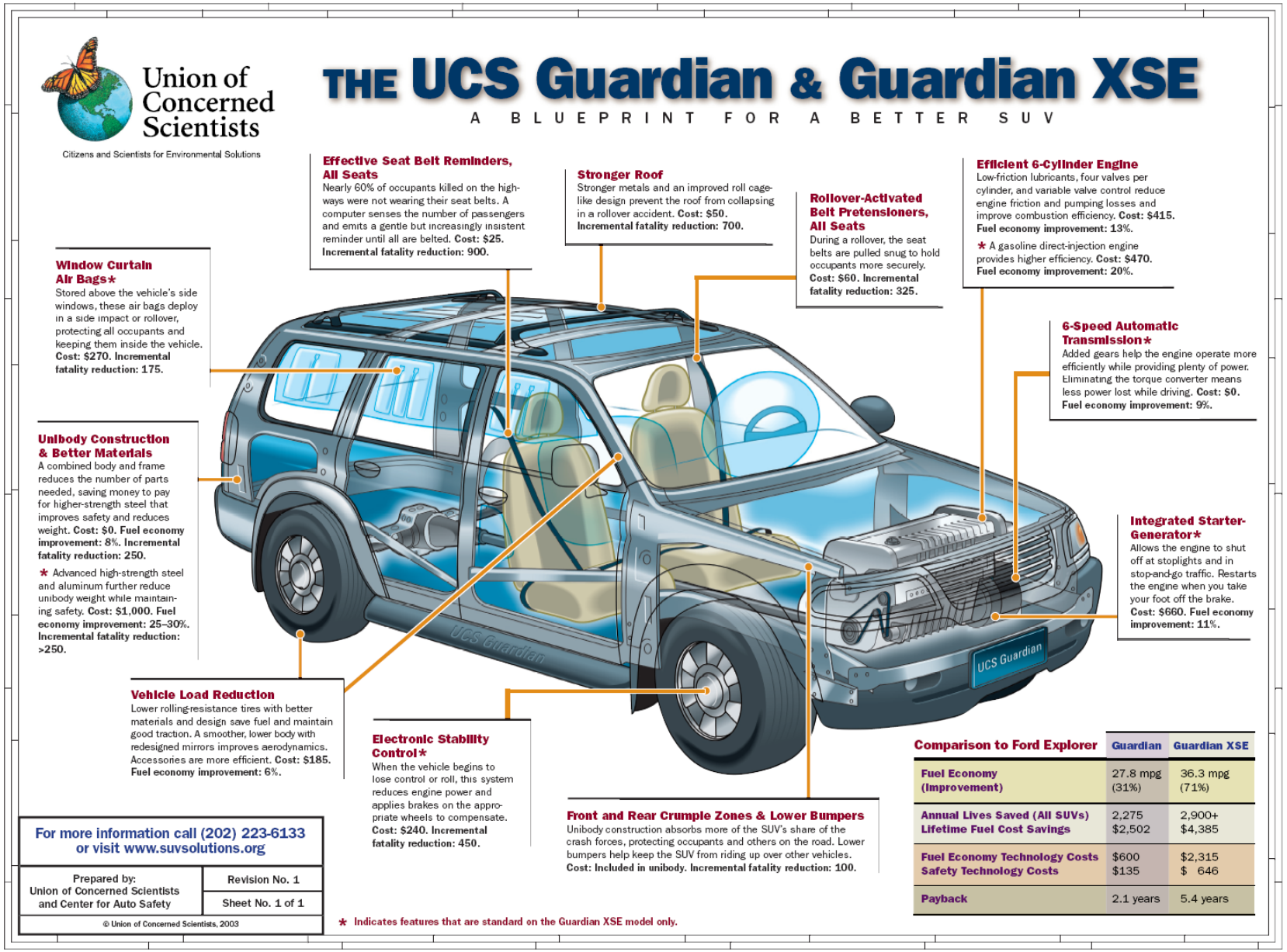


Figure 2. Oil savings potential from conventional efficiency, hybrids, and renewable fuels.