

## The Clean Car Campaign is Coordinated by:

- Environmental Defense •
- American Council for an Energy Efficient Economy •
- Ecology Center • Great Lakes United •
- Michigan Environmental Council • Union of Concerned Scientists •

## Clean Car Standard

The Clean Car Campaign encourages automakers to produce vehicles meeting these standards:

- 50% more fuel-efficient than other vehicles in its class
- Meets California's stringent tailpipe emission standard (SULEV)
- Cleanly manufactured using non-toxic, recyclable materials

Over 100,000 people have signed this pledge:

“ The next time I shop for a new car or truck, I pledge to buy the greenest vehicle available that meets my needs and fits my budget. I challenge the auto industry to give me the choice to purchase a vehicle that meets the Clean Car Standard. ”

For more information about the Clean Car Campaign, please contact:



Kevin Mills,  
Environmental Defense,  
1875 Connecticut Ave., NW (Suite 1016)  
Washington, DC 20009  
(202.387.3500)  
or log onto [www.cleancarcampaign.org](http://www.cleancarcampaign.org).

*Driving Forward* is distributed free to members of the automotive industry and journalists. If you would like to receive a copy, please send your request to [tmurray@environmentaldefense.org](mailto:tmurray@environmentaldefense.org).

# DRIVING FORWARD

News from the Clean Car Campaign

## Automakers' Carbon Burdens

### Corporate Responsibilities for Global Warming



Over the past decade, automakers have put their design and marketing talents into anything but addressing their products' contribution to climate change. According to *Automakers' Corporate Carbon Burdens*, a new analysis led by Dr. John DeCicco of Environmental Defense, emissions of carbon dioxide (CO<sub>2</sub>) from U.S. cars and trucks are at an all-time high. General Motors is responsible for more CO<sub>2</sub> emissions than any other auto company in the world, and the global warming emissions of all major automakers are increasing.

An automaker's decision to invest in a new vehicle model locks in a predictable CO<sub>2</sub> emissions rate - nearly 20 pounds of carbon dioxide per gallon of gasoline consumed. For the entire fleet of new vehicles sold by an automaker each year, this predictable CO<sub>2</sub> emissions rate is the automaker's *corporate carbon burden*. Tracked over time, this corporate carbon burden is a measure of the firm's contribution to global climate change. The "carbon burden" concept provides a new way to assess the bottom line of corporate responsibility for protecting Earth's climate.

## Corporate Carbon Burden

### Fundamentals

An analysis of vehicles manufactured and marketed over the past decade (1990-2000) shows that many factors determine an automaker's carbon burden, including its market share and fleet average fuel economy. General Motors has the largest overall corporate carbon burden - it has the greatest market share and above average emissions of CO<sub>2</sub> per vehicle sold. Relative to market share, however, the performance of DaimlerChrysler is the worst amongst the Big Six. Daimler-Chrysler's carbon share is 10% higher than its market share, indicating its emissions of CO<sub>2</sub> per vehicle are significantly above the industry average. Three of the Big Six - Toyota, Honda, and Nissan - had carbon shares below their market shares.

### Share of Corp. Carbon Burden in MY2000 (Market Share)

1. General Motors	30.1%	(29.3%)
2. Ford	25.2%	(23.6%)
3. DaimlerChrysler	18.3%	(16.6%)
4. Toyota	9.2%	(9.8%)
5. Honda	5.7%	(7.0%)
6. Nissan	3.8%	(3.7%)

GM's immense carbon emissions and DaimlerChrysler's disparity between market and carbon shares signal a need for all automakers to assume responsibility for emission reductions in proportion to their contribution to the climate change problem.

### The Industry's Track Record

Despite the importance of early reductions of greenhouse gas emissions to stem climate change, the auto industry has been rapidly moving backward since 1990, failing to address this growing global threat. In the 1970s the oil crisis and Corporate Average

### Oil and Auto, a threat to national security

Oil is the world's dominant fuel, accounting for 40% of global energy use. As such, it also accounts for the largest portion of human-produced CO<sub>2</sub> emissions. Cars and trucks are America's main reason for oil dependence. Alone, they consume 8.2 million barrels per day (Mbd) of oil, 40% of the country's 19 Mbd appetite. That nearly matches the amount of oil produced by Saudi Arabia each day, and is more than twice that of Iran's daily production.

Unchecked, such demand contributes to tight domestic gasoline markets as well as pressure on the volatile world oil market. With 65% of global oil reserves located in the Persian Gulf, oil consumption presents an ongoing national security issue for the United States.

Fuel Economy (CAFE) standard pushed the fuel economy of passenger vehicles rapidly upward. New fleet average fuel economy increased from 14.3 mpg in 1975 to a high of 25.9 mpg in 1988, corresponding to a 45% reduction in per-vehicle CO<sub>2</sub> emissions. Despite many technical advances since then, the current fleet average fuel economy has slowly declined and is now below 1981 levels, while CO<sub>2</sub> emissions are at an all-time high. Over the past decade, the corporate carbon burden for the Big Six has increased nearly 30% (4.6 MMT<sub>c</sub>), while their fleet average fuel economy has dropped from an industry average of 25.2 mpg to 24.0 mpg.

Not only are U.S. passenger vehicles a leading source of CO<sub>2</sub> emissions, they are also a fast-growing source, with an annual increase of 3% in the 1990s that is predicted to continue for another 20 years.

Toyota, for example, posted the most rapid growth in global warming pollution; its corporate carbon burden grew 72% between 1990 to 2000, due to the company's explosive growth in the sale of light trucks, particularly large SUVs, combined with market share gains. To make up for the 1990-2000 increase in carbon emissions, Toyota would have to sell over 315,000 hybrids each year with a level of performance comparable to its popular Prius.

### Increases in Corp. Carbon Burden (1990 to 2000)

1. Toyota	72.2%
2. DaimlerChrysler	61.7%
3. Ford	25.8%
4. Honda	22.1%
5. General Motors	12.8%
6. Nissan	12.4%

Automakers have chosen to design and market heavier and more powerful vehicles. Take SUVs, for example. *All* of the engineering, design and technical improvements to SUVs between 1990 and 2000 were applied for reasons other than higher fuel economy and lower CO<sub>2</sub> emissions rates. In this regard, SUVs are not unique, but rather serve as an icon for the trends of the 1990s - auto industry resources were allocated to greater performance and more amenities (e.g., greater horsepower and more cup holders) throughout the market while fuel economy slowly eroded. The increase in per vehicle CO<sub>2</sub> emissions was led by Nissan, whose average increased by nearly 15% over the past 10 years.

### Increases in Average Per Vehicle CO<sub>2</sub> Emissions Rate (1990 to 2000)

1. Nissan	14.9%
2. DaimlerChrysler	7.9%
3. Toyota	6.2%
4. Ford	4.7%
5. General Motors	2.9%
6. Honda	0.4%

### The Road Ahead

The trends of increasing oil demand and corporate carbon burdens appear poised to continue indefinitely. The market seems to have a limitless capacity to absorb technological progress in amenities rather than lower CO<sub>2</sub> emissions. Business-as-usual projections have U.S. car and light truck CO<sub>2</sub> emissions growing 61% by 2020.

In terms of the auto industry's interests, reducing the greenhouse gas emissions rates of their products is clearly preferable to reducing sales or market share. The design of new cars, vans, pickups and SUVs is fundamental; design changes need to take into account society's need for carbon reductions. Automakers must take responsibility for the products they choose to design, manufacture and market, and seize the opportunities to balance the social need to alleviate climate impacts with the drive to enhance consumer value. Continuing to drive down this unsustainable road is no longer an option.

John DeCicco,  
Environmental Defense  
jdecicco@environmentaldefense.org  
Tom Murray,  
Environmental Defense  
tmurray@environmentaldefense.org