



August 2, 2004

Mr. Chuck Shulock
AB 1493 Draft Proposal Comments
California Air Resources Board
P.O. Box 2815
Sacramento, California 95812

**Comments on the California Air Resources Board's
June 2004 Draft Proposal to
Reduce Climate Change Emissions from Motor Vehicles**

Dear Mr. Shulock:

Public Citizen appreciates the opportunity to comment on the California Air Resources Board's (CARB) June 2004 Draft Proposal to Reduce Climate Change Emissions from Motor Vehicles. We believe we provide a unique perspective on the vehicle safety implications of the proposed regulation, and we hope CARB gives our comments due consideration. We commend CARB for demonstrating leadership and vision in proposing these new standards. They are clearly the result of thorough and thoughtful technical analyses. We also laud the California legislature for passing the landmark legislation in 2002, AB 1493, on which this regulatory proposal is based, and we hope that Gov. Schwarzenegger stands by his pledge to defend this proposal from any legal challenges.

It is worth noting that California's efforts to improve air quality and combat global climate change stand in stark contrast to the federal government's failure to effectively regulate emissions. Last year, the U.S. Environmental Protection Agency (EPA) shirked its responsibility, claiming it lacked the authority to treat carbon dioxide as a toxic gas. The EPA also claimed that carbon dioxide is not an air pollutant — despite copious research indicating CO₂ emissions are one of the most important contributors to the greenhouse effect.

President Bush made a decision to ignore the issue of climate change very early in his administration, when he withdrew the United States from the Kyoto Protocol soon after taking office. Since then, the White House has worked to censor government information on climate change, despite an overwhelming scientific consensus concerning its many serious consequences and has sided with industry against every effort to reduce vehicle emissions — including filing an amicus legal brief during the recently-settled legal battle over California's zero-emissions vehicles. While the federal government has its head in the sand, CARB has carefully formulated a regulatory standard to significantly reduce GHG tailpipe emissions over a reasonable timeframe.

California and CARB rightfully see themselves as on the forefront of a global effort to reduce GHG emissions and combat global warming. Carbon dioxide is by far the most abundant GHG, and the transportation sector is the largest source of carbon dioxide (CO₂) in California, as is true nationwide. With the state's tens of millions of vehicles — and with many other states like Maine, New Jersey and New York expressing interest in adopting this proposed regulation — California truly has the capacity to shift the U.S. auto industry towards cleaner vehicles.

Despite the federal government's failure to take global warming seriously, California is not alone in proposing significant GHG emission standards. As is noted in the draft proposal, the European Union and the auto industry currently have a voluntary agreement — backed up with a threat of regulations — to reduce carbon dioxide emissions by 25 percent by 2008.

The severity of the need for GHG-reducing standards like CARB's draft proposal is well illustrated by the projected growth in the global car market. According to J.D. Powers and Associates, expansion of the vehicle market in Asia — especially in China and India — along with Latin America, Eastern Europe and even the U.S., will lead to an additional *265 million* more vehicles on world's roads in the next 15 years, pushing the global total well over *1 billion vehicles*. The corresponding predicted increase in annual carbon dioxide emissions is stunning: accruing an increase of more than 50 percent between 2001 and 2025, from 23.9 to 37.1 billion metric tons.¹ Moreover, since the Earth's ability to absorb carbon dioxide is relatively constant, excess GHGs accumulate year after year.

The Emissions Standards Should Not Increase Incentives to Produce Light Trucks

Public Citizen commends CARB for its careful technical assessment in developing its vehicle emissions standards. The two-tiered weight-based standard, which divides passenger cars (PVs) and light light-duty trucks (LDT1s) from heavy light-duty trucks (LDT2s), does raise certain concerns.

The average weight of new light-duty trucks is at least 1,000 lbs. heavier than the cut-off for LDT1s (3,750 lbs. GVWR), so the large majority of light trucks would be regulated as LDT2s under the draft proposal. As LDT2s can meet more lenient emissions targets, it is important that the structure of these standards does not provide automakers with an incentive to produce more vehicles that could be labeled as LDT2s, simply to avoid the stricter emissions standards for PVs and LDT1s. Using weight to distinguish vehicles within the class of light-duty trucks is tricky because companies can (and have) adjusted the weights of vehicles to bring them within the heavier class.

Despite the claims of the auto industry and its front groups like SUV Owners of America, light trucks are the most polluting and most dangerous vehicles on California's highways — and the heaviest light trucks are the worst. They also exact a heavy financial burden on society. Using conservative cost-per-life estimates, California SUV and pickup truck rollover fatalities in 2002 alone cost society \$450 million. In that year, the combined cost inflicted on society by all of California's fatalities, 2000 dollars, was *almost \$1 billion*. And overall, people not directly

involved in the crashes pay for nearly three-quarters of crash costs, mostly through insurance premiums, taxes and travel delays.²

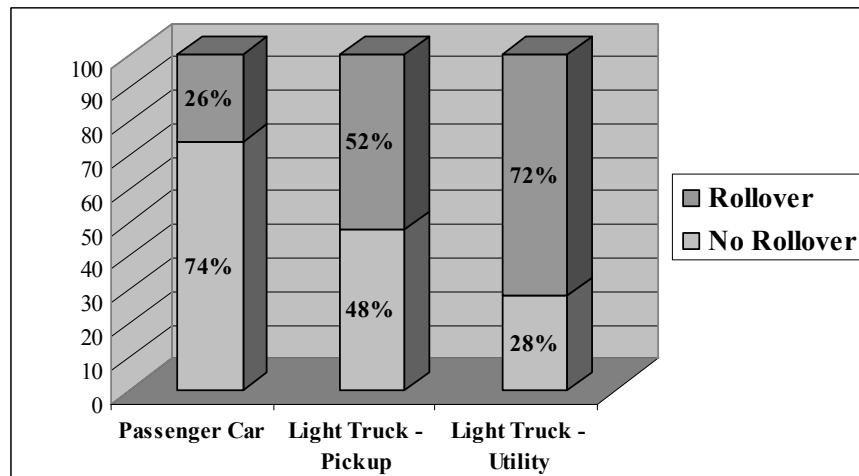
In developing the final proposed emissions standard, we recommend that CARB ensure that the emissions standards for LDT2s is at least as challenging as those for PVs/LDT1s, and that the standards include all passenger vehicles under 10,000 Gross Vehicle Weight Rating (GVWR) in the emissions standards program. In addition, we encourage CARB to consider strengthening its vehicle class definitions to ensure that car-like vehicles are regulated as cars under the proposed emissions standards.

Light Trucks Impose High Risk of Rollover on Occupants

The light truck population has exploded over the past decade, escalating damage caused to the environment as well as exposing drivers to greater safety risks. Despite the hulking mass and elevated height of SUVs that encourage their drivers to believe they are safer than the passenger cars they tower above, the occupant death rate in SUVs is actually about 6 percent higher than it for cars, and even higher for the largest SUVs.³ This is because the high center of gravity and overly narrow track width of SUVs — and pickups — make them significantly more rollover prone than other passenger vehicles. Moreover, the roofs of light trucks are so flimsy that they buckle and collapse into the occupant survivor space, especially after initial contact, when the vehicle windows shatter.

In 2002, an appalling 70 percent of deaths in SUVs in California occurred in rollover crashes, while half of fatalities in pickup trucks involved rollovers. That compares to 25 percent of passenger car fatalities involving rollover. Light trucks rollover fatalities in California total well over 500 deaths annually.⁴

Figure 1: Proportion of Rollover and Non-Rollover Fatalities, by Vehicle, in California in 2002

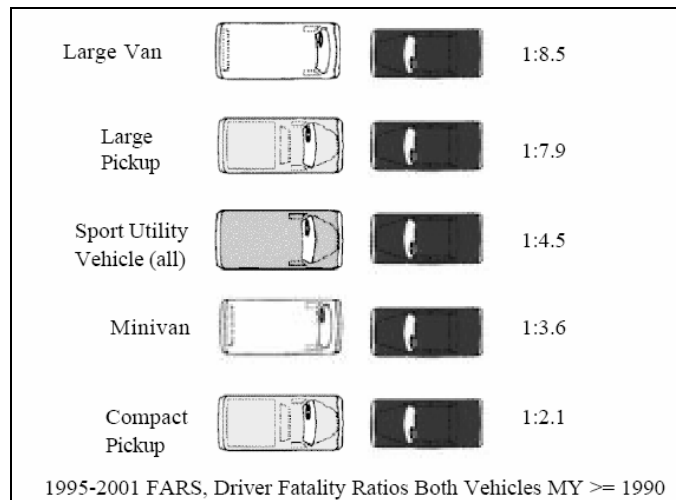


Aggressivity Makes Light Trucks Deadly in Two-Vehicle Crashes

In addition to the elevated rollover risks of light trucks, aggressivity is also a major contributor to deaths on the California highways. The elevated height, rigid structure beam-and-bar chassis, and increased weight of SUVs and pickup trucks compared to passenger cars make them especially deadly in two-vehicle crashes. Light truck bumpers are too high to properly engage the bumper of a passenger car, allowing the truck to violently ride up onto the front end of the car in a frontal crash.

As the graphic below illustrates, drivers of passenger cars face increased fatality risks in frontal crashes with *any* type of light truck compared to a crash with another passenger car instead. In frontal collisions with compact pickups, for example, passenger car drivers die at twice the rate of the compact pickup drivers. In frontal collisions with a full-size pickup, the passenger car driver is *eight times* more likely to die than the pickup driver.⁵

Figure 2: Ratio of Driver Fatality Risks in Both Vehicles in Frontal Impacts

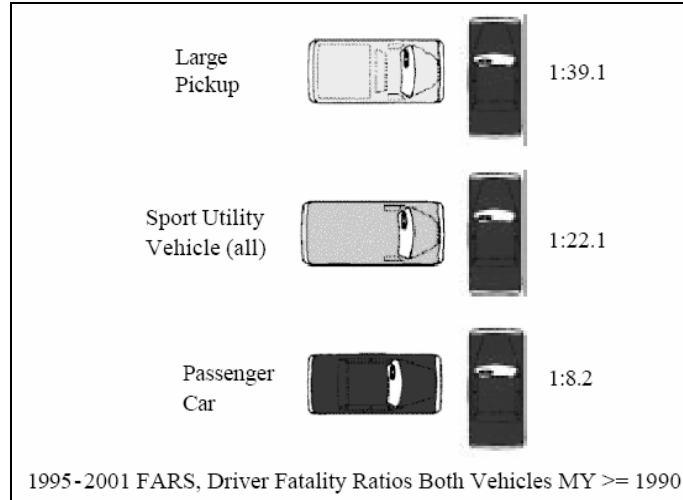


Source: Summers, Stephen M., William T. Hollowell, Alope Prasad, Proceedings of the Eighteenth International Conference on Enhanced Safety of Vehicles, Paper No. 307, Nagoya, Japan. May 2003, at 3.

As it is, side impact crashes are far more deadly for the victim than the aggressor. In side impact crashes between two passenger cars, the driver of the struck vehicle is eight times more likely to die than the driver of the striking vehicle. If the crash involves an SUV or pickup, the story is far worse. When SUVs and pickups crash into the side of a car, the high bumper often fails to engage the sill of the car door frame, instead smashing into significantly higher, more vulnerable areas of the vehicle and occupant, dramatically increasing risks of inflicting fatal head and torso injuries to the car occupant.

When a passenger car is struck in the side by an SUV, the car driver has a *22 times* greater fatality risk than the SUV driver. When a passenger car is struck in the side by a large pickup truck, the car driver is almost *40 times* more likely to die than the pickup driver.⁶ The aggressivity of light trucks in crashes with other vehicles is undeniable.

Figure 3: Ratio of Driver Fatality Risks in Both Vehicles in Side Impacts



Source: Summers, Stephen M., William T. Hollowell, Alope Prasad, Proceedings of the Eighteenth International Conference on Enhanced Safety of Vehicles, Paper No. 307, Nagoya, Japan. May 2003, at 3.

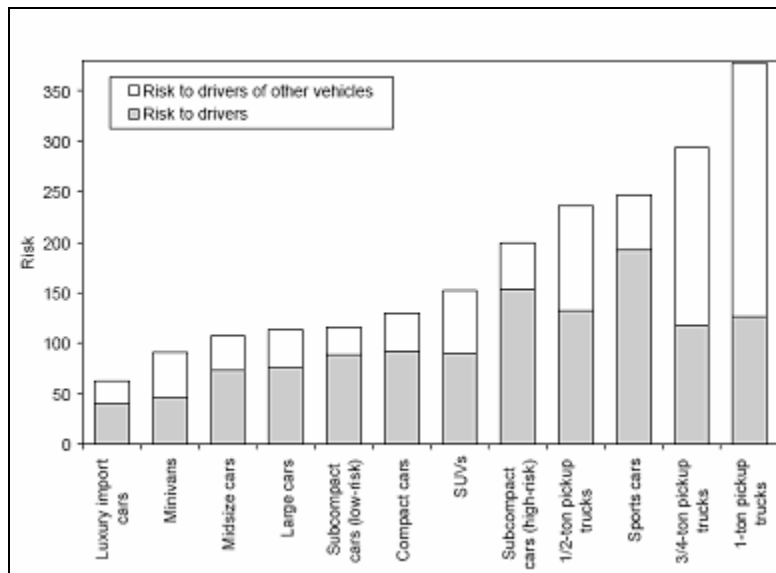
Failing to Include the Largest Passenger Vehicles in Emissions Standards Would Undermine Pollution Control and Highway Safety

Public Citizen encourages CARB to include in the program all passenger vehicles with a GVWR below 10,000 pounds, rather than setting the ceiling of regulated vehicles at the 8,500 lb. mark. Including vehicles that weigh between 8,500 and 10,000 lbs. is both feasible and more than justified because they are the most polluting and unsafe vehicles on the road.

Almost a million vehicles with a GVWR over 8,500 lbs. were sold in 2001, the last year that the U.S. EPA provided an estimate — and three-quarters of these massive vehicles were pickup trucks such as the Ford Super Duty F350.⁷ A study of driver fatality risks in 1997-2001 model year vehicles by researchers Tom Wenzel and Marc Ross indicates that the largest pickup trucks are by far the most aggressive, therefore the most likely to kill the driver of the other vehicle in a crash.⁸ This risk, along with real risk of a rollover crashes — half of people in California who died in their pickups in 2002 experienced a rollover of the vehicle⁹ — make them, overall, the most dangerous vehicles on the road.

Figure 4 illustrates the combined risks that different vehicle types impose on their drivers and the drivers of other vehicles when they are involved in two-vehicle crashes. The results are striking. SUVs are actually riskier than compact cars — and the safer subcompacts — because, despite the much smaller size of compacts, SUVs are both rollover prone and aggressive. The worst performing vehicles are pickups, however, the largest of which are even more dangerous than sports cars.

Figure 4: Risks by Vehicle Type



Source: Ross, Marc and Tom Wenzel, "Are SUVs Safer than Cars? An Analysis of Risk by Vehicle Type and Model," Briefing to National Highway Traffic Safety Administration Staff, Washington DC, July 23, 2003, at 2.

The heaviest SUVs and pickup trucks all use at least V8 and often V10 engines, which burn fuel inefficiently and produce high levels of GHGs per mile. Excluding these vehicles from the proposed emissions standards would give automakers an incentive to further invest in marketing and development of their largest light trucks, damaging the environment and exacerbating highway safety risks.

Other Safety Risks of Light Trucks

In addition to the increased rollover and aggressivity risks associated with SUVs and pickups, light trucks impose other, lesser known risks:

- **Dangerous blind spot when backing up.** Because of the greater vehicle height, SUV and pickup drivers cannot as easily detect short objects — or small children — when they are backing up. In 2002, at least 58 children died after being backed over by a passenger vehicle, although presently the government does not have a standard way of collecting this information, so this is probably a significant underestimation. That is more than one child killed per week, and in 60 percent of these incidents, a parent or close relative was driving.¹⁰
- **Increased side blind spot.** The greater height and size of light trucks increases the driver's side rear blind spot when making passing maneuvers, boosting the likelihood of a them veering into another, smaller vehicle next to them.

- **Decreased visibility for other drivers.** When turning onto a roadway around a parked truck, or performing a passing maneuver around one in traffic, passenger car drivers have extra difficulty seeing around an SUV or pickup and detecting other vehicles that may be present before it is too late to prevent a crash.
- **Overly rigid vehicle structures fail to absorb forces in a crash.** In frontal, side impact and rollover crashes, the stiff, rigid pickup truck and SUV vehicle frames, using steel-beam construction, means that the vehicle will transfer more violent crash forces to the occupant inside. This is a particular danger to children, whose vulnerable spinal columns can be severely injured, and who may be violently tossed around inside the vehicle in a crash.

CARB Should Consider Strengthening Vehicle Definitions

We recommend that CARB strengthen vehicle definitions to ensure that car-like vehicles, including minivans and crossover vehicles, are treated as passenger cars under the emissions standards, and to prevent automakers from “gaming” the two-tiered emissions standard. This would enhance emission reductions and improve safety. As mentioned in the draft proposal, minivans are built on a unibody chassis like passenger cars and have CO₂ emission levels that are more like cars than trucks. Moreover, minivans are safer than light trucks. Ross and Wenzel found that minivans, other than imported luxury cars, have the lowest driver death rates of any vehicle, and impose lower risks on other vehicle drivers in two-vehicle crashes as well.¹¹

Similarly, we encourage CARB to treat crossover utility vehicles as PVs/LDT1s since they are also built on a car chassis, feature GHG emission levels that are, on average, lower than pickup trucks and conventional SUVs, and demonstrate significantly improved safety when compared to vehicles built on pickup-truck underbodies.

Emissions Testing Should Accurately Reflect Contemporary Driving Patterns

Public Citizen also recommends that CARB adopt the most realistic harmonic average of urban and highway driving cycles when determining vehicle tailpipe emissions. While the Northeast States Center for a Clean Air Future (NESCCAF) study for CARB findings used a combined 55 percent urban and 45 percent highway harmonic average, that formulation fails to reflect contemporary, more urbanized driving conditions. Using such a formula would significantly underestimate of actual vehicle emissions, and substantially undermine the efficacy of the standards.

Since the U.S. Department of Transportation devised its “55/45” formula for estimating vehicle urban and highway driving mileage several decades ago, the amount of urban travel and the intensity of urban congestion has increased significantly. In the *2003 Annual Urban Mobility Report*, a study of urban mobility in 75 population areas of ranging size, the Texas Transportation Institute (TTI) found that between 1982 and 2001 the amount of congested peak-period travel doubled, rising from over 30 percent to almost 70 percent.¹² According to the TTI:

Congestion extends to more time of the day, more roads, affects more of the travel and creates more extra travel time than in the past. And congestion levels have risen in all size categories, indicating that even the small areas are not able to keep pace with rising demand.¹³

People spend increasingly more time stuck in traffic. In Californian population areas studied by TTI — such as Bakersfield, Fresno and San Francisco/Oakland — the average annual hours of delay experienced per person has risen over the past twenty years from almost 10 hours to over 23 hours of annual delay.¹⁴

Public Citizen believes actual driving patterns are better represented by the U.S. DOT's December 1, 2003 summary — mentioned in the draft proposal¹⁵ — which shows a 62/38 percent ratio between urban and highway driving. We encourage CARB to adopt the most realistic ratio possible in setting its final CO₂ equivalent emission standards.

CARB Should Consider More Aggressive Second-Phase Standards

The draft proposal offers very reasonable near-term phase emission targets, but we encourage CARB to consider more aggressive targets for the mid-term phase. An important study by the Union of Concerned Scientists released earlier this year indicates that in the same timeframe offered for the mid-term phase emissions reduction target, a 40 percent reduction in fleet GHG emissions is feasible.¹⁶ We suggest that CARB consider more advanced emissions-reduction technology packages in setting the second phase targets for the final emissions standards proposal.

Conclusions

While we greatly appreciate the care and thought that CARB has clearly invested in drafting this proposal, we believe incorporating our recommendations would significantly enhance the final proposed standard, both in terms of reducing emissions and reducing California highway injuries and fatalities.

- Emissions targets for LDT2s should be at least as challenging as those for PVs/LDT1s, and that the standards apply to all passenger vehicles under 10,000 GVWR so as not to encourage the production of greater numbers of dangerous and polluting light trucks.
- CARB should assess strengthening its vehicle class definitions to ensure that car-like vehicles are regulated as cars under the proposed emissions standards.
- The most realistic ratio of urban and highway driving should be adopted for harmonizing vehicle emissions test results. The old “55/45” formula fails to represent contemporary driving patterns and would lead to significant underestimation of vehicle emissions.

- CARB should consider more advanced emissions-reduction technology packages and set more aggressive mid-phase targets for the final emissions standards proposal.

Thank you for your consideration.

Sincerely,

Joan Claybrook

Endnotes

- ¹ Guilford, Dave, “We’re running out of time to replace oil,” *Automotive News* (July 19, 2004), p. 14.
- ² Blincoe, L. *et al.*, Department of Transportation, *The Economic Impact of Motor Vehicle Crashes, 2000* (DOT HS 809 446), Washington, DC: DOT, May 2002, at 62.
- ³ Bradsher, Keith, *High and Mighty*, New York: PublicAffairs, 2002.
- ⁴ National Center for Statistics and Analysis, National Highway Traffic Safety Administration, *Passenger Vehicle Occupant Fatalities, 1982-2002, by State, Rollover Occurrence, and Vehicle Type, Fatality Analysis Reporting System (FARS) – ARF*, Washington, DC: NHTSA, 2003.
- ⁵ Summers, Stephen M., William T. Hollowell, Alope Prasad, Proceedings of the Eighteenth International Conference on Enhanced Safety of Vehicles, Paper No. 307, Nagoya, Japan. May 2003, at 3.
- ⁶ *Id.*
- ⁷ U.S. Environmental Protection Agency. *Light-Duty Automobile Technology and Fuel Economy Trends: 1975 Through 2004* (EPA420-R-04-001), Washington: General Printing Office, April 2004, at Appendix A, A-8.
- ⁸ Ross, Marc and Tom Wenzel, “Are SUVs Safer than Cars? An Analysis of Risk by Vehicle Type and Model,” Briefing to National Highway Traffic Safety Administration Staff, Washington DC, July 23, 2003, at 10.
- ⁹ NCSA *supra* note 2.
- ¹⁰ Job, Ann, “Blind Spots, Backover Dangers Gain Attention,” MSN Autos.
<http://autos.msn.com/advice/article.aspx?contentid=4022016&src=Home&pos=Edit1>.
- ¹¹ Ross *supra* note 8.
- ¹² Schrank, David and Tim Lomax, *The 2003 Annual Urban Mobility Report*. College Station: Texas Transportation Institute, Sept. 2003, at 14-16.
- ¹³ *Id.* at 9.
- ¹⁴ *Id.* at 66.
- ¹⁵ California Air Resource Board, California Environmental Protection Agency, “Staff Proposal Regarding the Maximum Feasible and Cost-Effective Reduction of Greenhouse Gas Emissions from Motor Vehicles,” Sacramento: CARB/CEPA, June 14, 2004, at 89.
- ¹⁶ Bedsworth, Louise Wells, Union of Concerned Scientists, *Climate Controls: Global Solutions for California Cars*, Cambridge, MA: UCS, April 2004.