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**National Highway  
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# **Automotive Fuel Economy Program**

## **Annual Update Calendar Year 2004**

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**AUTOMOTIVE FUEL ECONOMY PROGRAM**

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**ANNUAL UPDATE**  
**CALENDAR YEAR 2004**

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## **SECTION I: INTRODUCTION**

The Automotive Fuel Economy Program Annual Update summarizes the fuel economy performance of the vehicle fleet during 2004, and the activities of the National Highway Traffic Safety Administration (NHTSA) to date, including a section summarizing current rulemaking activities.

The Secretary of Transportation is required to administer a program for regulating the fuel economy of new passenger cars and light trucks in the United States market. The authority to administer the program was delegated by the Secretary to the Administrator of NHTSA, 49 C.F.R. 1.50(f).

NHTSA's responsibilities in the fuel economy area include:

- (1) establishing and amending average fuel economy standards for manufacturers of passenger cars and light trucks, as necessary;
- (2) promulgating regulations concerning procedures, definitions, and reports necessary to support the fuel economy standards;
- (3) considering petitions for exemption from established fuel economy standards by low volume manufacturers (those producing fewer than 10,000 passenger cars annually worldwide) and establishing alternative standards for them;
- (4) enforcing fuel economy standards and regulations; and
- (5) responding to petitions concerning domestic production by foreign manufacturers, and other matters.

Passenger car fuel economy standards were established by Congress for Model Year (MY) 1985 and thereafter at a level of 27.5 miles per gallon (mpg). NHTSA is authorized to amend the standard above or below that level. The agency has established light truck standards each year, however, the DOT Appropriations Acts for fiscal years 1996 through 2001 mandated no increase from the MY 1996 value of 20.7 mpg for MYs 1998 through 2003. The Congressional freeze on Corporate Average Fuel Economy (CAFE) standards was repealed in mid-December 2001. Given the short lead-time, (CAFE standards must be set 18 months prior to the affected model year), in April 2002, the agency set the MY 2004 light truck standard at 20.7 mpg. All fuel economy standards through MY 2007 are listed in Table I-1.

CAFE is the sales-weighted average fuel economy, expressed in mpg, of a manufacturer's fleet of passenger cars or light trucks with a gross vehicle weight rating (GVWR) of 8,500 lbs. or less, manufactured for sale in the United States, for any given model year. Fuel economy is defined as the average mileage traveled by an automobile per gallon of gasoline (or equivalent amount of other fuel) consumed as measured in accordance with the testing and evaluation protocol set forth by Environmental Protection Agency (EPA).

Manufacturers perform their own fuel economy tests of new car models and submit the results to EPA. EPA is responsible for conducting its own tests or verifying the manufacturers' dynamometer tests. EPA also is responsible for compiling the production data from manufacturers' reports and furnishing CAFE results to NHTSA.

Fuel economy test data from the manufacturers and EPA serves as the starting point for both CAFE values and on-road fuel economy projections. For CAFE, the test data is adjusted upward to account for any credits for dual fuel and dedicated alternative fuel vehicles, and for passenger cars only, is adjusted upward for credits available to manufacturers to account for test procedure changes since the CAFE program was established. This report presents CAFE values, since they are used to determine manufacturer compliance with fuel economy standards.

The Federal government provides on-road fuel economy projections to consumers in several ways: on new vehicle labels, in the *Fuel Economy Guide*, and on EPA and Department of Energy (DOE) websites. The *Fuel Economy Guide* is published and distributed by DOE based on EPA data. The *Fuel Economy Guide* lists the city and highway fuel economy estimates that are included on the Fuel Economy label on new vehicles. A downloadable version of the *Fuel Economy Guide* can be found at <http://www.fueleconomy.gov>. These estimates are derived from the same dynamometer test values used for CAFE calculation, mentioned above. EPA adjusts these laboratory test results to account for the difference between controlled laboratory conditions and actual driving on the road. The laboratory fuel economy results are adjusted downward to derive the estimates in the *Fuel Economy Guide* and on new passenger cars and light trucks labels. The city test value is lowered 10 percent and the highway test value is reduced 22 percent. Thus, the city and highway fuel economy estimates used to calculate CAFE differ from the numbers in the *Fuel Economy Guide* and on the new car and light truck window labels.

Table I-1  
**Fuel Economy Standards for Passenger Cars and Light Trucks**  
**Model Years 1978 through 2007 (in MPG)**

Model Year	Passenger Cars	Light Trucks <sup>(1)</sup>		
		Two-wheel Drive	Four-wheel Drive	Combined <sup>(2), (3)</sup>
1978	18.0 <sup>(4)</sup>	...	...	...
1979	19.0 <sup>(4)</sup>	17.2	15.8	...
1980	20.0 <sup>(4)</sup>	16.0	14.0	... <sup>(5)</sup>
1981	22.0	16.7 <sup>(6)</sup>	15.0	... <sup>(5)</sup>
1982	24.0	18.0	16.0	17.5
1983	26.0	19.5	17.5	19.0
1984	27.0	20.3	18.5	20.0
1985	27.5 <sup>(4)</sup>	19.7 <sup>(7)</sup>	18.9 <sup>(7)</sup>	19.5 <sup>(7)</sup>
1986	26.0 <sup>(8)</sup>	20.5	19.5	20.0
1987	26.0 <sup>(9)</sup>	21.0	19.5	20.5
1988	26.0 <sup>(9)</sup>	21.0	19.5	20.5
1989	26.5 <sup>(10)</sup>	21.5	19.0	20.5
1990	27.5 <sup>(4)</sup>	20.5	19.0	20.0
1991	27.5 <sup>(4)</sup>	20.7	19.1	20.2
1992	27.5 <sup>(4)</sup>	...	...	20.2
1993	27.5 <sup>(4)</sup>	...	...	20.4
1994	27.5 <sup>(4)</sup>	...	...	20.5
1995	27.5 <sup>(4)</sup>	...	...	20.6
1996	27.5 <sup>(4)</sup>	...	...	20.7
1997	27.5 <sup>(4)</sup>	...	...	20.7
1998	27.5 <sup>(4)</sup>	...	...	20.7
1999	27.5 <sup>(4)</sup>	...	...	20.7
2000	27.5 <sup>(4)</sup>	...	...	20.7
2001	27.5 <sup>(4)</sup>	...	...	20.7
2002	27.5 <sup>(4)</sup>	...	...	20.7
2003	27.5 <sup>(4)</sup>	...	...	20.7
2004	27.5 <sup>(4)</sup>	...	...	20.7
2005	27.5 <sup>(4)</sup>	...	...	21.0
2006	27.5 <sup>(4)</sup>	...	...	21.6
2007	27.5 <sup>(4)</sup>	...	...	22.2

1. Standards for MY 1979 light trucks were established for vehicles with a gross vehicle weight rating (GVWR) of 6,000 pounds or less. Standards for MY 1980 and beyond are for light trucks with a GVWR of 8,500 pounds or less.
2. For MY 1979, light truck manufacturers could comply separately with standards for four-wheel drive, general utility vehicles and all other light trucks, or combine their trucks into a single fleet and comply with the standard of 17.2 mpg.
3. For MYs 1982-1991, manufacturers could comply with the two-wheel and four-wheel drive standards or could combine all light trucks and comply with the combined standard.
4. Established by Congress in Title V of the Motor Vehicle Information and Cost Savings Act.
5. A manufacturer whose light truck fleet was powered exclusively by basic engines which were not also used in passenger cars could meet standards of 14 mpg and 14.5 mpg in MYs 1980 and 1981, respectively.
6. Revised in June 1979 from 18.0 mpg.
7. Revised in October 1984 from 21.6 mpg for two-wheel drive, 19.0 mpg for four-wheel drive, and 21.0 mpg for combined.
8. Revised in October 1985 from 27.5 mpg.
9. Revised in October 1986 from 27.5 mpg.
10. Revised in September 1988 from 27.5 mpg.



## SECTION II: VEHICLE FUEL ECONOMY PERFORMANCE AND CHARACTERISTICS

### A. Fuel Economy Performance by Manufacturer

The fuel economy achievements for domestic and foreign-based manufacturers in MY 2003 were updated to include final EPA calculations, where available, since the publication of the *Automotive Fuel Economy Program, Annual Update Calendar Year 2003*. These fuel economy achievements and current projected data for MY 2004 are listed in Tables II-1 and II-2.

Overall fleet fuel economy for passenger cars was 29.5 mpg in MY 2004, the same value calculated in MY 2003. For MY 2004, CAFE values increased above MY 2003 levels for seven of 22 passenger car manufacturers' fleets. (See Table II-1.) These seven companies accounted for more than 51 percent of the total MY 2004 production. Manufacturers continued to introduce new technologies and more fuel-efficient models, in combination with larger more powerful and less fuel-efficient models. For MY 2004, the overall domestic manufacturers' sales weighted passenger car fleet average CAFE was 29.9 mpg. For MY 2004, General Motors and Toyota domestic sales-weighted passenger car CAFE values rose 0.4 mpg and 5.1 mpg, respectively, from their MY 2003 levels. DaimlerChrysler, Ford, Honda, Nissan, and Quantum domestic sales-weighted passenger car CAFE values fell 0.1 mpg, 1.2 mpg, 1.3 mpg, 1.0 mpg, 0.1 mpg from their MY 2003 levels. Overall, the domestic manufacturers' combined sales-weighted MY 2004 CAFE increased 0.8 mpg above the MY 2003 level.

Table II-1

<b>PASSENGER CAR FUEL ECONOMY PERFORMANCE BY MANUFACTURER MODEL YEARS 2003 AND 2004</b>		
<b>MANUFACTURER</b>	<b>MODEL YEAR CAFE (MPG)</b>	
	<b>2003</b>	<b>2004</b>
<b>DOMESTIC</b>		
DaimlerChrysler* .....	29.7	29.6
Ford* .....	27.9	26.7
General Motors .....	28.9	29.3
Honda.....	34.4	33.1
Nissan.....	28.9	27.9
Quantum.....	32.4	32.3
Toyota .....	28.1	33.2
<b>Sales Weighted Average (Domestic)</b>	<b>29.1</b>	<b>29.9</b>
<b>IMPORT</b>		
BMW .....	26.8	26.4
Daewoo** .....	29.1	...
DaimlerChrysler .....	26.3	26.9
Ferrari/Maserati .....	14.5	15.0
Ford.....	28.2	27.7
General Motors .....	28.3	30.3
Honda.....	31.9	32.7
Hyundai.....	30.4	29.6
Kia .....	30.4	29.1
Lotus .....	20.8	20.8
Nissan.....	27.4	28.9
Porsche.....	24.1	23.3
Subaru .....	27.6	27.2
Suzuki .....	33.0	29.5
Toyota.....	32.4	32.4
Volkswagen .....	29.8	29.0
<b>Sales Weighted Average (Import)</b>	<b>29.9</b>	<b>28.7</b>
<b>SALES WEIGHTED TOTAL FLEET AVERAGE</b>	<b>29.5</b>	<b>29.5</b>
<b>FUEL ECONOMY STANDARDS</b>	<b>27.5</b>	<b>27.5</b>

\*For MY 2004, DaimlerChrysler and Ford domestic passenger car fleets CAFE levels were 28.7 mpg and 25.8 mpg. These manufacturers earned CAFE incentives for the sale of alternative fuel vehicles. These incentives and EPA adjustments raised their CAFE values to the figures shown above.

Table II-2

<b>LIGHT TRUCK FUEL ECONOMY PERFORMANCE BY MANUFACTURER MODEL YEARS 2003 AND 2004</b>		
<b>MANUFACTURER</b>	<b>MODEL YEAR CAFE (MPG)</b>	
	<b>Combined</b>	
	<b>2003</b>	<b>2004</b>
BMW .....	20.0	21.5
DaimlerChrysler* .....	22.2	20.5
Ford* .....	21.3	21.1
General Motors* .....	21.3	21.4
Honda.....	24.7	24.6
Hyundai.....	24.4	24.2
Isuzu.....	22.3	23.1
Kia.....	19.7	20.5
Nissan .....	21.9	21.2
Porsche .....	18.0	18.3
Subaru .....	26.3	25.4
Suzuki .....	21.8	22.8
Toyota .....	21.9	22.7
Volkswagen.....	21.3	19.2
<b>SALES WEIGHTED TOTAL FLEET AVERAGE</b>	<b>21.8</b>	<b>21.5</b>
<b>FUEL ECONOMY STANDARDS</b>	<b>20.7</b>	<b>20.7</b>

\*The MY 2004 light truck fuel economy values for DaimlerChrysler, Ford, and General Motors light truck fleets were 20.5 mpg, 19.8 mpg, and 20.2 mpg, respectively. These manufacturers earned CAFE incentives for the sale of alternative fuel vehicles. These incentives raised their CAFE values to the figures shown above.

For MY 2004, the overall import manufacturers' sales-weighted passenger car fleet average CAFE was 28.7 mpg, a decrease of 1.2 mpg below the MY 2003 level. Five of 15 import car manufacturers increased their CAFE values between MYs 2003 and 2004. DaimlerChrysler import, Ferrari/Maserati, General Motors import, Honda import, and Nissan import sales-weighted passenger car CAFE values rose 0.6 mpg, 0.5 mpg, 2.0 mpg, 0.8 mpg, and 1.5 mpg from

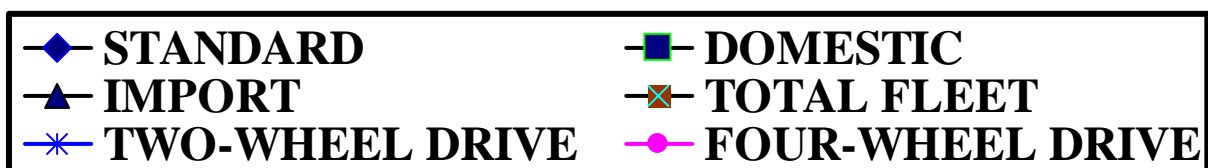
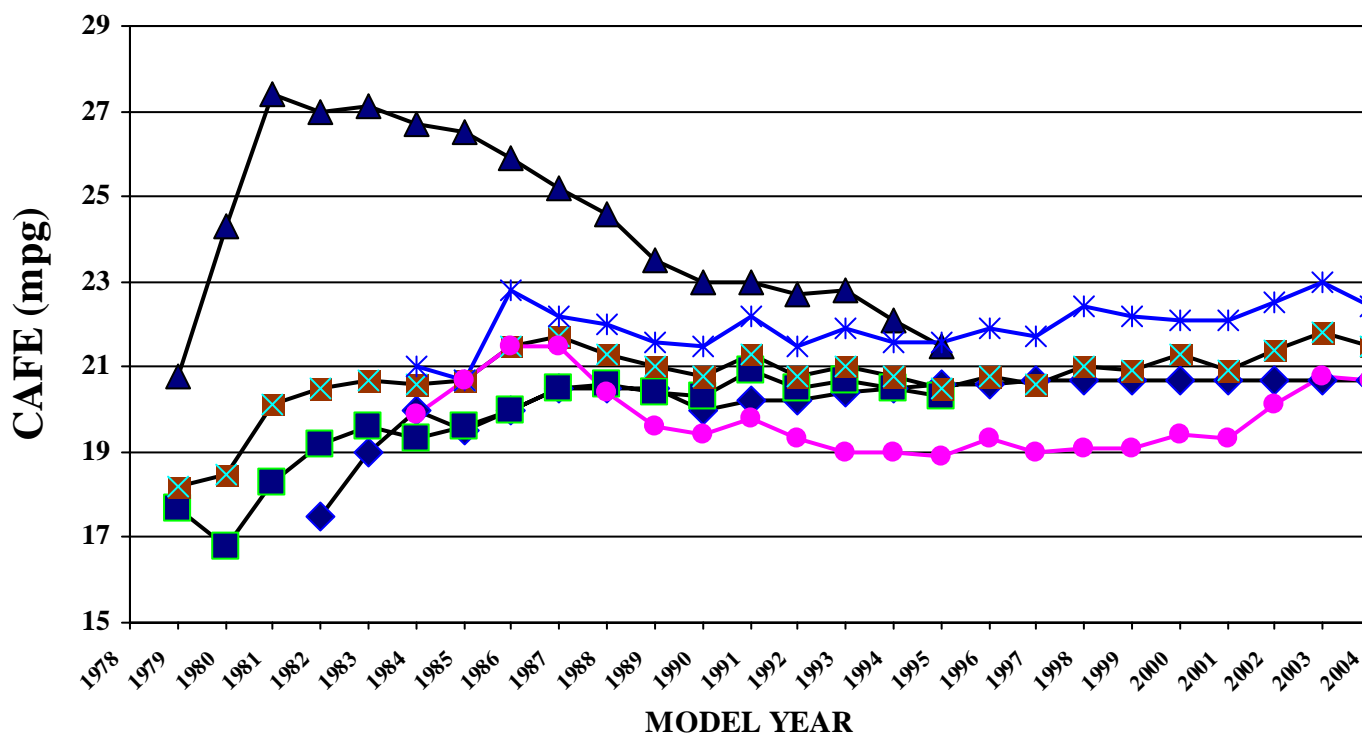
their MY 2003 levels. BMW, Ford import, Hyundai, Kia, Porsche, Subaru, Suzuki, and Volkswagen CAFE values fell 0.4 mpg, 0.5 mpg, 0.8 mpg, 1.3 mpg, 0.8 mpg, 0.4 mpg, 3.5 mpg, and 0.8 mpg from their MY 2003 levels. Lotus and Toyota import sales weighted passenger car CAFE values remained at their MY 2003 levels. Figure II-1 illustrates the changes in total new passenger car fleet CAFE from MY 1978 to MY 2004.

The total sales-weighted light truck fleet MY 2004 CAFE decreased 0.3 mpg below the MY 2003 CAFE level of 21.8 mpg (See Table II-2). For MY 2004, CAFE values increased above MY 2003 levels for seven of 14 light truck manufacturers' fleets. These seven companies accounted for 44 percent of the total MY 2004 production. Manufacturers continued to introduce new technologies, and more fuel-efficient models and some heavier more powerful and less fuel-efficient models. For MY 2004, BMW, General Motors, Isuzu, Kia, Porsche, Suzuki, and Toyota sales-weighted light truck CAFE values rose 1.5 mpg, 0.1 mpg, 0.8 mpg, 0.8 mpg, 0.3 mpg, 1.0 mpg, and 0.8 mpg, respectively, from their MY 2003 levels. DaimlerChrysler, Ford, Honda, Hyundai, Nissan, Subaru, and Volkswagen sales-weighted light truck CAFE values fell 1.7 mpg, 0.2 mpg, 0.1 mpg, 0.2 mpg, 0.7 mpg, 0.9 mpg, and 2.1 mpg from their MY 2003 levels. Overall, the total manufacturers' combined sales-weighted light truck fleet MY 2004 CAFE value was 21.5 mpg. Figure II-2 illustrates the trends in total light truck fleet CAFE from MY 1979 to MY 2004.

Figure II-1

## **CAFE PERFORMANCE PASSENGER CARS**

Figure II-2  
**CAFE PERFORMANCE  
 LIGHT TRUCKS**



Seven passenger car manufacturers (BMW, DaimlerChrysler import, Ferrari/Maserati, Ford domestic, Lotus, Porsche, and Subaru) and four light truck manufacturers (DaimlerChrysler, Kia, Porsche, and Volkswagen) failed to achieve the levels of the MY 2004 CAFE standards. Several of these manufacturers will not pay civil penalties because credits they earned by exceeding the fuel economy standards in earlier years will offset the MY 2004 shortfalls. The manufacturers may pay civil penalties or file carryback plans to demonstrate that they anticipate earning credits in future model years to offset current credit deficits.

CAFE levels can be impacted because of changes made to a manufacturer's fleet. Changes that occur such as an increase or decrease in vehicle weights, use of materials like high- and medium-strength steel, plastic and plastic composites, or aluminum, vehicle-mix shifts due to changes in consumer demand, and the use of advanced technology may potentially impact CAFE levels.

B. Characteristics of the MY 2004 Passenger Car Fleet

Overall, the MY 2004 passenger car fleet reflects a continuing trend toward heavier cars. (See Table II-3.) Compared with MY 2003, the average curb weight for MY 2004 increased by 119 pounds for the domestic fleet and decreased by 46 pounds for the import fleet. The average curb weight of all passenger cars increased from 3,179 pounds in MY 2003 to 3,235 pounds in MY 2004, primarily due to the average curb weight increase for the domestic fleet. Average

Table II-3

<b>PASSENGER CAR FLEET CHARACTERISTICS FOR MYs 2003 AND 2004</b>						
	<b>TOTAL FLEET</b>		<b>DOMESTIC FLEET</b>		<b>IMPORT FLEET</b>	
<b>CHARACTERISTICS</b>	<b>2003</b>	<b>2004</b>	<b>2003</b>	<b>2004</b>	<b>2003</b>	<b>2004</b>
Fleet Average Fuel Economy, mpg	29.5	29.5	29.5	28.9	28.8	29.2
Fleet Average Curb Weight, lbs.	3179	3235	3161	3280	3204	3158
Fleet Average Equivalent Test Weight, lbs.	3485	3540	3461	3581	3516	3470
Fleet Average Engine Displacement, cu. in.	166	169	181	171	149	153
Fleet Average Horsepower/Curb Weight ratio, HP/100 lbs.	5.48	5.54	5.48	5.55	5.48	5.53
% of Fleet	100	101	52.3	67.0	47.7	34.0
Segmentation by EPA Size Class, %						
Two-Seater	2.3	2.3	1.2	1.1	3.5	4.6
Minicompact	1.8	1.5	0.6	0.1	3.1	4.1
Subcompact*	5.4	6.7	5.7	3.2	5.0	13.6
Compact*	39.7	37.5	33.4	33.3	46.5	44.6
Mid-Size*	34.8	36.0	31.5	38.8	38.5	29.4
Large*	16.2	17.0	27.6	23.5	3.5	3.7
Diesel Engines	0.37	0.30	0.0	0.0	0.8	0.9
Turbo or Supercharged Engines	3.5	4.7	0.08	0.19	7.29	13.4
Fuel Injection	100	100	100	100	100	100
Front-Wheel Drive	80.6	81.3	87.4	90.5	73.0	60.9
Automatic Transmissions	82.4	79.3	86.8	87.9	77.5	60.0
Automatic Transmissions with Lockup Clutches	99.8	99.2	100.0	99.7	99.5	97.7
Automatic Transmissions with Four or more Forward Speeds	98.1	96.5	99.7	99.3	96.1	88.4
% Electric	0.0	0.0	0.0	0.0	0.0	0.0

\*Includes associated station wagons.

engine displacement decreased from 181 to 171 cubic inches for domestic passenger cars and decreased from 149 to 148 cubic inches for import passenger cars from MY 2003 to MY 2004. Overall, the average engine displacement increased from 166 cubic inches to 169 cubic inches. From MY 2003 to MY 2004, horsepower/100 pounds, a measure of vehicle performance, increased from 5.48 to 5.55 for domestic passenger cars and increased from 5.48 to 5.53 for import passenger cars. The total fleet average for passenger cars increased from 5.48 horsepower/100 pounds in MY 2003 to 5.54 in MY 2004. The passenger car fleet in MY 2004 average the highest horsepower-to-weight ratio recorded in any year since 1955, the earliest year for which the agency has data.

The size/class breakdown shows an increase in subcompact, mid-size, and large passenger cars, and a decrease in minicompact and compact passenger cars for the overall fleet. The market for two-seater passenger cars remained stable. The size/class mix in the domestic fleet showed an increase in mid-size passenger cars and a decrease in two-seater, minicompact, subcompact, compact and large passenger cars. The size/class mix in the import fleet showed an increase in two-seater, minicompact, subcompact, and large passenger cars and a decrease in compact and mid-size passenger cars. The domestic share of the passenger car market increased 13.7 percentage points in MY 2004 to over 67 percent of the market, and the import share of the passenger car market decreased 13.7 percentage points in MY 2004 to 34 percent of the market.

The share of turbocharged and supercharged engines rose for both the domestic and import fleets above the MY 2004 level. Diesel engines were only offered on certain Volkswagen models during MY 2004. Consequently, diesel engine share decreased in MY 2004.



Passenger car fleet average characteristics have changed significantly since MY 1978 (the first year of fuel economy standards). (See Table II-4.) After an initial trend in weight loss (from MY 1978 to MY 1982), the average passenger car fleet curb weight decreased from 3,349 to 2,808 pounds, and the curb weight stabilized between 2,800 and 3,000 pounds until MY 1993. However, since MY 1993, the average passenger car fleet curb weight has steadily increased and has reached a level only exceeded by the initial year of the CAFE program. The average horsepower-to-weight ratio (hp/100 lb.) of the passenger car fleet has increased steadily since 1981. The average horsepower-to-weight ratio for MY 2004 passenger car was 5.54, significantly higher than the average of 3.43 in MY 1981. Table II-4 shows that the MY 2004 passenger car fleet has nearly equal interior volume and has a CAFE over 48 percent higher than the MY 1978 fleet. (See Figure II-3.)

### C. Characteristics of the MY 2004 Light Truck Fleet

The characteristics of the MY 2004 light truck fleet are shown in Table II-5. Unlike passenger cars, light truck manufacturers are not required to divide their fleets into domestic and import fleets. For comparison purposes, Table II-5 subdivides the light truck fleet into two-wheel drive and four-wheel drive classifications.

The MY 2004 average equivalent test weight of the total light truck fleet increased by 99 pounds over that for MY 2003. The average CAFE of the fleet decreased by 0.3 mpg to 21.5 mpg. The share of the MY 2004 two-wheel drive fleet decreased by 5.3 percentage points below the MY 2003 level of 53.8 percent; thus the share of the MY 2004 four-wheel drive fleet increased by 5.3 percentage points above the MY 2003 level of 46.2 percent.

Table II-4

<b>New Passenger Car Fleet Average Characteristics Model Years 1978-2004</b>						
<b>Model Year</b>	<b>Fuel Economy (mpg)</b>	<b>Curb Weight (lb.)</b>	<b>Equivalent Test Weight (lb.)</b>	<b>Interior Space (cu. ft.)</b>	<b>Engine Size (cu. in.)</b>	<b>Horsepower/Curb Weight (hp/100 lb.)</b>
1978	19.9	3349	3627	112	260	3.68
1979	20.3	3180	3481	110	238	3.72
1980	24.3	2867	3162	105	187	3.51
1981	25.9	2883	3154	108	182	3.43
1982	26.6	2808	3098	107	173	3.47
1983	26.4	2908	3204	109	182	3.57
1984	26.9	2878	3170	108	178	3.66
1985	27.6	2867	3177	108	177	3.84
1986	28.2	2821	3127	106	169	3.89
1987	28.5	2805	3100	109	162	3.98
1988	28.8	2831	3100	108	161	4.11
1989	28.4	2879	3181	109	163	4.22
1990	28.0	2906	3192	108	162	4.53
1991	28.4	2934	3229	108	164	4.42
1992	27.9	3007	3307	109	169	4.56
1993	28.4	2980	3328	109	166	4.64
1994	28.3	3012	3318	109	169	4.79
1995	28.6	3047	3335	109	166	4.87
1996	28.5	3049	3352	109	165	4.93
1997	28.7	3068	3362	109	163	4.94
1998	28.8	3075	3372	109	161	5.05
1999	28.3	3116	3418	110	166	5.21
2000	28.5	3127	3437	111	167	5.26
2001	28.8	3145	3443	110	169	5.31
2002	29.0	3154	3449	111	172	5.39
2003	29.5	3179	3485	111	176	5.48
2004	29.5	3235	3540	111	181	5.54

Figure II-3  
**PASSENGER CAR FLEET AVERAGE CHARACTERISTICS**

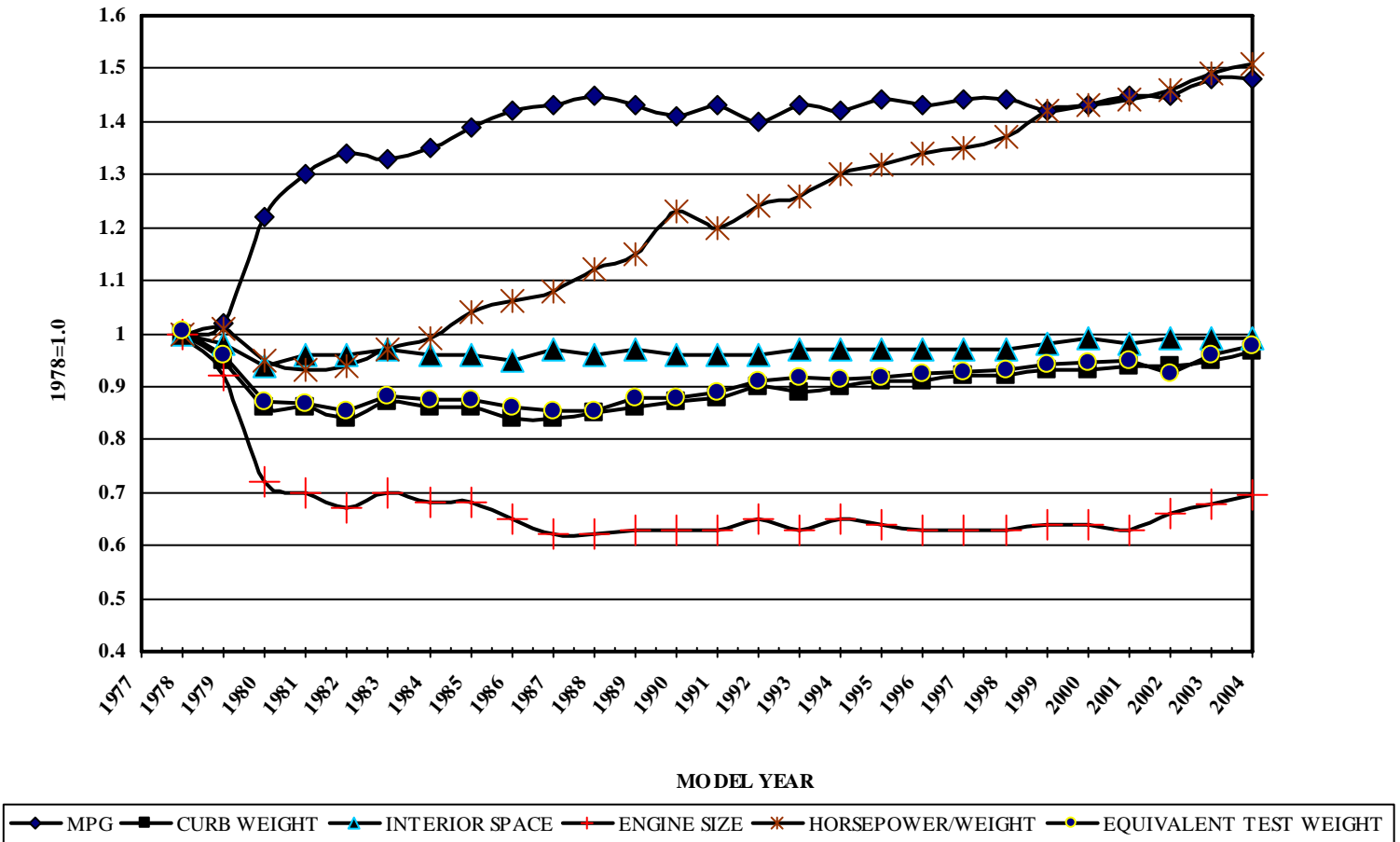


Table II-5

<b>LIGHT TRUCK FLEET CHARACTERISTICS FOR MYs 2003 AND 2004</b>						
<b>CHARACTERISTICS</b>	<b>TOTAL FLEET</b>		<b>Two-wheel Drive</b>		<b>Four-wheel Drive</b>	
	<b>2003</b>	<b>2004</b>	<b>2003</b>	<b>2004</b>	<b>2003</b>	<b>2004</b>
Fleet Average Fuel Economy, mpg	21.8	21.5	23.0	22.4	20.8	20.7
Fleet Average Equivalent Test Weight, lbs.	4698	4797	4536	4650	4886	4935
Fleet Average Engine Displacement, cu. in.	244	250	234	241	255	259
Fleet Average Horsepower/ Test Weight ratio, HP/100 lbs.	4.70	4.91	4.64	4.86	4.76	4.96
% of Fleet	100	100	53.8	48.5	46.2	51.5
% of Fleet from Foreign-based Manufacturers	22.0	27.0	16.6	23.0	24.3	24.5
<b>Segmentation by Type, %</b>						
Passenger Van	13.4	9.3	24.1	18.2	0.8	0.9
Cargo Van	1.5	0.8	2.6	1.6	0.3	0.1
Small Pickup	1.8	0.1	3.3	0.3	0.0	0.0
Large Pickup						
Two-Wheel Drive	16.1	16.0	30.0	33.1	0.0	0.0
Four-Wheel Drive	11.6	14.4	0.0	0.0	25.2	28.0
Special Purpose						
Two-Wheel Drive	21.5	22.7	39.9	46.9	0.0	0.0
Four-Wheel Drive	34.1	36.6	0.0	0.0	73.8	71.0
Diesel Engines	2.02	2.48	0.0	0.0	4.37	4.81
Turbo/Supercharged Engines	0.58	1.36	1.34	1.67	1.58	4.03
Fuel Injection	100	100	100	100	100	100
Automatic Transmissions	93.3	92.4	93.3	93.3	93.3	91.5
Automatic Transmissions with Lockup Clutches	99.7	98.9	99.4	98.6	100	99.1
Automatic Transmissions with Four or More Forward Speeds	98.6	98.9	98.6	98.9	98.6	98.9
% Electric	0.00	0.00	.002	0.00	0.00	0.00

The size/class breakdown shows increases in large pickup (four-wheel drive) and special purpose (both two-wheel drive and four-wheel drive) vehicles, and reductions in passenger vans, cargo vans, and small pickups for the overall fleet. The reduction in the sales of small pickups was significant. The size/class mix in the two-wheel drive segment showed an increase in large pickups and special purpose vehicles and a decrease in passenger vans, cargo vans, and small pickups. The size/class mix in the four-wheel drive segment showed an increase in passenger vans and large pickups and a decrease in cargo vans and special purpose vehicles.

Historically, light truck fuel economy levels increased from 18.5 mpg in MY 1980 to 21.7 mpg in MY 1987. From 1988 until 2002, fuel economy stabilized at around 21.0 mpg (see Table II-6). Subsequently, in MY 2004, light truck fuel economy level is 21.5 mpg, a decrease from its highest level in MY 2003 of 21.8 mpg. Light truck production increased from 1.9 million units in MY 1980 to over 8.3 million units in MY 2004, the highest volume recorded since fuel economy standards were established for light trucks. Light trucks comprised over 53 percent of the total light duty vehicle fleet production in MY 2004, more than 3 times greater than the light truck share in MY 1980.

#### D. Passenger Car and Light Truck Fleet Economy Averages

Passenger car CAFE increased substantially between 1978 and 1988, from 19.9 mpg to 28.8 mpg, but has remained relatively constant until 2003 (see Figure II-4 and Table II-6). In MY 2004, passenger car CAFE was 29.5 mpg. Light truck CAFE increased from 18.5 mpg in 1980 to a high of 21.7 mpg in 1987. In MY 2004, the light truck fleet CAFE average achieved 21.5 mpg.

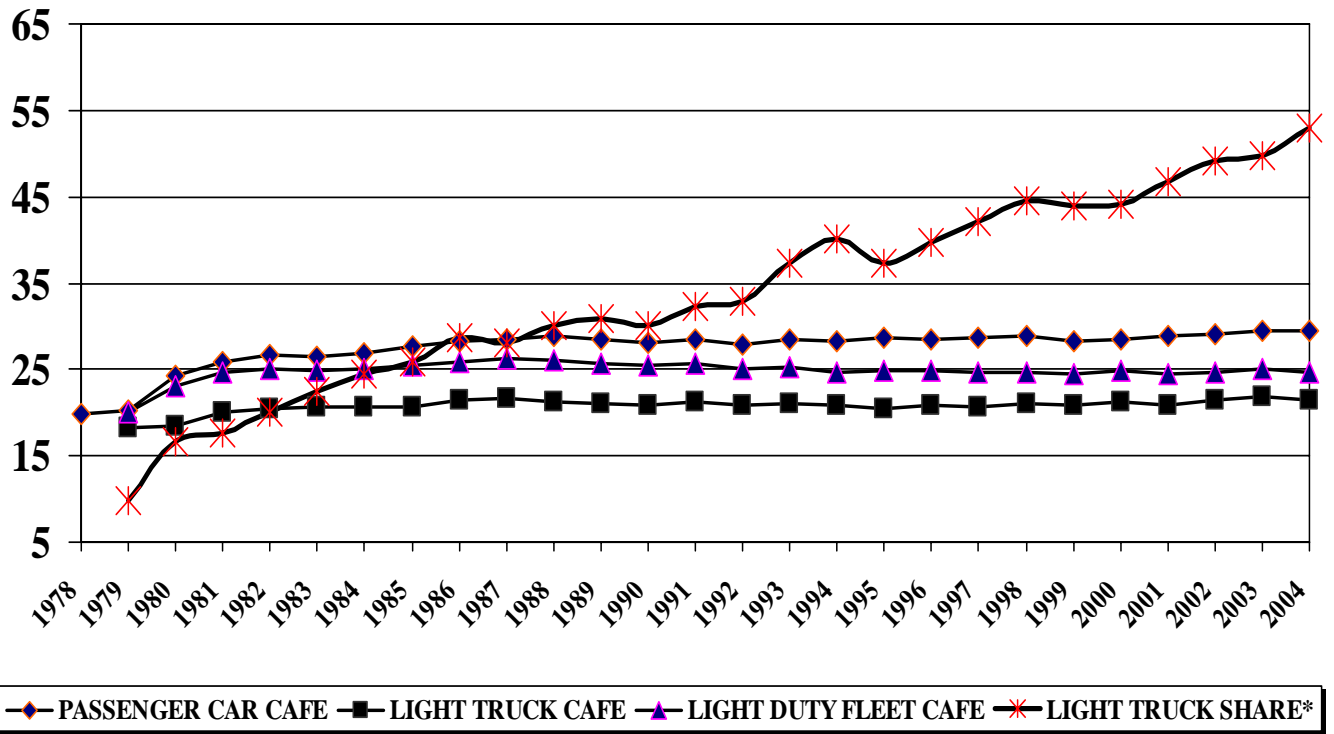
Figure II-4 illustrates an increase in the light duty fleet (combined passenger cars and light trucks) average CAFE through MY 1987, followed by a gradual decline. (Also, see Table II-6.) The shift to light trucks for general transportation has had a significant effect on fuel consumption, and may continue to do so in the future if sales of light trucks remain relatively constant or increase. In fact, due largely to the increasing proportion of light trucks in the fleet, the overall light vehicle fleet CAFE average was 24.6 mpg in MY 2004. The all-time high CAFE level for the overall light vehicle fleet was 26.2 mpg in MY 1987.

#### E. Domestic and Import Fleet Fuel Economy Averages

Domestic and import passenger car fleet average CAFE values have improved since MY 1978, although the increase is far more dramatic for the domestic fleet. In MY 2004, the domestic passenger car fleet average CAFE value improved to 29.9 mpg, the largest ever recorded. In MY 2004, the import passenger car fleet average CAFE value was 28.7 mpg. Compared with MY 1978, this reflects an increase of 11.2 mpg for domestic cars and 1.4 mpg for import cars.

The disparity between the average CAFEs of the import and domestic manufacturers has declined in recent years as domestic manufacturers have maintained relatively stable CAFE values and vehicle offerings, while the import manufacturers have introduced new vehicle offerings that feature larger vehicles.

Figure II-4  
**CAFE PERFORMANCE  
 TOTAL FLEET**



\*The light truck share represents the percentage of the total light duty fleet.

Table II-6

DOMESTIC AND IMPORT PASSENGER CAR AND LIGHT TRUCK FUEL ECONOMY AVERAGES FOR MODEL YEARS 1978-2004 (in MPG)										
Model Year	Domestic			Import			All Cars	All Light Trucks	Total Fleet	Light Truck Share of Fleet (%)
	Car	Light Truck	Combined	Car	Light Truck*	Combined				
1978	18.7	...	...	27.3	...	...	19.9	...	...	...
1979	19.3	17.7	19.1	26.1	20.8	25.5	20.3	18.2	20.1	9.8
1980	22.6	16.8	21.4	29.6	24.3	28.6	24.3	18.5	23.1	16.7
1981	24.2	18.3	22.9	31.5	27.4	30.7	25.9	20.1	24.6	17.6
1982	25.0	19.2	23.5	31.1	27.0	30.4	26.6	20.5	25.1	20.1
1983	24.4	19.6	23.0	32.4	27.1	31.5	26.4	20.7	24.8	22.5
1984	25.5	19.3	23.6	32.0	26.7	30.6	26.9	20.6	25.0	24.4
1985	26.3	19.6	24.0	31.5	26.5	30.3	27.6	20.7	25.4	25.9
1986	26.9	20.0	24.4	31.6	25.9	29.8	28.2	21.5	25.9	28.6
1987	27.0	20.5	24.6	31.2	25.2	29.6	28.5	21.7	26.2	28.1
1988	27.4	20.6	24.5	31.5	24.6	30.0	28.8	21.3	26.0	30.1
1989	27.2	20.4	24.2	30.8	23.5	29.2	28.4	21.0	25.6	30.8
1990	26.9	20.3	23.9	29.9	23.0	28.5	28.0	20.8	25.4	30.1
1991	27.3	20.9	24.4	30.1	23.0	28.4	28.4	21.3	25.6	32.2
1992	27.0	20.5	23.8	29.2	22.7	27.9	27.9	20.8	25.1	32.9
1993	27.8	20.7	24.2	29.6	22.8	28.1	28.4	21.0	25.2	37.4
1994	27.5	20.5	23.5	29.7	22.0	27.8	28.3	20.8	24.7	40.2
1995	27.7	20.3	23.8	30.3	21.5	27.9	28.6	20.5	24.9	37.4
1996	28.1	20.5	24.1	29.6	22.2	27.7	28.5	20.8	24.9	39.7
1997	27.8	20.2	23.3	30.1	22.1	27.5	28.7	20.6	24.6	42.1
1998	28.6	20.5	23.3	29.2	22.9	27.6	28.8	21.0	24.7	44.5
1999	28.0	...	...	29.0	...	...	28.3	20.9	24.5	44.0
2000	28.7	...	...	28.3	...	...	28.5	21.3	24.8	44.2
2001	28.7	...	...	29.0	...	...	28.8	20.9	24.5	46.7
2002	29.1	...	...	28.8	...	...	29.0	21.4	24.7	49.1
2003	29.1	...	...	29.9	...	...	29.5	21.8	25.1	49.8
2004	29.9	...	...	28.7	...	...	29.5	21.5	24.6	53.1



\*Light trucks from foreign-based manufacturers. NOTE: Beginning with MY 1999, the agency ceased categorizing the total light truck fleet by either domestic or import fleets.

### SECTION III: RECENT ACTIVITIES

#### A. Light Truck CAFE Standards

49 U.S.C. 32902(a) provides, for non-passenger automobiles, that at least 18 months before the beginning of each model year, the Secretary of Transportation shall prescribe by regulation average fuel economy standards for automobiles (except passenger automobiles) manufactured by a manufacturer in that model year. Each standard shall be the maximum feasible average fuel economy level that the Secretary decides the manufacturers can achieve in that model year. In calendar year 2003, NHTSA published a final rule establishing light truck CAFE standards of 21.0 mpg for MY 2005, 21.6 mpg for MY 2006, and 22.2 mpg for MY 2007 (67 FR 16052; April 7, 2003). The agency used calendar year 2004 to focus on reforming the automobile fuel economy standards program, for light trucks. (See Section E.)

#### B. Low Volume Petitions

49 U.S.C. 32902(d) provides that a low volume manufacturer of passenger cars may be exempted from the generally applicable passenger car fuel economy standards, if these standards are more stringent than the maximum feasible average fuel economy for that manufacturer, and if NHTSA establishes an alternative standard for that manufacturer at its maximum feasible level. A low volume manufacturer is one that manufactured fewer than 10,000 passenger cars worldwide, in the model year for which the exemption is sought (the affected model year) and in

the second model year preceding that model year. In 2004, NHTSA did not act on any low volume petitions.

### C. Enforcement

49 U.S.C. 32912(b) imposes a civil penalty of \$5.50 for each tenth of a mpg by which a manufacturer's CAFE level falls short of the standard, multiplied by the total number of passenger automobiles or light trucks produced by the manufacturer in that model year. Credits earned for exceeding the standard, in any of the three model years immediately before or subsequent to the model years in question, can be used to offset the penalty.

Table III-1 shows CAFE fines paid by manufacturers for MY 2003. Porsche paid civil penalties totaling \$3,538,243.50 for failing to comply with both the CAFE standards of 27.5 mpg for passenger cars and 20.7 mpg for light trucks.

Table III-1

<b>CAFE FINES COLLECTED</b>			
<b>Model Year</b>	<b>Manufacturer</b>	<b>Amount Fined (\$)</b>	<b>Date Paid</b>
2003	Porsche North America, Inc.	3,348,609	12/04
	Porsche North America, Inc.*	189,634.50	12/04

\*For Light Trucks

#### D. Carryback/Carryforward Plans

49 U.S.C. 32903 allows an automobile manufacturer to earn fuel economy credits during any model year in which the manufacturer's fleet exceeds the established CAFE standard. The amount of credits a manufacturer earns is determined by multiplying the number of tenths of a mile per gallon by which the average fuel economy of the manufacturer's fleet in the model year exceeds the standard by the total number of vehicles in the manufacturer's fleet for the model year.

Already earned CAFE credits are carried forward by the agency (with affected manufacturers given an opportunity to comment on the agency's allocation of credits), and distributed to any of the three succeeding model years in which the manufacturer's fleet falls below the CAFE standard. For example, credits earned in MY 2001 may be used to offset deficiencies in MYs 2002, 2003, and/or 2004. A manufacturer also may submit to the agency a carryback plan to demonstrate that it will earn sufficient credits within the following three model years, which can be allocated to offset penalties in the model year involved.

Nissan submitted a carryforward plan dated October 10, 2003 to the agency for its MY 2003 import passenger car fleet CAFE compliance, using credits earned in MY 2000 to offset its MY 2003 shortfall liability. NHTSA approved this carryforward plan on January 7, 2004.

BMW submitted a carryforward plan dated September 14, 2004 to the agency for its MY 2002 light truck fleet CAFE compliance, using credits earned in MY 2005 to offset its MY 2002 shortfall liability. Action on this petition will be completed in 2005.

Lotus submitted a carryforward plan dated March 24, 2004 to the agency for its MYs 2002, 2003, and 2004 import passenger car fleet CAFE compliance, using credits earned in MY 2005 to offset its MYs 2002, 2003, and 2004 shortfall liability. NHTSA approved this carryforward plan on July 21, 2004.

E. Reforming the Automobile Fuel Economy Standards Program

In calendar year 2004, NHTSA continued analytical work, technology assessment, and rulemaking activities. The agency published an advance notice of proposed rulemaking (68 FR 74908; December 29, 2003). The agency's docket for this notice closed on April 27, 2004, with a total of 1,460 recorded submissions. It is the agency's intent to identify and implement reforms to the CAFE program that will facilitate improvements in fuel economy without compromising motor vehicle safety or employment. A comprehensive review of the CAFE program, including development and analysis of CAFE reform proposals was conducted, possibly resulting in one or more rulemakings. Much of the analysis needed to determine new CAFE standards occurred in calendar year 2004.

F. Nissan Two-Fleet Rule Exemption

On April 22, 2004, NHTSA granted a petition that would enable Nissan North America to figure its CAFE on a single fleet. The CAFE statute requires NHTSA to grant such petitions unless it finds that doing so would reduce jobs in the United States related to motor vehicle manufacturing. In its analysis, NHTSA found that granting the petition would not reduce employment in the United States and that it might continue several parts-manufacturing jobs in this country. NHTSA estimated that jobs would be lost if it denied Nissan's petition.

Under a "two-fleet" rule, the CAFE statute requires that auto manufacturers, in calculating fuel economy, divide their vehicles into domestic and non-domestic fleets. With the petition granted, Nissan can combine its fuel-efficient Mexican-made model with its less fuel-efficient models to create a single fleet that is more likely to meet the CAFE standard. The exemption from the two-fleet rule applies to 2006-2010 model year cars (69 FR 21883).