

**Testimony before
the Joint Economic Committee
Hearing on Alternative Automotive Technologies and Energy Efficiency**

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About the Alliance to Save Energy

The Alliance to Save Energy is a bipartisan, nonprofit coalition of more than 90 business, government, environmental and consumer leaders whose mission is to promote energy efficiency worldwide to achieve a healthier economy, a cleaner environment, and greater energy security. The Alliance, founded in 1977 by Senators Charles Percy and Hubert Humphrey, currently enjoys the leadership of Senator Byron Dorgan as Chairman; Washington Gas Chairman and CEO James DeGraffenreidt, Jr. as Co-Chairman; and Representatives Ralph Hall, Zach Wamp and Ed Markey and Senators Bingaman, Collins and Jeffords as its Vice-Chairs. Attached for the record are a list of the Alliance's Board of Directors and its Associate members.

Introduction

For the last four years, Congress and the President have spent innumerable hours trying to agree on ways to address the nation's dependency on oil and its adverse impacts on climate, and air and water quality. There has been much discussion about how we might ease the burdens on states and cities trying to meet Clean Air Act requirements and who is going to pay for leaks from underground gasoline storage tanks. We have debated measures to reduce greenhouse gas emissions. Meanwhile, we've watched oil prices climb from \$30 to \$60 per barrel as oil supplies get rocked almost daily by events that are

largely out of our control – Venezuelan uprisings and increased animosity toward US government policies, threatened takeovers of Nigerian oil fields, hurricanes in the Gulf of Mexico.

While we have limited control on oil supplies and prices, we can control our own demand for oil. That makes this hearing particularly important. Given that the transportation sector accounts for two-thirds of U.S. oil use and that passenger cars and light trucks consume 40 percent of that oil use, it is critical that we address vehicle fuel use.

We applaud the efforts of Congress to address the nation's energy challenges in the current conference energy bill. The tax incentives for hybrid and advanced diesel vehicles, along with technology research and demonstration programs are certainly useful. However, we cannot pretend to think that the bill before Congress will have any significant impact on U.S. petroleum use.

The Energy Bill

This week the House and Senate will be voting on the conference energy bill. This bill contains many provisions to encourage energy efficiency improvements in buildings and appliances. We applaud Congressional actions to get inefficient air conditioners, clothes washers, ceiling fans and lighting equipment out of the marketplace. We applaud the tax incentives for more efficient homes, buildings and equipment, and those that encourage the production of high-efficiency appliances.

We applaud the tax incentives for hybrid and advanced learn burn technology vehicles. We support funding authorizations for a variety of advanced transportation technology programs that could improve the efficiency of the transportation sector, including programs to encourage railroad efficiency, idle reduction technologies for heavy trucks, and ultra-efficient energy technology for air crafts.

The energy efficiency policies in the energy bill could reduce overall projected energy use by between 1 and 2 percent by 2020. It is important to note, however, that the bill is in large part an ambitious to-do list at this point. To achieve these savings, federal agencies, appropriators, states and local governments, and others will need to fully fund, implement and participate in these programs.

When it came to addressing energy use in vehicles, Congress flat out missed the on-ramp. Most, if not all, of the oil savings in the conference energy bill will be cancelled out by the increased energy use resulting from extension of the Corporate Average Fuel Economy (CAFE) credit for dual fuel vehicles. This provision allows vehicle manufacturers to take credit for vehicles that are capable of, but almost never do, run on alternative fuels. Optimistically, we would like to think that the energy bill could reduce oil use in 2020 by about 100,000 barrels per day – about 0.5 percent of anticipated oil use or between 1 and 2 days of consumption. Realistically, the overall impact on petroleum consumption will probably be a fraction of that amount.

Efficiency Technologies are Here Today

There is no shortage of technologies to improve vehicle fuel efficiency. Many of these technologies are already in vehicles, including electronic controls and ignition, light weight materials, improved engine designs. Other technologies are now being pulled off “the shelf” and increasingly deployed in new vehicles. They include (for example):

- Variable Cylinder Management – turns off cylinders when not in use.
- Advanced Drag Reduction – further reduces vehicle air resistance.
- Variable Valve Timing and Lift – optimizes the timing of air intake into the cylinder with the spark ignition.
- Reductions in Engine Friction – using more efficient designs, bearings and coatings that reduce resistance between moving parts.
- Hybrid Drive Trains – internal combustion engine combined with electric motor and regenerative braking.

These are not pie in the sky technologies or expensive gimmicks, but rather technologies that are here now. Other major technology advances appear to be on the horizon, such as plug-in hybrids and fuel cell electric vehicles.

Efficiency Technologies Are Not Being Used to Improve Fuel Economy

While advanced technologies have been, and continue to be, deployed in new cars and trucks, we’re not getting more miles per gallon (mpg) as a result. In fact, the average fuel

economy (ie., mpg) of model year 2004 vehicles is 6 percent lower than in the 1987-88 model years.

Instead of getting better fuel economy, we are getting more towing capacity, more acceleration, more weight, and more space. For example, America's best-selling truck – the Ford F-150 -- claims almost 5 tons of towing capacity. That's enough capacity to pull a 36-foot horse trailer with 4 horses inside it. In most states, that is one-eighth of the *total* legal weight (including truck and cargo) of a semi-hauler.

Our average car is a real workhorse too. The average passenger car sold today has about 185 horsepower – 40 percent more than a car sold 15 years ago. To put this in perspective, a typical passenger car sold today has the engine capacity to raise 185 soccer moms, along with 370 children, ten stories into the air in one minute. It's about the same horsepower as a large (60,000 pound) bulldozer.

And this decade looks like it could displace the 1960s as the “Decade of the Muscle Car.” According to the Classic Car and Vintage Automobile registry, more than half of the fastest production car models offered since the 1960s were offered in model years 2000 or since. The number of muscle cars offered in the last 5 model years exceeds the number of muscle cars in the 1960s, 70s, 80 and 90s combined.

Vehicle fuel economy is a huge reservoir of low-cost energy waiting to be tapped. According to EPA estimates, if automakers had applied the technology gains since 1987 to improving fuel economy, average fuel economy would be 20 percent higher. If the nation had taken this path, we could be consuming between one and two million barrels

per day less than we are – that’s about equivalent to the more optimistic EIA projections of oil output from the Arctic National Wildlife Refuge (ANWR).

Policies to Increase Fuel Economy

For the last 20 years, the nation’s oil policy has in effect been made in America’s car showrooms. It is time for the federal government to provide more guidance in the vehicle marketplace. There are many policies that could be employed to ensure at least a portion of these advances gets used to improve fuel economy. A few of them are discussed here.

Increase and Reform Corporate Average Fuel Economy Standards

Today’s supply disruptions are of similar magnitude to the 1970’s as OPEC exercised its market power to raise prices. Back then, America’s response was to take serious measures to encourage improvements in automobile fuel economy. Between 1975 and 1985, fuel economy standards were used to help achieve a 70% improvement in new vehicle fuel economy. According to the National Academy of Sciences, CAFE standards are still saving 2.8 million barrels per day.

Since the mid-1980s, CAFE standards have been largely unchanged due to political pressure from the automobile industry. The current standard of 27.5 miles per gallon (mpg) for automobiles has been in place since 1985. The current 21 mpg standard for light trucks is only 0.5 mpg above the 1987 standard (it is now set to rise to 22.2 mpg by 2007). To the extent that fuel economy standards reflect fuel economy levels achievable two decades ago seriously undermine their effectiveness.

Old testing methods, a loophole for “trucks”, and other loopholes have further undermined the effectiveness of existing CAFE standards. EIA estimates that the actual fuel economy of vehicles is about 20 percent lower than the CAFE standard test results suggest. In other words, the 27.5 mpg standard for cars is really a 22 mpg standard and the 21 mpg truck standard is really a 17 mpg standard. Fuel economy testing methods should be revised to better reflect real-world driving.

Fuel economy standards allow vehicles classified as trucks to meet less stringent standards than are imposed on passenger cars. When this loophole was created, less than one-quarter of light duty vehicles sold were classified as trucks. Now, fully half of vehicles sold receive this special designation. Most of these trucks are sport utility vehicles and minivans primarily, if not exclusively, used for transporting passengers. The “passenger car” category should be redefined to include SUVs and minivans.

Vehicle manufacturers receive credit against their fuel economy requirements for sales of “dual-fuel” vehicles that can run on either ethanol or gasoline. This credit has encouraged manufacturers to put millions of dual fuel vehicles on the road. The problem is that they are fueled almost exclusively with gasoline. As noted above, the new conference energy bill extends this credit for at least 5 more years. This credit should be terminated or modified to require actual use of the alternative fuel.

Finally, vehicles up to 10,000 pounds should be subjected to labeling and standards. CAFE standards and labeling requirements apply only to vehicles up to 8,500 pounds gross vehicle weight. Manufacturers are selling more and more of these super-large

SUVs and pickup trucks, such as GM Hummers and Ford Excursions. The weight limit should be raised to include these heavier vehicles.

Tax Incentives

Tax deductions and credits can help steer buyers toward vehicles with higher fuel economy. There is currently a \$2000 federal tax deduction for purchase of a hybrid vehicle (the deduction will be reduced to \$500 in 2006). Importantly, the current deduction does not take into account the vehicle's fuel economy. The buyer of a hybrid vehicle gets a tax deduction regardless of whether the vehicle achieves a small or significant fuel economy improvement.

The energy bill conference report improves on the current federal incentive, providing tax incentives for hybrid, advanced diesel, fuel cell and alternative fuel vehicles in varying weight classes. The new tax incentives for hybrid vehicle passenger cars and light trucks would be based on two factors: fuel economy improvements over a baseline and lifetime fuel savings. This tax incentive approach can assist in assuring that the hybrids that achieve better fuel economy are receiving the highest level of credit.

In sum, if the policy objective of these tax incentives is to encourage adoption of energy-saving technologies, the tax incentives should ideally be based on fuel economy, not just technologies.

Gas Guzzler Taxes

The Gas Guzzler Tax was established as a result of the Energy Tax Act of 1978. The Act established a tax on the sale of new model year vehicles whose fuel economy fails to meet certain statutory levels. Currently, the gas guzzler tax applies only to passenger cars with fuel economies below 22.5 mpg. The maximum rate is \$7,700, which is applied to cars that achieve a fuel economy value of less than 12.5 mpg. To further discourage purchase of inefficient vehicles, the gas guzzler tax could be revised to 1) increase the amount of the tax; 2) apply the gas guzzler tax to trucks; and/or 3) increase the mpg value so that more vehicles are captured within the tax structure (e.g., instead of starting the tax at 22.5 mpg, the tax could apply to vehicles that achieve an unadjusted mpg of 24.5 mpg)..

Feebates

A national “feebate” would impose a fee or rebate on new vehicles based on the expected lifetime fuel use of the vehicle. The feebate could be revenue neutral or not, depending on where the “set-point” is established; purchasers of vehicles above the set-point (with poor fuel economy) would pay a fee and purchasers of vehicles below the set point (with better fuel economy) would receive a rebate.

Many variations of feebates have been suggested and discussed. The simplest would use a single gallon-per-mile (GPM) rate – say \$500 per 0.01 GPM -- and a single set-point

for all passenger cars and light trucks.¹ Oak Ridge National Laboratory estimates savings from a \$500 per GPM revenue-neutral (approximately) feebate would increase car fuel economy to 31.8 mpg (13%) and light truck fuel economy to 26 mpg (25%) after about 6 years. A \$1,000/0.01 GPM feebate would increase car fuel economy to 35.2 mpg (25%) and light truck fuel economy to 29.2 (40%) after 6 years.

Summary and Conclusion

Government and industry have made great strides in developing technologies that can improve the fuel efficiency of the transportation sector (e.g, lightweight materials, variable valve transmissions, electric motors and controllers, low rolling resistance tires, etc.) Many of these technologies are not, however, being widely used to improve the fuel economy of today's vehicle fleet; instead, they are being used to increase overall vehicle acceleration, power and size. Without government policy intervention, the next 20 years could be just like the last, with fuel economy being sacrificed to increased acceleration, horsepower, weight and size.

By wisely using the tax code and increasing and reforming CAFE standards, we could begin to see improvements in the fuel economy of vehicles. Despite the arguments of the auto industry, these policies would not deny consumer choice. These policies would

¹ Most economists prefer feebates based on gallons-per-mile (GPM) since this equates to gallons of fuel used by the vehicle. MPG, on the other hand, is not by itself a sufficient parameter to measure efficiency since it is inherently higher for smaller cars and lower for larger vehicles. For example, an increase in a large truck's fuel economy from 10 MPG (equal to 0.1 GPM) to 12 MPG (0.083) would be rewarded the same as a small car improvement from 40 MPG (0.025) to 80 MPG (0.0125). By contrast, a feebate based on MPG would give 20 times more incentive to the small car with a 40 MPG improvement than the large truck with only a 2 MPG improvement. But over the life of the vehicles, the savings from the 2-MPG improvement in the truck will be far greater than the savings from the small car.

simply change the relative price of various vehicle amenities. They would make increased fuel economy *less* expensive. They would make hot rods and large tow vehicles more expensive. They would make people think about how much car or truck they really need. They would encourage manufacturers to make more vehicles with better fuel economy available to consumers, and then market them.

In sum, improving fuel economy is not a technical challenge – the technologies are here. Rather it is a matter of political priority and will. With the nation continuing to rely on imported oil from volatile regions of the world, and concerns about the impacts of our oil use on environmental quality and climate, it is increasingly imperative that our nation translate more of our advancements in vehicle technologies into improvements in fuel economy.