



DANGEROUS ADDICTION 2003

*Breaking the Chain
of Oil Dependence*

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DANGEROUS ADDICTION 2003

*Breaking the Chain
of Oil Dependence*

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America's swelling thirst for oil is one of our leading economic and national security problems. We use a quarter of the world's petroleum, but have just 3 percent of known reserves. As a result, we're importing more than half the oil we use each day from some of the most unstable regions of the world—spending more than \$20 billion each year on Persian Gulf oil alone.

Fortunately, there is a cure for our oil addiction. Simple, cost-effective technologies exist today to improve fuel economy in cars and light trucks of all sizes. With the right set of policies to foster oil-saving solutions, we could cut expected 2020 oil use for personal vehicles in half while continuing to offer American drivers the best and safest choice of vehicles in the world.

But it won't happen until leaders in Washington and Detroit make it happen. Thanks to legal loopholes that discourage the use of clean, efficient technology, the average fuel economy of America's cars and trucks is actually getting worse. And it has been that way for more than a decade. It's time to reverse this trend.

DETROIT, WASHINGTON FALL OUT OF STEP

The Natural Resources Defense Council (NRDC) and the Union of Concerned Scientists (UCS) created a roadmap to oil security in 2002 called *Dangerous Addiction: Ending America's Oil Dependence*. Since then, officials in Washington have debated almost all of the measures we proposed, but stiff resistance from automakers and the Bush administration thwarted progress during the last session of Congress. In fact, the oil savings from the few proposals issued by the administration—a plan to develop hydrogen-fuel-cell vehicles in 20 years and a minimal increase in fuel-efficiency standards—pale in comparison to the tremendous oil relief we could get right now from already available fuel-efficiency technology.

The administration's efforts are out of step with the changing public mood:

- ▶ Troops are on the ground in the Persian Gulf, and oil prices have approached \$40 per barrel.
- ▶ A growing chorus of voices, ranging from the nation's top vehicle safety regulator to the religious community, has called into question both the safety and fuel-efficiency of SUVs.
- ▶ A provocative advertising campaign highlighting the connection between U.S. oil dependence and U.S. foreign policy captured the spotlight.
- ▶ *Business Week* magazine issued an energy plan calling for increased fuel-economy standards and greater reliance on renewable forms of energy. The plan, wrote *Business Week*, is intended to break the nation's "addiction" to oil.

America has the technology to beat this problem today using better vehicles and better fuels; what we have lacked until now is leadership. With concern about oil security reaching new heights, Washington simply must provide more responsible answers.

Dangerous Addiction 2003 presents the path to a safer, more secure energy future using American know-how to dramatically reduce our oil demand and reviews the progress—or setbacks—of the past year.

DANGEROUS ADDICTION CONTINUED

The need for an effective and comprehensive strategy to reduce U.S. oil consumption is even more pronounced today than it was when *Dangerous Addiction* was published last year.

Americans continue to spend more than \$20 billion each year on oil from the Persian Gulf. One-fifth of the oil imported every day comes from the region, often from nations whose governments can fairly be described as unstable or hostile to American interests. That dependence skews our foreign policy. With American troops in the region and a lengthy period of continued instability all but certain, growing American dependence on oil threatens the nation's economy and security both.

Leading oil suppliers in other regions present troubles of their own. The oil strike in Venezuela caused price spikes and supply disruptions at many U.S. refineries, for example. *The New York Times* recently reported at length on chronic decay and mismanagement threatening Mexico's state-owned oil monopoly. And Nigeria is hardly a model of freedom and democracy.

Pervasive unrest has had a dramatic impact on world oil prices, which have soared to near \$40 per barrel. Retail gasoline prices jumped to over \$2 per gallon in some areas. Average February oil prices were up 72 percent from last year, while U.S. gasoline prices are up 51 cents per gallon—hitting record highs in 16 states according to AAA.

In all likelihood, prices will continue to fluctuate, but one thing is inevitable: the world will continue to grow ever more dependent on the Persian Gulf for its oil supply.

Several simple facts paint the dimensions of the problem:

- ▶ The United States imports more than half its oil from some of the most unstable regions of the world.
- ▶ Sixty-five percent of the world's known reserves lie beneath the Persian Gulf states.
- ▶ Drilling in the Arctic National Wildlife Refuge would increase world reserves by less than one-third of one percent, yielding only enough oil to provide for just six months of U.S. consumption. And tapping these reserves would take years.
- ▶ Despite significant improvements in engine technology, the average fuel efficiency of passenger vehicles in the United States *dropped* between 1988 and 2000 thanks to loopholes in fuel economy, safety, and environmental standards.

The simple truth is that the United States cannot drill its way out of its current dependence on overseas oil—not in the short term and certainly not in the long term. So long as that dependence, that dangerous addiction, continues, the American economy and American security will be vulnerable to the ups and downs of the international oil market.

BREAKING THE CHAIN

The only reliable solution to our oil security crisis is to reduce our need for oil in the first place. We can break the chain of foreign oil addiction today by building better, more efficient automobiles and by using better fuels to run them.

Americans continue to spend more than \$20 billion each year on oil from the Persian Gulf.

Comprehensive analysis by NRDC and UCS shows that we can cut passenger-vehicle oil use nearly a quarter by 2012, by half by 2020, and by three-quarters over the next three decades, compared with business as usual.

These savings can be achieved if leadership in Washington adopts five key policies:

► **Adopt responsible fuel-economy standards.** Congress should improve standards for both cars and light trucks in regular steps to 40 miles per gallon by 2012 and 55 miles per gallon in 2020. In addition, Congress should close loopholes in the Corporate Average Fuel Economy (CAFE) standards and require greater replacement-tire efficiency.

► **Accelerate use of hybrid technology.** Gasoline-electric hybrid technology can double mileage in cars and trucks of any size. What's more, technology and components developed for today's hybrids will pave the way to fuel-cell vehicles of the future. Toyota and Honda offer three hybrid models already; GM, Ford, and other manufacturers say they will have them soon. But this solution could be adopted much more quickly. Lawmakers should provide consumer tax credits to accelerate the transition.

► **Expand the share of renewable, non-petroleum fuels.** Congress should require a steadily increasing "renewable content" in gasoline and encourage fuels, such as ethanol made from whole plants, that minimize emissions from production as well as use.

► **Put hydrogen-fuel-cell vehicles on the road.** Fuel-cell vehicles could use one-third the energy of today's cars—without any oil at all—and emit almost no tailpipe pollution. Congress should create incentives and requirements to ramp up production to 100,000 vehicles by 2010 and 2.5 million by 2020.

► **Encourage "smart growth" instead of suburban sprawl.** Congress should support transportation-infrastructure investments that increase Americans' transportation choices and make communities more livable with less driving.

Political leaders debated these policies over the course of the past year, but the results were very disappointing. Strong resistance from Detroit and other corporate special interests—backed by the administration in many cases—meant that most positive solutions went nowhere. Too often showy initiatives and flowery rhetoric substituted for real action.

We can break the chain of foreign oil addiction today by building better, more efficient automobiles and by using better fuels to run them.

THE FUEL CELL FAKE OUT

With much fanfare, President Bush is promoting hydrogen-fuel cells as the solution to our oil security and environmental challenges, announcing new funds for fuel-cell research in the State of the Union address and appearing at a fuel-cell event with the auto industry the following week.

Fuel cells are a very promising solution over the long term. The problem is that the White House apparently sees fuel cells as a short-term political fix, promoting the technology as a substitute for stronger standards for conventional vehicles rather than as a necessary complement. In fact, the administration has aggressively resisted all efforts to improve significantly the fuel-economy performance of the conventional

FUEL ECONOMY VS. FUEL CELLS

Fuel cells of the future are no substitute for fuel-economy measures today. An analysis by NRDC shows that oil savings from fuel-cell technology—even on an optimistic timeline—are dwarfed by the gains that can be achieved by raising gas mileage of conventional cars and trucks.

To illustrate the point, we compared the oil savings from our fuel-economy proposal (40 miles per gallon by 2012 and 55 miles per gallon by 2020) with projected savings from our fuel-cell target (100,000 fuel-cell vehicles per year by 2010 and 2.5 million per year in 2020) *without* any improvement in the fuel economy of conventional vehicles.

Results show that potential oil savings between now and 2020 from increased fuel economy are almost 25 times greater than the potential savings from fuel-cell vehicles. By 2030, when fuel cells are more prevalent, savings from fuel-economy improvements are still five times as great (see Figure 1).

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cars and trucks—currently 17 million each year—that America will keep on buying for at least the next 20 years.

A fuel cell is a device that produces electricity through a chemical interaction, much as a standard battery does. But instead of recharging, a fuel cell uses an external fuel source. In this case, that source is hydrogen gas, which when mixed with oxygen, causes a chemical reaction that produces energy without creating smog or global-warming pollution. In fact, a hydrogen-fuel cell's only emission is water.

America and the rest of the world can and should begin transitioning away from petroleum fuels. But it's a long process. Even with incentives proposed by NRDC and others, fuel-cell automobiles are unlikely to be widely available until at least 2020. And because hundreds of millions of conventional cars will still be around, we estimate it will be 20 years after that before fuel cells have a large impact on the nation's oil consumption.

Another problem is that the president's program lacks any mechanism to hold the automobile industry accountable for converting theoretical plans into real vehicles for real people. In fact, a draft report by the Bush administration's own Department of Energy concludes that this approach is bound to fail:

While RD&D programs are essential to achieving dramatic changes in transportation energy consumption patterns, many analysts believe that successful RD&D results by themselves will not assure the commercial adoption of advanced transportation technologies and alternative fuels . . . This situation suggests that a strong need exists for new policies—at least some of which are likely to meet resistance from the general public and/or the auto industry—to assure an orderly transition from conventional fuels and stagnant fuel economy to new fuels and a more efficient fleet.¹

The administration shows no signs of heeding its own advice, at least not if that requires pursuing policies opposed by the auto industry. Indeed, the administration

¹ *Future U.S. Highway Energy Use: A Fifty-Year Perspective*, United States Department of Energy, draft, May 3, 2001. Available at www.ott.doe.gov/pdfs/hwyfuture.pdf

joined General Motors and DaimlerChrysler in a federal lawsuit against advanced-technology vehicle requirements enacted by the state of California that would help put hybrids and fuel cells on the road sooner.

In addition, the administration’s proposed budget would fund the fuel-cell initiative only by cutting back significantly on needed funds for core energy efficiency and renewable-energy technologies—the very technologies needed to make near-term progress and to produce hydrogen cleanly, thus enabling fuel-cell vehicles to fulfill their long-term promise of clean energy.

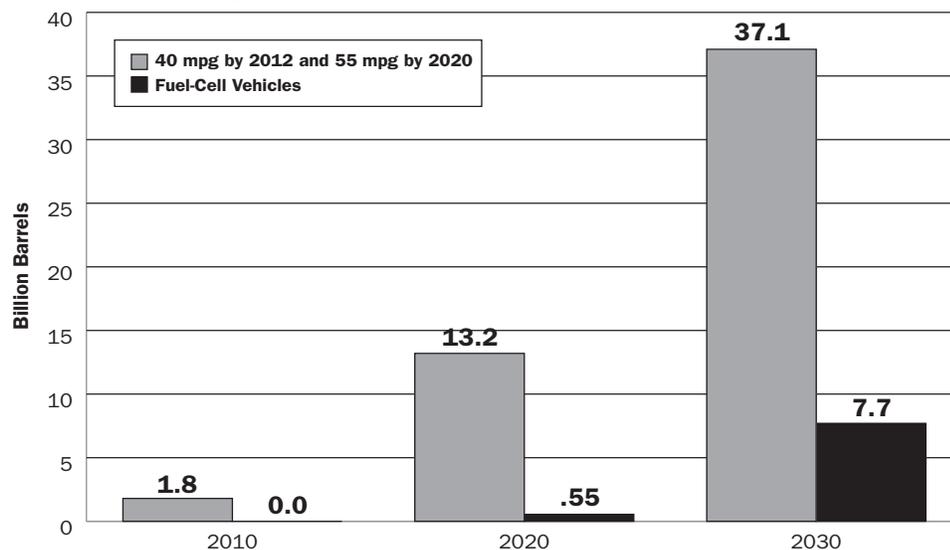
For the technology to make a real difference, industry must genuinely commit to it by producing large numbers of fuel-cell vehicles. Toward that end, the “H2 GROW” Act, introduced by Sen. Ron Wyden (D-OR), and a similar bill introduced by Sen. Byron Dorgan (D-ND), would provide financial incentives to get fuel-cell vehicles out of the lab and onto the highway. Tax credits of up to \$55,000 would be offered in the early years of development when they are needed most. Incentives would gradually be phased out as fuel-cell-vehicle manufacturers move to lower-cost mass production.

FUEL-ECONOMY FUMBLE

Detroit automakers waged a brutally successful battle in 2002 to block congressional efforts to raise fuel-economy standards. Years of lavish campaign contributions combined with millions of dollars in scare-tactic advertising were enough to block a bipartisan proposal by Senators John Kerry (D-MA), John McCain (R-AZ), and Fritz Hollings (D-SC) calling for a 45 percent fuel-economy increase phased in over 13 years. It mattered little that the National Academy of Sciences had concluded that

Results show that potential oil savings between now and 2020 from increased fuel economy are almost 25 times greater than the potential savings from fuel-cell vehicles.

FIGURE 1
Cumulative Oil Savings: Fuel-Economy Standards vs. Fuel-Cell Vehicles



Fuel economy scenarios from *Dangerous Addiction: Ending America’s Oil Dependence*, NRDC & UCS, January 2002.

technology exists to improve the fuel economy of all types of vehicles sufficiently to meet this requirement without changing the size mix of the vehicle fleet.

Confronted with growing public concern about fuel economy and the media debate over SUVs, the Bush administration reached for a fig leaf late last year—proposing to increase light truck fuel-economy standards by a mere 1.5 miles per gallon over the next five years to 22.2 miles per gallon (more than five miles per gallon shy of the current standard for cars).

The White House proposal would still leave average fuel efficiency lower than it was 15 years ago, when mileage—but not technology—was at its peak. Indeed, the proposal is no more ambitious than the voluntary plans automakers have already announced, belying industry's faint-hearted complaints that it will be difficult to achieve.

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BREEDING HYBRIDS BUT PROMOTING GAS GUZZLERS

Hybrid technology is making a growing dent in the American marketplace. This year saw a wave of new product announcements, including a reversal in the anti-hybrid rhetoric coming from General Motors. But the shift is happening without much encouragement from Congress and the White House—and its still happening more slowly than it could.

Hybrids on sale in the U.S. now include the Toyota Prius and the hybrid version of the popular Honda Civic. Honda also sells the two-passenger hybrid Insight. Toyota has sold more than 120,000 Priuses worldwide and 15,000 hybrid minivans in Japan. Honda has sold 20,000 hybrid Civics since last spring, along with about 15,000 Insights.

More hybrids are heading to market in a hurry:

- ▶ Toyota announced hybrid versions of the Highlander and Lexus RX330 SUVs and says it aims to offer hybrid technology in every model type that it produces. The company plans to sell 300,000 hybrids a year by 2005.
- ▶ Ford is promising a hybrid version of the Escape SUV in 2004.
- ▶ GM has announced a hybrid version of the Saturn VUE SUV for late 2005.
- ▶ Honda announced plans for a hybrid version of the CR-V SUV and is considering hybrid versions of the popular Odyssey minivan and the Accord. The company also previewed a 42 miles per gallon Acura sports sedan with a 300 horsepower V6 coupled with a 100 horsepower electric motor driving all four wheels.
- ▶ Nissan Motor Co. announced in 2002 that it will develop a hybrid vehicle for sale in the U.S. market by 2006, projecting sales of 100,000 units a year within five years of the launch.

Hybrid owners are eligible for a \$2,000 federal tax deduction, confirmed in recent guidance from the IRS. In most cases, the deduction amounts to little more than a \$600 incentive for buyers.

The federal government should do more to help nurture the market for hybrids. Legislation introduced by Sens. Orrin Hatch (R-UT) and John Rockefeller (D-WV)

would provide tax credits to purchasers of advanced-technology vehicles based on a sliding scale linked to the vehicles' performance in reducing oil consumption and air pollution. Total credits could reach as much as \$4,000.

Meanwhile, the Bush administration has proposed increasing a tax subsidy that encourages businesses to purchase the heaviest, least efficient SUVs—trucks with a gross weight in excess of 6,000 pounds, including “monster” SUVs like the Hummer, Ford Expedition, and Chevy Suburban. Current law allows companies purchasing a Hummer H2 to deduct \$36,000 in the first year; under the White House tax plan this would expand to the full \$55,000 purchase price.

Compare that to the deductions available to business owners who purchase a fuel-efficient Toyota Prius or Honda Civic Hybrid: limits on the amount that businesses can deduct when they buy any car or a truck that weighs less than 6,000 pounds means that the most they can deduct for a fuel efficient car is about \$10,000 in the year of acquisition, including a special \$2,000 deduction available to electric vehicles and gasoline-electric hybrids. The solution is to level the playing field by establishing a uniform small-business tax deduction for all passenger vehicles, regardless of their size, weight, or classification.

DIESEL CARS AND SUVs: NOT THE ANSWER

Another misguided approach that the administration has begun to pursue involves increasing the use of diesel fuel. Senior officials at the Department of Energy and the EPA have begun to join automakers in suggesting that increased reliance on diesel engines in the car and SUV market would ease U.S. dependence on imported petroleum. Certainly, diesel cars are cleaner today than they were in the 1970s. But compared to their gasoline cousins, today's diesel vehicles emit more particulate soot, which triggers asthma attacks and may cause cancer. They also release more nitrogen oxides (NO_x) that contribute to ground-level ozone, acid rain, crop and forest damage, and other environmental problems.

In Europe, where diesel engines are found in one-third of new cars, diesel cars are dirtier than American cars thanks to weaker European Union emission standards. In fact, upcoming European diesel standards (effective in 2008) will still allow five times more particulate soot emissions—and eight times more NO_x—than the average American car will emit at that time.

The rapid progress on diesel-emissions-control systems is encouraging. Many car manufacturers are striving to produce a diesel car that is no dirtier than the average gasoline car, and they may succeed. But in the meantime, the cost to public health and the environment far outweighs any benefits gained from diesel engines.

RENEWED FIGHT FOR RENEWABLE FUELS

The *Dangerous Addiction* report called on Congress to mandate steady annual increases in the “renewable content” of gasoline—the percentage of motor fuel that must come from renewable, oil-free sources. A provision along these lines was included in the

Current law allows companies purchasing a Hummer H2 to deduct \$36,000 in the first year; under the White House tax plan this would expand to the full \$55,000 purchase price.

problematic energy bill that passed the Senate last year, but the whole bill died in the House-Senate Conference Committee.

Use of biomass ethanol made from crop wastes by new efficient conversion processes could cut oil consumption in 2020 by almost 400,000 barrels every day—over and above the savings from fuel-economy increases. In addition, biomass ethanol would cut 76 million metric tons of heat-trapping carbon dioxide (CO₂) pollution in 2020.

SMART-GROWTH SOLUTIONS

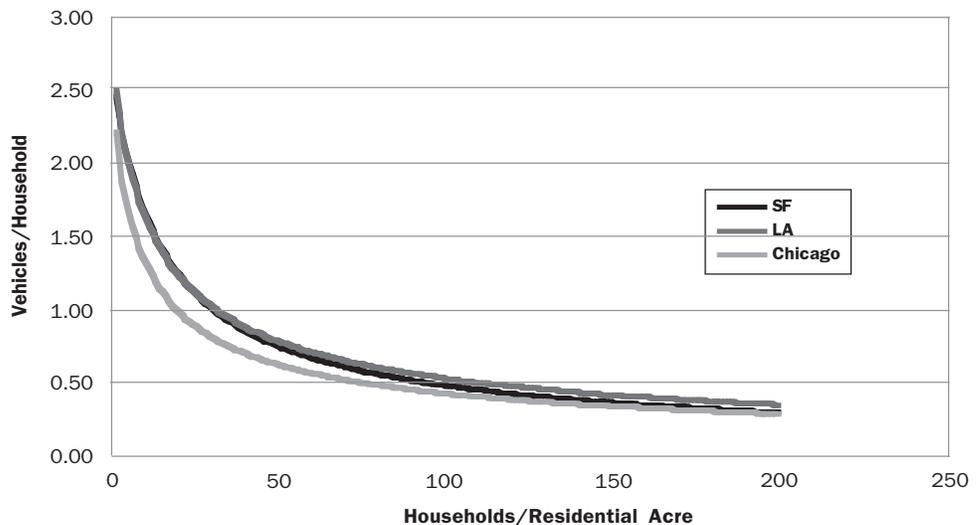
One of the most formidable obstacles the nation faces in overcoming its dependence on oil is the trend toward longer and longer routine trips in automobiles to accomplish daily tasks and maintain commerce. Traffic has grown three times faster than population over the last two decades. An important cause: the spread of automobile-dependent suburban sprawl across the American landscape.

Innovative communities are learning that smart-growth solutions—pedestrian friendly neighborhoods, communities built around public transit, and housing within walking distance of shops and workplaces—can produce a wide range of benefits.

The federal government can play an important role in encouraging smart growth. With the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, Congress took a first step away from limited “highway bills” by providing more support for other modes of transportation such as public transit. The latest federal transportation legislation, the Transportation Equity Act for the 21st Century (TEA-21) became law in 1998 and is due for reauthorization in 2003. New transportation legislation must build on the smart-growth promises of ISTEA and TEA-21

EPA research on a smart-growth development in Atlanta shows that neighborhoods with smart-growth characteristics can reduce by half or more the transportation energy consumed by a typical sprawling development.

FIGURE 2
Auto Ownership vs. Residential Density



Source: Holtzclaw, J. et al., “Location Efficiency: Neighborhood and Socio-Economic Characteristics Determine Auto Ownership and Use—Studies in Chicago, Los Angeles and San Francisco,” *Transportation Planning and Technology*, Vol. 25, #1, January 2002.

by funding more public transportation improvements and encouraging transit-oriented development.

These steps by the federal government would support and encourage continued innovation at the state and local levels, paying dividends in reduced driving and large oil savings. EPA research on a smart-growth development in Atlanta, and comparable NRDC research in Sacramento and Nashville, shows that neighborhoods with smart-growth characteristics can reduce by half or more the transportation energy consumed by a typical sprawling development.

CLOSING FUEL-EFFICIENCY LOOPHOLES

America's fuel-efficiency laws need to be updated in more ways than one. Many laws exempt the biggest passenger vehicles on the roads from the fuel efficiency and emissions standards that cars already meet. While these loopholes have made it easier for the auto industry to cut corners, they have presented consumers with larger safety risks and higher costs at the gas pump. Several members of Congress will try to close these loopholes in the coming year. The following steps would bring the most benefits:

Eliminate the Gas-Guzzler Loophole for Light Trucks

In 1978, Congress enacted a tax on gas guzzlers, but exempted light trucks, a large percentage of which were work vehicles at that time. To close this loophole, Congress should apply a gas-guzzler tax to all passenger vehicles that use 20 percent more fuel than the fleet average.

Close the Dual-Fuel-Vehicle Loophole

Vehicles capable of running on gasoline and an alternative fuel are credited for CAFE purposes at a rate more than 50 percent above their actual fuel economy, using a formula which assumes that they will run on alternative fuel 50 percent of the time. A recent Transportation Department study shows that they actually run on gasoline more than 99 percent of the time. The study projects that if manufacturers were to take full advantage of the provision, the credit would result in consumption of an additional 9 billion gallons of gasoline between 2005 and 2008. To close this loophole, Congress should scale the CAFE credit based on the actual fraction of the time that dual-fuel vehicles are estimated to run on a fuel other than gasoline.

Prevent Gaming of Light Truck Definition

As long as cars and light trucks have different fuel-economy standards, the auto industry has a strong incentive to classify many models as trucks rather than cars. The auto industry has taken advantage of the ambiguities in the definitions of cars and light trucks to get vehicles such as the PT Cruiser and some station wagons classified as trucks. To close this loophole, the Transportation Department should tighten up the definition of cars and trucks to prevent auto companies from reclassifying cars as trucks after making only cosmetic changes.

Light trucks weighing between 8,500 and 10,000 pounds are currently exempt from fuel-economy standards.

Include Vehicles That Weigh Between 8,500 and 10,000 Pounds in CAFE

Light trucks weighing between 8,500 and 10,000 pounds are currently exempt from fuel-economy standards. Vehicles in this category include the Hummer H2, the Ford Excursion, Lincoln Navigator, GMC Yukon XL K2500, Chevrolet Suburban K2500, GMC Sierra, and Chevrolet Silverado. To close this loophole, the Transportation Department should include these vehicles within each manufacturer's light-truck fuel-economy average.

*We can break
the chain of oil
dependence if more
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Establish Replacement-Tire Efficiency Standards

The average replacement market tire is less efficient than tires specified by auto-makers for new vehicles. The result is a 2 to 6 percent increase in fuel consumption when original equipment tires are replaced—small enough for individual consumers not to notice, but significant enough to waste more than 3 billion gallons of gasoline per year. To close this loophole, Congress should set minimum efficiency standards for replacement tires (in each tire size) at the average efficiency level of original equipment tires.

DEMANDING MORE FROM WASHINGTON AND DETROIT

We know how to end our dangerous addiction to oil. During the last year, many aspects of an effective oil security plan have been considered by the administration and Congress. Time and time again, however, political and business leaders have opted for short-term expedients rather than real solutions. As a result, efforts to protect our security and our environment remain fettered. We can only break the chain if more people demand better policies from Washington and better cars from Detroit.