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Automobile and Light Truck Fuel Economy: The CAFE Standards

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SUMMARY

The House passed H.R. 6, the Energy Policy Act of 2005, on April 21, 2005 (249-183). It includes provisions strongly similar to language that appeared in the omnibus energy legislation reported from conference during the 108th Congress. The new legislation would authorize $2 million annually during FY2006-FY2010 for the National Highway Traffic and Safety Administration (NHTSA) to carry out fuel economy rulemakings. It also would expand the criteria that the agency takes into account in setting maximum feasible fuel economy for cars and light trucks.

One issue over the years has been the test procedures that measure vehicle fuel economy. Consumers have noted that in-use fuel economy rarely meets rated fuel economy. One bill introduced in the 109th Congress, the Fuel Efficiency Truth in Advertising Act of 2005 (H.R. 1103) would direct the Environmental Protection Agency (EPA) to revise its test procedures, taking into account a number of changes in vehicle characteristics and use since the procedures were last changed. During House debate on H.R. 6, an amendment that would require the fuel economy stickers on new cars to better reflect in-use fuel economy was passed (259-172), while an amendment to raise the Corporate Average Fuel Economy (CAFE) standard to 33 miles per gallon by model year (MY) 2015 was rejected (177-254). On April 27, 2005, Senator Domenici, Chairman of the Senate Committee on Energy and Natural Resources, indicated that discussions about Senate legislation had been initiated and were continuing.

The Energy Policy and Conservation Act of 1975 (P.L. 94-163, EPCA) established new car fuel economy standards for passenger automobiles and light-duty trucks. The current corporate average fuel economy standard (CAFE) is 27.5 miles per gallon (mpg) for passenger automobiles. On April 1, 2003, NHTSA issued a final rule to boost the CAFE of light-duty trucks by 1.5 mpg by 2007. The rule set the interim standards at 21.0 mpg for model year (MY)2005, 21.6 mpg for MY2006, and 22.2 for MY2007. It was the first increase in CAFE since MY1996. The light-duty truck category includes sport utility vehicles (SUVs). The standards are determined by NHTSA, an agency within the the Department of Transportation.

A National Academy of Sciences (NAS) study, released on July 30, 2001, concluded that it was possible to achieve a more than 40% improvement in light truck and SUV fuel economy over a 10-15 year period at costs that would be recoverable over the lifetime of ownership.

Interest has continued in studying whether the CAFE standards and program should be restructured. Among the issues are the definitions and regulations for passenger cars and light duty trucks. Critics argue that the current system encourages manufacturers to nudge larger passenger vehicles into the light truck category and penalizes manufacturers who serve the market for the heavier vehicles in the light truck category. Basing CAFE on vehicle attributes was offered as another policy option. NHTSA has the latitude to make changes in the CAFE program, but some alterations to the structure of the program might require congressional authorization. One bill introduced in the House (H.R. 70) would require that standards gradually apply to vehicles of up to 10,000 pounds gross vehicle weight (GVR).

MOST RECENT DEVELOPMENTS

The House passed H.R. 6, the Energy Policy Act of 2005, on April 21, 2005 (249-183). It includes provisions strongly similar to language that appeared in the omnibus energy legislation reported from conference during the 108th Congress. The new legislation would authorize $2 million annually during FY2006-FY2010 for the National Highway Traffic Safety Administration (NHTSA) to carry out fuel economy rulemakings. It also would expand the criteria that the agency takes into account in setting maximum feasible fuel economy for cars and light trucks.

One issue over the years has been the test procedures that measure vehicle fuel economy. During House debate on H.R. 6, an amendment that would require the fuel economy stickers on new cars to better reflect in-use fuel economy was passed (259-172), while an amendment to raise the Corporate Average Fuel Economy (CAFE) standard to 33 miles per gallon by model year (MY) 2015 was rejected (177-254). On April 27, 2005, Senator Domenici, Chairman of the Senate Committee on Energy and Natural Resources, indicated that discussions about Senate legislation had been initiated and were continuing.

Some policymakers also argue that the CAFE standards and program should be restructured. Among the issues here are the definitions and regulations for passenger cars and light duty trucks, and whether CAFE requirements should apply to a larger universe of vehicles. One bill introduced in the House (H.R. 705) would require that CAFE standards gradually apply to vehicles of up to 10,000 pounds gross vehicle weight (GVW).

BACKGROUND AND ANALYSIS

Origins of CAFE

The Arab oil embargo of 1973-1974 and the tripling in the price of crude oil brought into sharp focus the fuel inefficiency of U.S. automobiles. New car fleet fuel economy had declined from 14.8 miles per gallon (mpg) in model year (MY)1967 to 12.9 mpg in 1974. In the search for ways to reduce dependence on imported oil, automobiles were an obvious target. The Energy Policy and Conservation Act (P.L. 94-163) established corporate average fuel economy (CAFE) standards for passenger cars for MY1978-MY1980 and 1985 and thereafter. The CAFE standards called for a doubling in new car fleet fuel economy, establishing a standard of 18 mpg in MY1978 and rising to 27.5 by MY1985. (Interim standards for model years 1981-1984 were announced by the Secretary of Transportation in June of 1977.) EPCA also established fuel economy standards for light duty trucks, beginning at 17.2 mpg in MY1979 and currently 20.7 mpg. However, on April 1, 2003, NHTSA issued a final rule that will boost light truck fuel economy to 22.2 mpg in MY2007 — an increase of 1.5 mpg. (The CAFE standards to FY2003 are summarized in **Table 1**.)

Compliance with the standards is measured by calculating a sales-weighted mean of the fuel economies of a given manufacturer's product line, with domestically produced and imported vehicles measured separately. The penalty for non-compliance is $5.50 for every 0.1 mpg below the standard, multiplied by the number of cars in the manufacturer's new car fleet for that year. Civil penalties collected from 1983 to 2002 totaled slightly more than $600 million.

When oil prices rose sharply in the early 1980s, smaller cars were selling well, and it was expected that manufacturers would have no difficulty complying with the standards. However, oil prices had declined by 1985. Sales of smaller cars tapered off as consumers began to place less value on fuel economy and gasoline cost as an input in the overall costs of vehicle ownership. In response to petitions from manufacturers facing stiff civil penalties for noncompliance, the National Highway Traffic Safety Administration (NHTSA) relaxed the standard for model years 1986-1989, but it was restored to 27.5 in MY1990. The Persian Gulf War in 1990 caused a brief spike in oil prices, but it also demonstrated that it was unlikely that the United States or many of the producing nations would tolerate a prolonged disruption in international petroleum commerce. As a consequence, U.S. dependence upon imported petroleum, from a policy perspective, was considered less of a vulnerability.

It was also becoming apparent that reducing U.S. dependence on imported oil would be extremely difficult without imposing a large price increase on gasoline, or restricting consumer choice in passenger vehicles. Many argued that the impacts of such actions upon the economy or the automotive industry would be unacceptable. Meanwhile, gasoline consumption, which fell to 6.5 million barrels per day (mbd) in 1982, averaged nearly 8.4 mbd in 1999, and in April 2005, had reached roughly 9.0 mbd despite prices exceeding year-earlier levels by more than $.40/gallon.

Past Role of CAFE Standards. The effectiveness of the CAFE standards themselves has been controversial. Since 1974, domestic new car fuel economy has roughly doubled; the fuel economy of imports has increased by roughly one-third. Some argue that these improvements would have happened as a consequence of rising oil prices during the 1970s and 1980s. Some studies suggest that the majority of the gains in passenger car fuel economy during the 1970s and 1980s were technical achievements, rather than the consequence of consumers' favoring smaller cars. Between 1976 and 1989, roughly 70% of the improvement in fuel economy was the result of weight reduction, improvements in transmissions and aerodynamics, wider use of front-wheel drive, and use of fuel-injection. The fact that overall passenger car fleet fuel economy remained comparatively flat during a period of declining real prices for gasoline also suggested that the CAFE regulations have contributed to placing some sort of floor under new-car fuel economy.

General criticisms of raising the CAFE standards have been that, owing to the significant lead times manufacturers need to change model lines and because of the time needed for the vehicle fleet to turn over, increasing CAFE is a slow and inefficient means of achieving reductions in fuel consumption. Further, it is argued that the standards risk interfering with consumer choice and jeopardize the economic well-being of the automotive industry. Opponents of raising CAFE usually cite fears that higher efficiency will likely be obtained by downsizing vehicle size and weight, raising concerns about safety.

Proponents of CAFE increases have argued that boosting the standards might bring about the introduction of technological improvements that do not compromise features that consumers value, but which would otherwise not be added because these improvements do add to the cost of a new vehicle.

Table 1. Fuel Economy Standards for Passenger Cars and Light Trucks: Model Years 1978 Through 2007

(miles per gallon)

Model year	Passenger cars	Light trucks[a]		
		Two-wheel drive	Four-wheel drive	Combined[b,c]
1978	[d]18.0	—	—	—
1979	[d]19.0	17.2	15.8	—
1980	[d]20.0	16.0	14.0	([e])
1981	2.0	[f]16.7	15.0	([e])
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	[d]27.5	[g]19.7	[g]18.9	[g]19.5
1986	[h]26.0	20.5	19.5	20.0
1987	[i]26.0	21.5	19.5	20.5
1988	26.0	21.0	19.5	20.5
1989	[j]26.5	21.5	19.0	20.0
1990	[d]27.5	20.5	19.0	20.2
1991	[d]27.5	20.7	19.1	20.2
1992	[d]27.5	—	—	20.2
1993	[d]27.5	—	—	20.4
1994	[d]27.5	—	—	20.5
1995	[d]27.5	—	—	20.6
1996	[d]27.5	—	—	20.7
1997	[d]27.5	—	—	20.7
1998	[d]27.5	—	—	20.7
1999	[d]27.5	—	—	20.7
2000	[d]27.5	—	—	20.7
2001	[d]27.5	—	—	20.7
2002	[d]27.5	—	—	20.7
2003	[d]27.5	—	—	20.7
2004	[d]27.5	—	—	20.7
2005	[d]27.5	—	—	21.0
2006	[d]27.5	—	—	21.6
2007	[d]27.5	—	—	22.2

Source: Automotive Fuel Economy Program, Annual Update, Calendar Year 2001, appearing in full at [http://www.nhtsa.dot.gov/cars/problems/studies/fuelecon/index.html#TOC]; and U.S. Department of Transportation. National Highway Traffic Safety Administration. *Light Truck Average Fuel Economy Standard, Model Year 2004*. Final Rule. [http://www.nhtsa.dot.gov/cars/rules/rulings/Cafe/LightTruck/NPRM-final.htm].

[a]Standards for MY1979 light trucks were established for vehicles with a gross vehicle weight rating (GVWR) of 6,000 pounds or less. Standards for MY1980 and beyond are for light trucks with a GVWR of 8,500 pounds or less.

[b]For MY1979, 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.

[c]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.

[d]Established by Congress in Title V of the act.

[e]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.

[f]Revised in June 1979 from 18.0 mpg.

[g]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.

[h]Revised in October 1985 from 27.5 mpg.

[i]Revised in October 1986 from 27.5 mpg.

[j]Revised in September 1988 from 27.5 mpg.

There were highly controversial attempts to significantly raise the CAFE standards on passenger cars in the early 1990s. One proposal included in omnibus energy legislation was so controversial that it contributed to the Senate's inability in 1991 to bring the bill up for debate on the floor.

Current fleet fuel economy averages are shown in the following table.

Table 2. Domestic and Import Passenger Car and Light Truck Fuel Economy Averages for Model Years 1978-2002

(in MPG)

Model Year	Domestic			Import			All cars	All light trucks	Total fleet
	Car	Light Truck	Com-bined	Car	Light[a] truck	Com-bined			
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
1980	22.6	16.8	21.4	29.6	24.3	28.6	24.3	18.5	23.1
1981	24.2	18.3	22.9	31.5	27.4	30.7	25.9	20.1	24.6
1982	25.0	19.2	23.5	31.1	27.0	30.4	26.6	20.5	25.1
1983	24.4	19.6	23.0	32.4	27.1	31.5	26.4	20.7	24.8
1984	25.5	19.3	23.6	32.0	26.7	30.6	26.9	20.6	25.0
1985	26.3	19.6	24.0	31.5	26.5	30.3	27.6	20.7	25.4
1986	26.9	20.0	24.4	31.6	25.9	29.8	28.2	21.5	25.9
1987	27.0	20.5	24.6	31.2	25.2	29.6	28.5	21.7	26.2
1988	27.4	20.6	24.5	31.5	24.6	30.0	28.8	21.3	26.0
1989	27.2	20.4	24.2	30.8	23.5	29.2	28.4	20.9	25.6
1990	26.9	20.3	23.9	29.9	23.0	28.5	28.0	20.8	25.4
1991	27.3	20.9	24.4	30.1	23.0	28.4	28.4	21.3	25.6
1992	27.0	20.5	23.8	29.2	22.7	27.9	27.9	20.8	25.1
1993	27.8	20.7	24.2	29.6	22.8	28.1	28.4	21.0	25.2
1994	27.5	20.5	23.5	29.6	22.0	27.8	28.3	20.7	24.7
1995	27.7	20.3	23.8	30.3	21.5	27.9	28.6	20.5	24.9
1996	28.1	20.5	24.1	29.6	22.2	27.7	28.5	20.8	24.9
1997	27.8	20.2	23.3	30.1	22.1	27.5	28.7	20.6	24.6
1998	28.6	20.5	23.3	29.2	22.9	27.6	28.8	21.1	24.7
1999	28.0	—	—	29.0	—	—	28.3	20.9	24.5
2000	28.7	—	—	28.3	—	—	28.5	21.2	24.8
2001	28.7	—	—	29.0	—	—	28.8	20.9	24.6
2002	29.0	—	—	28.7	—	—	28.9	21.3	24.6

Note: Beginning with MY1999, the agency ceased categorizing the total light truck fleet by either domestic or import fleets.

[a]Light trucks from foreign-based manufacturers.

NHTSA typically established truck CAFE standards 18 months prior to the beginning of each model year, as EPCA allows. However, such a narrow window permitted NHTSA to do little more than ratify manufacturers' projections for the model year in question. In April 1994, the agency proposed to abandon this practice and issued an Advance Notice of Proposed Rulemaking inviting comment on what level that standards might be established for trucks for MY1998-MY2006. The following year, however, after a change in congressional leadership, Congress included language in the FY1996 Department of

Transportation (DOT) Appropriations to prohibit expenditures for any rulemaking that would make any adjustment to the CAFE standards. Identical language was included in the appropriations and spending bills for FY1997-FY2000. An effort to pass a sense of the Senate amendment that conferees on the FY2000 DOT Appropriations should not agree to the House-passed rider for FY2000 was defeated in the Senate on September 15, 1999 (55-40). The rider also appeared in the FY2001 DOT Appropriations (H.R. 4475) approved by the House Committee on Appropriations May 16, 2000, and approved by the House May 19, 2000. However, the Senate insisted that the language be dropped in conference, opening the way for NHTSA to initiate rulemakings once again.

The conferees also agreed to authorize a study of CAFE by the National Academy of Sciences (NAS) in conjunction with DOT. That study, released on July 30, 2001, concluded that it was possible to achieve more than a 40% improvement in light truck and SUV fuel economy over a 10-15 year period at costs that would be recoverable over the lifetime of ownership. A study released in December 2004 by a National Commission on Energy Policy established by foundation money recommended that Congress instruct NHTSA to raise CAFE standards over a five-year period beginning not later than 2010. The commission recommended that manufacturers be able to trade the fuel economy credits earned by exceeding the standards. Additionally, should technologies not advance as quickly as anticipated, the government should also sell credits at some pre-specified price for the purpose of placing a cap on compliance costs. Lastly, the commission suggested an aggressive tax incentive program to encourage production and purchase of hybrid and advanced diesel vehicles. The commission report, *Ending the Energy Stalemate: A Bipartisan Strategy to Meet America's Energy Challenges*, is available online at [http://64.70.252.93/O82F4682.pdf].

NHTSA Rulemaking for MY2005-MY2007: Light Truck Fuel Economy

Today, light trucks are a larger portion of the total vehicle population, and travel more annual vehicle miles, than in the past. For example, in 1980, light trucks composed 19.9% of the U.S. new automobile market. 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%. 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 attributable to these vehicles has increased.

On December 16, 2002, NHTSA issued a proposed rule calling for an increase in light-duty truck CAFE to 21.0 mpg in MY2005, 21.6 mpg in MY2006, and 22.2 mpg in MY2007. Noting the target of a 5 billion gallon savings between MY2006 and MY2012 called for in the conference energy bill, NHTSA indicated that the proposed increases for MY2006-MY2007 would save more than 3 billion gallons and, if the standard remained at 22.2 mpg through MY2012, approximately 8 billion gallons of gasoline would be saved during the period of MY2006-MY2012. On April 1, 2003, NHTSA announced its adoption of the proposed rule.

In the December 2002 proposal, NHTSA expressed its belief that "some manufacturers may be able to achieve CAFE performance better than they currently project." The agency's analysis assumed that compliance would be achieved by improvements in technology, and not by lightening vehicles and jeopardizing vehicle safety. NHTSA also indicates that it has "tentatively concluded that it is unnecessary for any manufacturer to restrict the utility of their products to meet our proposed CAFE standards."

NHTSA's calculation of the net benefits of the proposed boost to SUV CAFE is shown below. The estimate of the net benefits is significantly higher in the second and third years because the first increment of improvement is only 0.3 mpg, while it is 0.6 mpg in the second and third years. The "societal benefits" are calculated on an assumption of $0.083 per gallon over the lifetime of the vehicle. This assumes a benefit of $0.048 for the effect on the world market price for gasoline owing to lower U.S. demand, and $0.035 for the reduction in threat from oil supply disruption.

	Total Costs (million)	Total Societal Benefits (million)	Net Benefits (million)
MY2005	$108	$219	$111
MY2006	221	513	292
MY2007	373	794	421

Though NHTSA announced a boost of 1.5 mpg in light truck fuel economy in its final rule issued April 1, 2003, some argue that more steps should be taken. Some policymakers believe an increase in passenger automobile CAFE is also in order. Another idea has been to require efficiency improvements in the operation of heavy trucks. In the 108th Congress, Senator Feinstein introduced legislation (S. 255) that, among other provisions, would have expanded the applicability of fuel economy standards to vehicles up to 10,000 pounds GVW. Others argue that the automotive industry should not be further burdened at this time by higher CAFE requirements.

Advance Notice of Proposed Rulemaking: December 2003

On December 22, 2003, NHTSA issued an Advance Notice of Proposed Rulemaking inviting comments not on the appropriate stringency of CAFE standards but on the structure of the program. The agency noted four broad criticisms of the program, and areas in which it invited comment:

- *Vehicle classifications.* Some argue that the considerable difference in passenger car and light truck fuel economy standards presents an incentive for manufacturers to produce vehicles that can be classified in the light truck category. Similarly, the applicability of CAFE standards to vehicles less than 8,500 pounds Gross Vehicle Weight (GVW) encourages manufacturers to offer vehicles that exceed this weight. Among many issues, the agency invited comment on whether or not the CAFE program should be extended to encompass vehicles of less than 10,000 pounds GVW. Legislation to

make vehicles rated at this weight subject to CAFE standards has been introduced in the 109th Congress (H.R. 705).

- *Safety*. The trade-off between vehicle weight and safety continues to be controversial. Some argue that the increase in light truck fleet fuel economy to 22.2 mpg by 2007 will be achieved, in part, by reducing the weight of vehicles and possibly raising the risk to passengers and drivers. However, it is also noted that weight reduction of the heaviest vehicles in this category might achieve some savings without penalty to safety. Complicating any analysis is the fact that reductions in vehicle weight raise the odds of survival for occupants of other vehicles involved in an accident. There are a number of other factors governing safety; it is a complex issue.

- *Economic impacts.* Increases in mandated fuel economy have economic consequences. Analysis by the Energy Information Administration suggests that a "sustained gradual increase" in light truck fuel economy of 0.6 mpg from 2007 to 2025 would incur a loss of $84 billion in real GDP over the period. Additionally, the structure of the light truck standards favors manufacturers who produce a line of models that includes some of the smaller vehicles in the light truck class. For example, two manufacturers could produce a vehicle of similar weight. However, the manufacturer of the less efficient of these two vehicles could still have a lower overall truck fleet fuel economy average if its product mix includes more smaller trucks than the other manufacturer.

- *Vehicle attributes.* The agency invited comment on whether or not the definitions and classifications of light trucks need to be amended in light of the considerable change in the vehicle feet and consumer demand since the CAFE program went into effect in 1977. Options that have been proposed include keying vehicle CAFE to vehicle "attributes," which could include vehicle weight or vehicle size, and the establishment of multiple classifications. Some argue that this will still encourage "upsizing," or "vehicle creep," to place a vehicle in a less stringent CAFE category. Classification of vehicles with "flat floors" as light trucks — that is, the capability of removing seats to create a flat load floor — has enabled manufacturers to incorporate flat floor design into vehicles that might have otherwise been classified as passenger automobiles. The PT Cruiser is cited as an example of this. Inclusion of cargo beds of any size may also allow classification of a vehicle as a light truck.

Legislation introduced in the 109th Congress would also address the test cycle used by the Environmental Protection Agency (EPA) to measure vehicle fuel economy for determining whether a manufacturer's fleet of new cars is in compliance with the CAFE standard. Consumers have found that in-use fuel economy falls short of the published measurements that also appear posted on the windows of new cars for sale. Advocates of changes argue that the current test cycle is not consistent with current vehicle characteristics and the way light-duty vehicles are used. For example, the estimated average length of vehicle trips is shorter than the length assumed in the test cycle and would not reflect the

typical number of engine cold starts. The test cycle does not include the operation of air conditioning.

The fuel economy of individual vehicles is calculated by running vehicles through a test on a dynamometer intended to simulate a driving cycle that assumes 11 miles driven in an urban setting and 10 miles on open highway. To bring this calculation more into line with in-use fuel economy experienced by drivers, the EPA makes a downward adjustment of 10% for the city portion of the cycle and 22% for the highway portion. However, many argue that this is an insufficient adjustment and that in-use fuel economy is still less than the estimate provided to drivers on a sticker posted to the windows of new cars.

An amendment was brought to the House floor during the debate on H.R. 6 to require EPA to make adjustments to bring the posted information on in-use fuel economy further in conformity with drivers' actual on-road experience. Without specifying a second test for the purpose of providing an estimate of in-use fuel economy, opponents of the amendment were fearful that the effect of the amendment as drafted would be to lower manufacturers' calculated annual CAFE by as much as 10%-20% and make compliance with the CAFE standards significantly more difficult. A "perfecting" amendment was approved (259-172) that would essentially require that EPA make further adjustment in deriving the adjusted, in-use fuel economy that is posted to new vehicle windows in the showroom.

CAFE in the 109th Congress: Omnibus Energy Legislation

The House passed H.R. 6, the Energy Policy Act of 2005, on April 21, 2005 (249-183). With one exception noted above, the bill includes provisions strongly similar to language that appeared in the omnibus energy legislation reported from conference during the 108th Congress. The new legislation would authorize $2 million annually during FY2006-FY2010 for NHTSA to carry out fuel economy rulemakings. It also would expand the criteria that the agency takes into account in setting maximum feasible fuel economy for cars and light trucks, including the effects on automotive industry employment. As noted above, H.R. 6 was amended on the House floor to require that fuel economy information posted on new cars would more closely approximate in-use fuel economy (259-172). An amendment to raise the CAFE standard to 33 miles per gallon by MY2015 was rejected (177-254).

On April 27, 2005, Senator Domenici, Chairman of the Senate Committee on Energy and Natural Resources, indicated that discussions about Senate legislation had been initiated and were continuing.

Improving Fuel Economy: Other Policy Approaches

Two possible approaches to reduce gasoline consumption involve (1) raising the price of gasoline through taxation, or other means, to a level that induces some conservation; and (2) increasing the efficiency of the automobile fleet in use. Of course, a combination of these two broad approaches can be used as well.

The Hydrogen Fuel Initiative, FreedomCAR and the Partnership for a New Generation of Vehicles (PNGV) (1993-2003). Over five years, the Administration is seeking a total funding increase of $720 million. These initiatives would fund research on

hydrogen fuel and fuel cells for transportation and stationary applications. The 108th Congress for FY2004 appropriated approximately $50 million for the initiatives ($20 million less than the Administration request) above the FY2003 level, and for FY2005 an additional $25 million above the FY2004 level. The Energy Policy Act of 2005 (H.R. 6) would authorize $4 billion during the period FY2006-FY2010. The comprehensive legislation in the 108th Congress would have set goals for the production of hydrogen-fueled passenger vehicles. No goals are included in H.R. 6.

Critics of the Administration initiative have suggested that the hydrogen program was intended to forestall attempts to significantly raise vehicle CAFE standards, and that it relieves the automotive industry of assuming more initiative in pursuing technological innovations. In addition, critics argue that hydrogen-fueled vehicles may ultimately be infeasible, and that attention and funding should be focused on other research areas. On the other hand, supporters argue that it is appropriate for government to become involved in the development of technologies that are too costly to draw private sector investment. At issue for these policymakers will be whether the federal initiative and level of funding is aggressive enough. (For additional information, see CRS Report RS21442, *Hydrogen and Fuel Cell R&D: FreedomCAR and the President's Hydrogen Fuel Initiative*.)

Price of Gasoline. Owing to higher taxation of gasoline in other nations, Americans enjoy one of the lowest prices for gasoline. The price of gasoline has increased significantly, although, adjusted into real dollars, current prices are still well short of any historic high. Past proposals to raise the price of gasoline to leverage consumers into more efficient vehicles have garnered little support. Owing to the relative price inelasticity of gasoline demand, many believe that the size of the price increase it would take to curb gasoline consumption to any degree would have a damaging effect on the economy of several times greater magnitude. Indeed, analysis of the research (Plotkin, Greene, 1997, cited in References) suggested that an increase in gasoline taxes would be one-third as effective in achieving a reduction in demand as studies of the 1980s once projected. This is a significant reflection of the place that personal transportation and inexpensive gasoline has assumed in our economy and value system.

Some have argued during past episodes of high prices that, when prices softened again, the federal government should step in and capture the difference as a tax, and possibly devote the proceeds to developing public transportation infrastructure and incentives. This tax could be adjusted periodically to see that gasoline would not become less expensive than a certain level in real (inflation adjusted) dollars.

Owing to the unpopularity of raising gasoline prices, raising the CAFE standard is more comfortable for some; however, it is a long-term response. Depending upon the magnitude of an increase in gasoline prices, no matter what the cause, a price-induced conservation response could be nearly immediate, and may grow as consumers initially drive less and eventually seek out more efficient vehicles. However, U.S. gasoline consumption has held relatively steady despite the sharp increase in gasoline prices through the spring of 2005. It is possible that gasoline demand during the summer will be lower than it might otherwise be were prices lower, but this may prove difficult to measure and remains to be seen.

CAFE and Reduction of Carbon Dioxide Emissions. Motor vehicles are a major source of key air pollutants. Vehicles account for one-fifth of U.S. production of CO_2

emissions. There is some debate over whether raising the CAFE standards would be an ineffective or marginal way to reduce emissions of carbon dioxide. On one hand, improvements in fuel economy should enable the same vehicle to burn less fuel to travel a given distance. However, to the extent that technologies to improve fuel economy add cost to new vehicles, it has been argued that consumers will tend to retain older, less efficient cars longer. It has also been suggested that there is a correlation between improved fuel economy and an increase in miles driven and vehicle emissions. Vehicle miles traveled have continued to increase in recent years when fuel economy improved only slightly.

Perhaps the most significant current issue regarding automotive fuel economy is the decision by the state of California to require carbon dioxide emissions standards for passenger cars and light trucks. Enacted in 2002, A.B. 1498 requires the state to promulgate regulations to achieve the maximum feasible and cost-effective reduction of greenhouse gases from cars and trucks. The regulations, adopted by the California Air Resources Board on September 24, 2004, require a reduction of greenhouse gas emissions of 30% by 2016. The regulation covers passenger vehicles, but would not affect heavier vehicles such as commercial trucks or buses.

Under the Clean Air Act, California is permitted to establish its own emissions standards for automobiles, as long as those standards are at least as stringent as the federal standard. However, there is no current federal standard for greenhouse gas emissions; federal standards focus on pollutants with direct effects on air quality and health, including ground-level ozone (smog) and carbon monoxide. Critics challenge that greenhouse gases are not pollutants, and that the greenhouse gas standard is a *de facto* fuel economy standard, since reducing emissions of carbon dioxide — the key greenhouse gas — requires reductions in fuel consumption. Under CAFE, states do not have the authority to set their own standards; authority remains solely with the federal government.

Several auto manufacturers and dealers have challenged the California auto greenhouse gas standard in court. The plaintiffs argue that California lacks the authority to set a fuel economy standard under CAFE, and that greenhouse gases are not a pollutant under the Clean Air Act. California officials maintain that they have the authority under the Clean Air Act to regulate vehicle greenhouse gas emissions.

The outcome of this case will likely have major effects on the U.S. auto industry. If the standards are upheld, New York will adopt California's standards, and other states are likely to follow suit. The state of California estimates that complying with the standard could cost $1,000 per vehicle by 2016, while opponents argue that costs could be as much as $3,000 per vehicle. While reducing greenhouse gas emissions and fuel consumption, the new standards would likely increase purchase costs and potentially diminish the new car market. Further, it is likely that the standards would have varying effects on automakers who sell more or less efficient products. (For additional background, see CRS Report RS20298, *Sport Utility Vehicles, Mini-Vans, and Light Trucks: An Overview of Fuel Economy and Emissions Standards*, and CRS Report RL32764, *Global Warming: The Litigation Heats Up*.)

Other Initiatives. During Senate debate on comprehensive energy legislation in the 108th Congress, the Senate agreed (99-1) on June 9, 2003, to an amendment proposed by Senator Landrieu that would have required the Administration to develop a plan to reduce

U.S. oil consumption by 1 million barrels daily by 2013 from projected consumption levels. The amendment would not have created any new authorities. Rather, it would have given the Administration the latitude to use currently existing authorities, including CAFE. Opponents of an increase in CAFE especially embraced the amendment because it would have required a significant reduction in petroleum consumption without necessarily using CAFE as one of the levers. A similar provision was rejected as an amendment to the committee print marked up by the House Energy and Commerce Committee in mid-April 2005.

Some policymakers argue that more needs to be done to reduce vehicle fuel consumption. Currently, light truck fuel economy standards do not apply to vehicles above 8,500 pounds gross vehicle weight (GVW). Senator Feinstein has introduced legislation (S. 255) that, among other provisions, would expand the applicability of fuel economy standards to vehicles up to 10,000 pounds GVW. The Tax Incentives for Fuel Efficient Vehicles Act (S. 795), would establish a new tax credit for purchases of vehicles that exceed the current CAFE standards by at least 5 mpg and would modify the gas guzzler tax to include SUVs and some larger vehicles not currently subject to the tax. Opponents of measures like these argue that the automotive industry should not be further burdened at this time by higher CAFE requirements.

LEGISLATION

H.R. 6 (Barton)

Energy Policy Act of 2005. Introduced April 18, 2005. Among other provisions, would authorize $2 million annually during FY2006-FY2010 for the National Highway Traffic and Safety Administration (NHTSA) to carry out fuel economy rulemakings. It also would expand the criteria that the agency takes into account in setting maximum feasible fuel economy for cars and light trucks, and require that EPA make further adjustments in deriving in-use fuel economy predictions that are posted on the window of new cars. Passed by the House on April 21, 2005 (249-183).

H.R. 705 (Gilchrist)

Automobile Fuel Economy Act of 2005. To amend Title 49, United States Code, to require phased increases in the fuel efficiency standards applicable to light trucks; to require fuel economy standards for automobiles of up to 10,000 pounds gross vehicle weight; to increase the fuel economy of the federal fleet of vehicles, and for other purposes. Introduced February 9, 2005, and referred to House Subcommittee on Energy and Air Quality.

H.R. 1103 (Johnson)

Fuel Efficiency Truth in Advertising Act of 2005. Would direct EPA to update its test procedures for light-duty vehicles for the purpose of calculating vehicle fuel economy. Introduced March 3, 2005, and referred to House Committee on Energy and Commerce.

H.R. 6 (Tauzin) (108th Congress)

Enhances energy conservation and research and development, provides for security and diversity in the energy supply for the American people, and for other purposes. Introduced April 7, 2003. Passed House (247-175) April 11, 2003. Senate version passed (84-14) July

31, 2003. Reported from conference, November 17, 2003. Passed House (246-180) November 19, 2003. Motion to invoke cloture failed in the Senate (57-40), November 21, 2003.

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