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Sport Utility Vehicles, Mini-Vans, and Light Trucks: An Overview of Fuel Economy and Emissions Standards

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Summary

Most sport utility vehicles, mini-vans, and pickups are classified as “light trucks” and thus are regulated less stringently than passenger cars under two major laws—the Energy Policy and Conservation Act for fuel economy standards, and the Clean Air Act for emissions standards. These differences came about because at the time the laws were passed, light trucks were used differently, and because they represented a much smaller share of the automobile market. Over the past decade, however, these vehicles have dramatically increased their share of the new automobile market. Therefore, the share of total fuel consumption and emissions attributable to these vehicles has steadily increased. In response to this trend, the Environmental Protection Agency has ruled that by model year 2009, emissions from all light trucks and passenger cars will be regulated equally. Also, in April 2003, the Department of Transportation finalized more stringent fuel economy standards for light trucks starting in MY2005. This report discusses the discrepancy between emissions and fuel economy standards for passenger cars and light trucks, how that discrepancy is changing, and legislative activity related to these issues.

Introduction

Sport utility vehicles and other light trucks are regulated through two laws that affect their fuel use and emissions: the Energy Policy and Conservation Act of 1975 (EPCA)¹ and the Clean Air Act (CAA).² EPCA first set fuel economy standards for the 1977 model year (MY1977). Since then, all light trucks—including most sport utility vehicles (SUVs) and all mini-vans—have been held to less stringent fuel economy standards than passenger cars. Furthermore, since MY1975, most light trucks have faced less stringent emissions standards under Clean Air Act regulations. The differences in standards

¹ P. L. 94-163, Section 301; 49 U.S.C. 32902.

² 42 U.S.C. 7521.

reflected the situation prevalent at the time these laws were enacted: first, light trucks were mainly used as commercial and agricultural work vehicles;³ second, they were a relatively small portion of the U.S. automobile market.

Since then, conditions have changed significantly. Today, light trucks are a larger portion of the total vehicle population, and travel more annual vehicle miles. For example, in 1980, light trucks composed 19.9% of the U.S. new automobile market.⁴ By 2001, this figure had increased to 50.8%; SUVs alone accounted for 23.1% of the new vehicle market in 1999, while mini-vans accounted for 5.8%.⁵ However, a comparison of market share underestimates this growth and its consequences. While the number of passenger cars sold each year in the United States has decreased somewhat since 1980, the number of light trucks sold has more than tripled, from 2.2 million in 1980 to 8.7 million in 2001. In 2001, SUV sales alone (4.0 million) nearly doubled total light truck sales for 1980. As a result, the total fuel usage and emissions attributable to these vehicles has increased.

Because of the increased emissions and consumption from light trucks, the Environmental Protection Agency (EPA) has ruled that by MY2009, all light vehicles (including all passenger cars and SUVs, and most vans and pickups—all but the very largest vehicles) will be held to the same emissions standards. Further, the Department of Transportation has proposed an increase in light truck fuel economy starting in MY2005.

Definition of “Light Truck”

For the purposes of fuel economy standards, DOT defines a light truck as any truck or “truck derivative” with a gross vehicle weight rating (GVWR) of 8,500 pounds or less, and a vehicle curb weight (VCW) of 6,000 pounds or less.⁶ (49 CFR 523) SUVs and mini-vans are usually built on truck chassis, or have other truck-like characteristics (e.g. 4 wheel drive and/or flat loading areas), and are therefore classified as light trucks.

EPA uses the same basic definition of a light truck, under the current “Tier 1” emissions standards. However, a distinction is made between different vehicle types (Light-Duty Truck 1 through 4), based on weight and payload.

Finally, some SUVs and pickups are so large (greater than 8,500 lbs. GVWR) that they do not qualify as “light trucks” under the current standards. These include the largest full-sized pickups, passenger vans, and SUVs. However, EPA recently added the classification “medium-duty passenger vehicle” to include heavy passenger vehicles—passenger vans and SUVs up to 10,000 GVWR starting in MY2004. Heavy pickups and cargo vans will not be affected, since their main function is transporting

³ Heavier-duty uses generally require greater vehicle weight, which tends to increase emissions and decrease fuel economy.

⁴ Automotive News. *The 100-Year Almanac and 1996 Market Data Book*. p. 120.

⁵ Ward’s Communications. *2002 Ward’s Automotive Yearbook*. pp. 243-245.

⁶ GVWR: the weight of the vehicle plus the designed maximum load capacity. VCW: the weight of the vehicle with all standard equipment and the fuel tank at nominal capacity.

cargo, as opposed to passengers.⁷ This change is only for emissions standards, and will not affect fuel economy standards. (See “Congressional Concerns and Activity” in the following section)

Fuel Economy Standards

The Energy Policy and Conservation Act requires Corporate Average Fuel Economy (CAFE) standards for motor vehicles. Under the standards, the average fuel economy of all vehicles of a given class that a manufacturer sells in a model year must be equal to or greater than the standard. These standards were first enacted in response to the desire to reduce petroleum consumption and promote energy security after the Arab oil embargo. The current law sets the CAFE standard for passenger cars at 27.5 miles per gallon (mpg). Furthermore, this law gives DOT the authority to define other classes of vehicles, and set fuel economy standards for those vehicles. Currently, the average fuel economy of light trucks—as they are defined above—is regulated at 20.7 mpg. (49 CFR 533)

Fuel economy standards for light trucks were steadily tightened through the 1980s and early 1990s, and were completely standardized (for all light truck sub-classes) in MY1996. Passenger car standards have remained unchanged since MY1990. DOT has the regulatory authority to set CAFE standards for a given model year taking into account technological feasibility, economic practicability, other vehicle standards, and the need to conserve energy. Between FY1996 and FY2001, however, Congress expressly prohibited DOT from using any funds to change CAFE standards.⁸

For FY2001, the Senate agreed to accept this CAFE language only if DOT, along with the National Academy of Sciences, was permitted to conduct a study of fuel economy and recommend appropriate CAFE standards (P.L. 106-346). The law required the study take into account the factors outlined in EPCA (feasibility, economics, and energy conservation), as well as vehicle safety and the effects on the auto industry. The panel concluded that light truck fuel economy can be increased without significant cost increases and without harming the auto industry, if given significant lead time.⁹ The National Energy Policy Report, produced by the Bush Administration, recommended that DOT review and provide recommendations on increasing CAFE standards, taking into account the NAS study.¹⁰

New Light Truck CAFE Standards. On April 1, 2003, DOT proposed higher CAFE standards for light trucks starting in MY2005.¹¹ The proposal would set the standards at 21.0 mpg for MY 2005, 21.6 mpg for MY2006, and 22.2 mpg for MY2007 (a total increase of 1.5 mpg). In its final rule, DOT predicts that the new standards will

⁷ Environmental Protection Agency (EPA), *Regulatory Announcement: EPA's Program for Cleaner Vehicles and Cleaner Gasoline*. December 21, 1999.

⁸ For more information on CAFE standards, see CRS Issue Brief IB90122: *Automobile and Light Truck Fuel Economy: Is CAFE Up to Standards?*

⁹ National Academy of Sciences, National Research Council, *Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards*. Washington, D.C. 2002.

¹⁰ National Energy Policy Development Group, *National Energy Policy*. May 2001. p. 4-9.

¹¹ *67 Federal Register 77015-77029*. December 16, 2003.

save 3.6 billion gallons of gasoline over the life of the vehicles covered. While DOT concluded that the average cost would be only \$47 per vehicle to meet the 2007 standards, some auto makers in public comments on the rulemaking contended that the costs would be considerably higher and that the costs would not be shared evenly among manufacturers.¹² Further, manufacturers claimed that DOT's projections for efficiency improvements may not be realized, especially if the upward trend in vehicle size and weight continues.

Also in public comments on the rulemaking, the Environmental Defense and the Union of Concerned Scientists claimed that DOT failed to set the maximum achievable standard, and that the standards could be feasibly set in the range of 23.8 to 24.4 mpg by MY2007. They claimed that DOT made conservative assumptions in developing the proposal and ignored some efficient technologies altogether.¹³

Other Issues. Even though the CAFE provisions in EPCA were not enacted for the purpose of achieving environmental goals, some environmentalists argue that increased fuel economy would promote better air quality, reduce greenhouse gas emissions, limit dependence on foreign oil, and lower consumer expenditures at the pump. Meanwhile, U.S. automobile industry spokespersons argue that CAFE standards have little or no effect on oil imports, promote more consumption (through lower annual fuel costs), and give an advantage to foreign manufacturers (which produce smaller vehicles). In addition, since EPCA only addresses the need to conserve energy, environmental justifications for tougher standards have been challenged by opponents. Moreover, some consumer groups argue that CAFE standards lead to decreased vehicle safety, because a common method for reducing fuel consumption is to reduce vehicle weight.

Congressional Concerns and Activity. CAFE standards have been a contentious issue in congressional debates. This is especially true as they related to greenhouse gas emissions and the potential for global warming. In the 107th Congress, CAFE provisions in both the House and Senate versions of comprehensive energy legislation (H.R. 4) proved especially controversial, as did proposed amendments to the bill.¹⁴ While some proposals would have tightened CAFE standards significantly for cars and light trucks, others would have frozen the standards at their current levels.

In the 108th Congress, H.R. 1605 (Gilchrest) and S. 255 (Feinstein) would increase light truck CAFE to 27.5 miles per gallon by MY2011. Further, these bills would also amend the definition of "light truck" to include all vehicles up to 10,000 pounds gross weight. In addition, on April 11, 2003, the House passed H.R. 6, an omnibus energy bill. This bill would not set new CAFE standards, but would require NHTSA to study the feasibility of reducing automobile fuel use by a significant percentage by model year 2012. As of this writing, the Senate has yet to introduce a similar energy bill.

¹² Pamela Najor, "Big Three Automakers Differ on Ability to Meet Tougher Fuel Economy Standard," *Daily Environment Report*. February 24, 2003. p. A-9.

¹³ Pamela Najor, "Environmental Groups Say CAFE Proposal Fails to Achieve Maximum Feasible Standard," *Daily Environment Report*. February 24, 2003. p. A-10.

¹⁴ For a detailed analysis of this bill, see CRS Report RL31427, *Omnibus Energy Legislation: H.R. 4 Side-by-side Comparison*.

Emissions Standards

Before 1975, all light trucks were classified by EPA as “light duty vehicles”, i.e. passenger cars. However, in a case brought by International Harvester, the U.S. Court of Appeals concluded that light trucks should be classified differently, due to the agricultural and commercial nature of their use.¹⁵ Therefore, light trucks were given their own classification and have faced less stringent emissions standards since MY1975. Under the current CAA “Tier 1” standards, light trucks are allowed to emit higher levels of pollution with each heavier weight class. Furthermore, Tier 1 standards for light trucks are generally less stringent than those for passenger cars. Only vehicles in the LDT1 class meet the same standards as passenger cars.¹⁶ Most SUVs and pickups, and all vans, are currently permitted to emit 29% to 47% more carbon monoxide (CO) and 75% to 175% more nitrogen oxides (NO_x) than passenger cars. (40 CFR 86)

Tier 2 Standards. The Clean Air Act gives EPA the authority to set standards for MY2004 and beyond, in order to attain and maintain the National Ambient Air Quality Standards (NAAQS). However, EPA may only tighten emissions standards if the technology to do so is available and cost-effective. On February 10, 2000, EPA finalized new standards for passenger cars and light trucks.¹⁷ Under the new “Tier 2” standards, all light trucks and passenger cars, as well as medium-duty SUVs and passenger vans, will be held to the same emissions standards by MY2009.¹⁸

Three primary factors influenced EPA’s decision: use patterns, market share, and technology. First, according to EPA, today these vehicles “are used like passenger cars and there are more annual miles traveled as a result.”¹⁹ Since these vehicles travel more miles per year, emissions attributable to the average vehicle have increased. Second, as was stated above, there are simply more light trucks on the road today. Because of the increased number of these vehicles, the contribution of the emissions from these vehicles to vehicular air pollution has similarly increased. Finally, EPA chose to set such stringent standards for light trucks because new emissions control technology is available to permit cuts in emissions without decreasing weight or power, and without generating excessive costs for automobile manufacturers or consumers.

As in many cases over the past thirty years, EPA is following the lead of California, which has the most stringent automobile emissions standards in the country. In

¹⁵ *International Harvester Co. v. Ruckelshaus*, D.C. Cir. No. 72-1517, Feb. 10, 1973.

¹⁶ These vehicles (compact SUVs and pickups) comprise approximately 17% of the light truck market. Source: EPA. Office of Mobile Sources. *Tier 2/Sulfur Draft Regulatory Impact Analysis*. April 1999. p. V-25.

¹⁷ EPA, *Control of Air Pollution from New Motor Vehicles: Tier 2 Motor Vehicle Emission Standards and Gasoline Sulfur Control Requirements; Final Rule*. 65 *Federal Register* 6698. February 10, 2000.

¹⁸ CRS Report RS20247: *EPA’s Tier 2 Proposal for Stricter Vehicle Emission Standards: A Fact Sheet*.

¹⁹ 64 *Federal Register* 26035. May 13, 1999.

November 1998, California ruled that beginning in MY 2004, all light trucks must meet the same emissions standards as passenger cars.²⁰

Issues. The Tier 2 standards have raised three major issues among vehicle manufacturers, oil refiners and environmentalists:

First, because the heaviest vehicles are exempt from the Tier 1 emissions standards (since they are not considered “light trucks”), some environmental groups were concerned that automobile manufacturers would be motivated to “bulk up” their heavier light trucks, placing them in the heavy truck class, to avoid improving their emissions. Therefore, EPA added the class of “medium-duty passenger vehicles” to include these vehicles.

Second, with existing technology, emissions reductions are dependent on reductions in the sulfur content of gasoline.²¹ Therefore, EPA also promulgated more stringent limits on gasoline sulfur content. Oil refiners acknowledged that sulfur does affect emission controls, but claimed that their input was ignored in the rule-making process, and that the timeline for the rule will greatly increase the cost of gasoline, and will push smaller refiners out of the market.²² Furthermore, they argue that emissions reductions could be achieved with considerably smaller cuts in the sulfur level.²³ Conversely, automobile manufacturers have argued that emissions reductions are unattainable without sulfur reductions, and have expressed support for even greater reductions.

Third, the oil refining industry has questioned whether EPA’s justification of the Tier 2 standards relies on the revised NAAQS for ozone and particulate matter, which EPA promulgated in July 1997.²⁴ These revised standards were remanded to EPA for further consideration by the U.S. Court of Appeals in May 1999.²⁵ In June 1999, to deter potential legal challenges to the Tier 2 standards, EPA issued a notice that justifies the Tier 2 standards under the previous NAAQS standards for ozone and particulate matter, which still apply to states that have not yet achieved attainment.²⁶

Congressional Concerns and Activity. No legislation has been introduced in the 108th Congress on emissions, but vehicle emissions standards are a matter of congressional oversight.

²⁰ CAA allows states to adopt California emissions standards in lieu of the federal standards. In the absence of action by EPA, a number of states planned to adopt the California standards. Auto manufacturers, not wanting to face multiple standards, have been generally supportive of Tier 2.

²¹ For more information, see CRS Report RS20163: *Sulfur in Gasoline*.

²² *Testimony of J. Louis Frank, President, Marathon Ashland Petroleum before the Senate Committee on Environment and Public Works*. May 18, 1999.

²³ *Testimony of Clint W. Ensign, Vice President, Government Relations, Sinclair Oil Corporation before the House Committee on Science*. July 21, 1999.

²⁴ *64 Federal Register 38652-38896*. July 18, 1997.

²⁵ *American Trucking Ass’ns v. EPA*, D.C. Cir. No. 94-1440, May 14, 1999.

²⁶ *64 Federal Register 35112-35119*. June 30, 1999.