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Corporate Average Fuel Economy (CAFE): A Comparison of Selected Legislation in the 110th Congress

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Summary

The rise in crude oil and gasoline prices since the winter of 2006 has renewed the focus on U.S. fuel consumption in the transportation sector. Wider concerns over greenhouse gas emissions and climate change have contributed to interest in reducing fossil fuel consumption and improving the efficiency of the U.S. transportation sector. Possible changes to the federal Corporate Average Fuel Economy (CAFE) standards are one policy option to address the issue.

CAFE standards are fleetwide fuel economy averages that manufacturers must meet each model year. Currently, separate CAFE standards are established for passenger cars and light trucks, which include sport utility vehicles (SUVs), vans, and pickup trucks. Several bills have been introduced in the 110th Congress to modify the CAFE program. Provisions vary from bill to bill but include increasing the CAFE standards for all vehicles; mandating higher CAFE for only certain vehicle classes; and/or granting the National Highway Traffic Safety Administration (NHTSA) broader authority to implement the CAFE program.

This report provides a side-by-side comparison of several bills in the 110th Congress addressing passenger vehicle fuel economy in general and the CAFE program specifically. The report covers CAFE-related Senate and House bills that would explicitly increase passenger vehicle fuel economy standards. The bills are compared on various policy options including, but not limited to, the types of provisions identified above. The report also compares provisions in bills that would establish greenhouse gas emissions standards for passenger cars outside of the CAFE structure. Such emissions standards would likely also have the effect of increasing fuel economy.

One issue in the CAFE debate over the years has been whether Congress should set CAFE standards or delegate that authority exclusively to NHTSA. For passenger cars, the original EPCA legislation established specific targets for model year (MY) 1978 and MY1985, and required that the Secretary of Transportation set standards for the interim years. Some of the current proposals would also set specific targets in the future; others would require annual improvements in CAFE by some specified percentage. In some instances, both approaches are used. Those proposals would establish a mandated CAFE by a certain date and require subsequent annual percentage increases. Some bills would also require NHTSA to set the maximum feasible interim standards.

Another key question is the form CAFE standards should take. One bill would require that the CAFE standard be expressed in grams per mile of carbon dioxide emissions (CO_2), in addition to miles per gallon. States are pre-empted from establishing their own CAFE standards but are permitted to set clean air requirements. This has generated controversy, and some believe a requirement to report fuel economy as a function of CO_2 emissions is intended to have some bearing on the differing treatment of the states between CAFE and emissions standards.

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The rise in crude oil and gasoline prices since the winter of 2006 has renewed the focus on U.S. fuel consumption in the transportation sector. Wider concerns over greenhouse gas emissions and climate change have contributed to interest in reducing fossil fuel consumption and improving the efficiency of the U.S. transportation sector. Among the various policy options to address the issue are changes to the federal Corporate Average Fuel Economy (CAFE) standards.[1] CAFE refers to the average miles per gallon used by a manufacturer's entire fleet of cars or light trucks in a given model year.

Various bills in the 110th Congress would modify the CAFE program to increase fuel economy standards for all vehicles, heighten the stringency of testing procedures, and/or grant the National Highway Traffic Safety Administration (NHTSA) broader authority to implement the program. In the Senate, S. 357 was reported, as amended, from the Committee on Commerce, Science, and Transportation on May 8, 2007. Some of its provisions were inserted, along with other energy initiatives reported from committee, into S.Amdt. 1502 to H.R. 6. H.R. 6 passed the Senate June 21, 2007.

House energy legislation that may come to the floor the week of July 30 does not include CAFE provisions. An effort to add CAFE language to House energy legislation was defeated on June 28th in a House Committee on Energy and Commerce markup (26-31). Some have argued that it would strengthen House negotiations with the Senate in conference if the House bill also includes CAFE provisions. It is possible that two CAFE proposals (H.R. 1506, H.R. 2927) may be offered as amendments during House debate when energy legislation reaches the House floor. As these bills differ widely in their scope and stringency, it is also possible that one of these bills may be used as a starting point for the development of a compromise proposal.

Background: Establishment of the CAFE Standards

The Arab oil embargo of 1973-1974 and the subsequent 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

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[1] For more information on CAFE, see CRS Report RL33413, *Automobile and Light Truck Fuel Economy: The CAFE Standards*, by Brent D. Yacobucci and Robert Bamberger.

imported oil, automobiles were an obvious target. The Energy Policy and Conservation Act (EPCA, P.L. 94-163) established CAFE standards for passenger cars for MY1978. The CAFE standards called for an eventual doubling in new car fleet fuel economy. EPCA also granted NHTSA the authority to establish CAFE standards for other classes of vehicles, including light-duty trucks.[2] NHTSA established fuel economy standards for light trucks, beginning in MY1979. For passenger cars, the current standard is 27.5 miles per gallon (mpg) for MY2007. For light trucks, the standard is 22.2 mpg for MY2007.

Under EPCA, the Secretary of Transportation has the discretion to adjust the passenger car standard within a range from 26.0 to 27.5 mpg. Any increase above 27.5 mpg or below 26.0 mpg requires the Secretary to issue an amendment to the standards. That amendment would be in force unless either chamber of Congress disapproves. However, this one-House veto could be judged to be unconstitutional.[3] The Secretary has much broader discretion with respect to setting light truck fuel economy standards (referred to in the regulations as "non-passenger automobiles"). This includes the authority to establish different standards for different classifications of these vehicles.

Recent CAFE Regulations

In April 2006, NHTSA promulgated new CAFE rules for light trucks. After MY2007, light truck manufacturers may voluntarily comply with a new "reformed" standard based on the size of each specific manufacturer's vehicles. Starting in MY2011, all light truck makers will be subject to the reformed standards, which NHTSA estimates will be equivalent to about 24.0 mpg under the old system. EPCA gives NHTSA the authority to modify the light truck standards as it sees fit, including setting standards based on vehicle attributes (in this case, size). EPCA does not grant similar flexibility in application of the passenger car standard.

Policy Options

Policy Options Within CAFE

Several bills would amend the current CAFE program to increase CAFE standards, change testing procedures, and/or grant NHTSA broader regulatory discretion. CRS analyzed the 12 CAFE-related bills with regard to several key policy options:

- combined passenger car/light truck standards,
- definition of "automobile" and "light truck,"
- mandated numeric increase in CAFE standards,

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[2] Light-duty trucks include most sport utility vehicles (SUVs), vans, and pickups.

[3] For more information see CRS Report RS22132, *Legislative Vetoes After Chadha*, by Louis Fisher.

- mandated percentage increase in CAFE standards,
- regulatory flexibility/authority,
- expanded considerations for maximum feasible fuel economy,
- attribute-based standards,
- credit trading,
- carbon dioxide emissions, and
- other key provisions.

None of these policy options is mutually exclusive, and any or all options could be adopted together. Each of these options is discussed below.

Combined Passenger Car/Light Truck Standards. One criticism of the current CAFE program is its separate treatment of light trucks and passenger cars. When EPCA was first enacted, most light trucks were used solely as work vehicles, and they constituted a relatively small percentage of the light-duty vehicle fleet. Since that time, light trucks, which include sport utility vehicles (SUVs) and vans, are used more and more as passenger vehicles. Currently, light trucks make up roughly half of the new light-duty vehicle market. As a consequence, some argue that the distinction between the two fleets should be eliminated. Critics also allege that specifications for some car-like vehicle models may have been designed purposefully to qualify those vehicles for the lower mpg standard that applies to the light truck fleet.

Definition of "Automobile" and "Light Truck". Passenger car and light truck standards could be combined by simply expanding the definition of "passenger automobile" to include light trucks up to 8,500 pounds. Some proponents of tighter standards argue that light trucks should be treated as passenger vehicles.

Further, some light trucks are too heavy to be included under the current CAFE standard. Therefore, some proposals would expand the definition of "automobile" or "light truck" to include all vehicles up to 10,000 pounds gross weight (current standards cover vehicles up to 8,500 pounds gross weight). Other proposals would expand CAFE standards to some heavier vehicles (e.g. SUVs and passenger vans) but would exclude "work trucks" (e.g. pickups and cargo vans).

Mandated Numeric Increase in CAFE Standards. Some analysts argue that price volatility in oil markets sends inconsistent signals to prospective new car purchasers, and that the only way to avoid these mixed signals would be to mandate higher CAFE standards. Some legislative proposals would require NHTSA to establish new CAFE standards set at a fixed mpg target in a given year. Various proposals would mandate increased standards for passenger cars, light trucks, or both.

Mandated Percentage Increase in CAFE Standards. While some bills would mandate an increase in the CAFE standards to specified levels, others would require NHTSA to set rules to increase fuel economy by a set percentage every year. In most cases, the bills mandate an annual CAFE increase of 4% from the previous year. The bills vary on whether the increase would cover passenger cars, light trucks, or both.

Regulatory Flexibility/Authority. As was mentioned above, NHTSA currently has limited authority to modify the specific mpg target or the general design of passenger car CAFE standards. Some legislative proposals would significantly broaden NHTSA's authority to amend the program, including allowing NHTSA to set higher passenger car standards than EPCA currently allows. Currently, any increase above 27.5 mpg or below 26.0 mpg requires the Secretary to issue an amendment to the standards. That amendment is to be in force unless either chamber of Congress disapproves.

Other proposals would allow NHTSA to extend the current single-year compliance period to multiyear periods. Such a proposal, for example, might allow NHTSA to require manufacturers to meet a set CAFE average for MY2011 through MY2013, instead of requiring that the CAFE average be achieved in each model year.

Expanded Considerations for Maximum Feasible Fuel Economy. Current law requires NHTSA to consider various factors in determining "maximum feasible average fuel economy." NHTSA must consider "technological feasibility, economic practicability, the effect of other motor vehicle standards of the government on fuel economy, and the need of the United States to conserve energy."[4] Some of the bills would add a further dimension, "cost-effectiveness," and stipulate weighing of several factors in assessing the cost-effectiveness of any proposed changes in the standards. Among these factors are value to consumers, economic security, national security, foreign policy, and the impact of oil use on various other national policy concerns.

Attribute-Based Standards. As noted above, NHTSA has established size-based CAFE standards for light trucks but does not have similar authority for passenger cars. Some proposals would allow NHTSA to establish multiple levels of passenger car CAFE standards for a given model year. The levels could be based on a variety of vehicle attributes, including size and/or weight. The Senate-passed H.R. 6 would *require* attribute-based standards.

Credit Trading. For each model year, automakers must meet separate CAFE targets for three new vehicle fleets: domestically produced passenger cars, imported passenger cars, and light trucks. In any year that a manufacturer exceeds the CAFE standard for one of these given fleets, that manufacturer may "bank" credits for use in meeting future year requirements. Conversely, in any year that the manufacturer comes up short, it may "borrow" credits from an anticipated surplus in future years. Under the current CAFE program, banked or borrowed credits may be used only for the fleet in which they originated. For example, if an automaker generates credits for its fleet of imported passenger cars, those credits may not be applied to its fleets of domestic cars or light trucks. Similarly, automakers may not trade credits with other automakers. However, some of the legislative proposals would allow a manufacturer to move credits between fleets and/or trade credits with another manufacturer.

Carbon Dioxide Standards. One bill, H.R. 2927, would require that new CAFE standards be expressed in grams per mile of carbon dioxide (CO_2), in addition

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[4] 49 U.S.C. 32902(f)

to miles per gallon. Under EPCA, states are pre-empted from establishing their own CAFE standards. But the Clean Air Act permits states to set their own clean air requirements. This has generated controversy, and some believe a requirement to report fuel economy as a function of CO_2 emissions is intended to have some bearing on the differing treatment of the states between CAFE and emissions standards. Some of these matters are currently being litigated.

Bush Administration Proposal

In his 2007 State of the Union address, President Bush outlined a goal of reducing gasoline[5] consumption by 20% from projected levels in 2017. Of that 20% reduction, the President proposed that 15% come from the increased use of renewable and alternative fuels, and that 5% come from increased vehicle fuel efficiency. It has been estimated that an annual 4% increase in CAFE standards would lead to a 5% reduction in projected gasoline consumption in 2017. The Bush Administration has not proposed legislation that would mandate an increase in CAFE standards.

On February 6, 2007, NHTSA submitted draft legislation to the House Energy and Commerce Committee on the Bush Administration's CAFE proposal.[6] The Administration's proposal would not require an increase in fuel economy standards but would grant NHTSA broader regulatory authority. The draft would allow NHTSA to establish attribute-based standards for passenger cars and would allow for CAFE credit trading.

Non-CAFE Policy Options

In addition to bills modifying the CAFE program, several other bills have been introduced that would likely increase vehicle fuel economy through other measures. For example, several bills requiring reductions in carbon dioxide and other greenhouse gas emissions have been introduced. Of those bills, two would require per-mile emissions reductions from passenger vehicles. While such emissions standards would not technically constitute a change in fuel economy standards, automakers and others contend that there is no way other than fuel economy increases to reduce automobile greenhouse gas emissions.[7]

Comparison of Legislation

Of the 14 CAFE bills compared, the eight Senate bills are compared in **Table 1** and the four House bills are compared in **Table 2**. The two bills to control greenhouse gas emissions from passenger cars are compared in **Table 3**.

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[5] Gasoline is only one part of oil consumption (albeit the largest), and thus a 20% reduction in gasoline consumption translates to a smaller reduction in overall petroleum consumption.

[6] As of February 22, 2007, no Member has sponsored and introduced the Administration's proposal.

[7] For more information on climate change bills, see CRS Report RL33846, *Climate Change: Greenhouse Gas Reduction Bills in the 110th Congress*, by Larry Parker and Brent D. Yacobucci.

Table 1. Comparison of Senate CAFE Bills in the 110th Congress

	S. 183 (Stevens)	S. 357 (Feinstein) [as introduced]	S. 767 / S. 768 (Obama)	S. 875 (Lugar)	S. 1118 (Dorgan)	H.R. 6 - Senate Version (Reid)
Bill Title	Improved Passenger Automobile Fuel Economy Act of 2007	Ten-in-Ten Fuel Economy Act	Fuel Economy Reform Act	Security and Fuel Efficiency (SAFE) Energy Act of 2007	Fuel Efficiency Energy Act of 2007	Ten-in-Ten Fuel Economy Act
Combined Passenger Car/Light Truck Standards	No provision.	Passenger car and light truck standards combined starting in MY2013. [Sec. 2]	Passenger car and light truck standards combined starting in MY2013. [Sec. 4]	No provision.	No provision.	Passenger car and light truck standards combined starting in MY2011. [Sec. 502]
Change in Definition of "Automobile" or "Light Truck"	No provision	Expands light truck definition to include vehicles between 8,500 and 10,000 pounds that are not "work trucks" — i.e. not heavier pickups and vans [Sec. 5]	Expands definition of "passenger automobile" to include all vehicles of up to 10,000 pounds designed to carry less than 10 passengers. [Sec. 3]	Establishes that 4-wheel drive is neither necessary nor sufficient to qualify vehicle as a light-duty truck. [Sec. 2]	Establishes that 4-wheel drive is neither necessary nor sufficient to qualify vehicle as a light-duty truck. [Sec. 2]	Includes light trucks between 8,500 and 10,000 pounds that are not "work trucks" — i.e. not heavier pickups and vans. [Sec. 504]
Mandated Numeric Increase in CAFE Standards	40 mpg for passenger cars only by MY2017. During interim, the Secretary of Transportation must set standards for each individual manufacturer at maximum feasible level. [Sec. 101]	35 mpg for combined fleets by MY2019. [Sec. 2] Interim MY2010 standards of 29.5 mpg for passenger cars and 25.5 mpg for light trucks. [Sec. 2]	27.5 mpg for combined fleets by MY2013. [Sec. 4]	No provision.	No provision.	35 mpg for combined automobile and light truck fleets by MY2020. [Sec. 502]

	S. 183 (Stevens)	S. 357 (Feinstein) [as introduced]	S. 767 / S. 768 (Obama)	S. 875 (Lugar)	S. 1118 (Dorgan)	H.R. 6 - Senate Version (Reid)
Mandated Percentage Increase in CAFE Standards	An annual, fixed percentage increase is specifically prohibited. [Sec. 101]	No provision.	For MY2010 through MY2012, requires a 4% annual increase in passenger car fuel economy. [Sec. 106(a)(3)] Starting in MY2013, establishes a mandatory annual fuel economy increase of 4% for passenger cars and light trucks combined. [Sec. 106(a)(3)]	For MY2013 through MY2030, requires a mandatory annual fuel economy increases of 4% for each class of vehicles. [Sec. 102]	Starting in MY2013, requires that CAFE standard for each class of vehicles be increased by 4% over the previous model year's standard. [Sec. 3]	Requires the Secretary of Transportation to establish procedures to ensure the maximum feasible increase in fuel efficiency for medium- and heavy-duty commercial vehicles. [Sec. 502]
Regulatory Flexibility/ Authority	NHTSA is authorized to establish multiyear compliance periods instead of the current single-year compliance period. [Sec. 101] Standards may be set individually for different classes of a manufacturer's fleet of passenger automobiles. [Sec. 101]	NHTSA is given broader authority to increase passenger car fuel economy without congressional approval. [Sec. 3] NHTSA may set different CAFE targets for different manufacturers, but in any given year each manufacturer must achieve a minimum average of 92% of the industry-wide CAFE target. [Sec. 2]	NHTSA may set lower standards for a model year if the targets are not technologically achievable, would lead to reductions in vehicle safety, or are not cost-effective. [Sec. 4] NHTSA may establish multiyear compliance periods (up to four years). [Sec. 5] NHTSA may set different CAFE targets for different manufacturers, but in	NHTSA may set lower standards for a model year if the targets are not technologically achievable, would lead to reductions in vehicle safety, or are not cost-effective. [Sec. 102]	NHTSA may set lower standards for a model year if the targets are not technologically achievable, would lead to reductions in vehicle safety, or are not cost-effective. [Sec. 3]	NHTSA is given broader authority to increase passenger car fuel economy without congressional approval. [Sec. 502] Secretary may set a standard that is lower than the "maximum feasible" level if there is "clear and convincing evidence" that this level can be demonstrated to not be "cost-effective." [Sec. 503]

	S. 183 (Stevens)	S. 357 (Feinstein) [as introduced]	S. 767 / S. 768 (Obama)	S. 875 (Lugar)	S. 1118 (Dorgan)	H.R. 6 - Senate Version (Reid)
			any given year each manufacturer must achieve a minimum average of 92% of the industry-wide target. [Sec. 4]			
Expanded Considerations for Maximum Feasible Fuel Economy	No provision.	No provision.	Cost-effectiveness is added to the list of factors for NHTSA to consider in determining maximum feasible fuel economy. Cost-effectiveness would be measured relative to several criteria, including value to consumers, economic security, national security, foreign policy, and the impact of oil use on various other national policy concerns. [Sec. 4]	Substantially similar to S. 767/768.	Substantially similar to S. 767/768.	Substantially similar to S. 767/768.
Attribute-Based Standards	NHTSA is given authority to establish attribute-based standards. [Sec. 101]	No provision.	Starting in MY2013, NHTSA is given authority to establish attribute-based standards. [Sec. 4]	No provision.	No provision.	NHTSA is required to establish attribute-based standards. [Sec. 502]

	S. 183 (Stevens)	S. 357 (Feinstein) [as introduced]	S. 767 / S. 768 (Obama)	S. 875 (Lugar)	S. 1118 (Dorgan)	H.R. 6 - Senate Version (Reid)
Credit Trading	Greenhouse gas credits registered with a national registry may be purchased by manufacturers and applied to fleet fuel economy results after MY2010. However, credits purchased through the registry cannot offset more than 10% of the fuel economy standard. [Sec. 102, 201]	Manufacturers may trade credits between fleets and with other manufacturers. [Sec. 9]	Before MY2013, manufacturers are allowed to trade credits with other manufacturers for the same fleet (e.g. domestic passenger cars). Starting in MY2013, manufacturers may trade credits with other manufacturers across all fleets. However, in the absence of such credits, each fleet must achieve at least 92% of the overall CAFE target. [Sec. 5]	No provision.	No provision.	Substantially similar to S. 357. [Sec. 506]
Carbon Dioxide Standards	No provision.	No provision.	No provision.	No provision.	No provision.	No provision.
Other Key CAFE-Related Provisions	The Secretary of Transportation may not set standards that impose "marginal costs that exceed marginal benefits." [Sec. 101] A "national registry system" for voluntary greenhouse gas trading would be established. The Secretary of	Starting in MY2014, automakers must install devices to provide real-time and cumulative fuel economy data that will enable drivers to operate their vehicles to use fuel more efficiently. [Sec. 7] In order to reduce the likelihood of death or	No provision.	Existing incentives within the CAFE program for the production of dual-fuel and flexible fuel vehicles are eliminated. [Sec. 102(b)] Requires NHTSA to set fuel economy standards for medium-duty vehicles (vehicles	Broadens authority of NHTSA to establish standards for a broader population of vehicles, including vehicles with gross vehicle weight of 10,000-26,000 pounds. [Sec. 2] Beginning in MY2012, existing incentives within the	NHTSA must develop a "motor vehicle safety standard" to reduce death and injury by improving compatibility of large and small vehicles in frontal- and side-impacts. [Sec. 505] The National Academy of Sciences (NAS) will conduct a

	S. 183 (Stevens)	S. 357 (Feinstein) [as introduced]	S. 767 / S. 768 (Obama)	S. 875 (Lugar)	S. 1118 (Dorgan)	H.R. 6 - Senate Version (Reid)
	Transportation, working with the Department of Commerce, will determine the equivalency between fuel economy improvements and greenhouse gas reductions. [Sec. 201]	injury from accidents, NHTSA is required to develop vehicle ratings and standards to reduce damage by improving compatibility of large and small vehicles in frontal- and side-impacts. [Sec. 6]		with a gross weight between 10,000 and 26,000 pounds). [Sec. 102(a)]	CAFE program for the production of dual-fuel and flexible fuel vehicles are eliminated. [Sec.3]	study of current and potential technologies that might contribute to meeting CAFE standards. [Sec. 509] Requires establishment of a tire fuel efficiency consumer information program.[Sec. 513]
Other Key Non-CAFE Provisions	No provision.	Requires the Environmental Protection Agency to establish a program to label new vehicles' expected lifetime greenhouse gas emissions. [Sec. 11]	S. 768 also modifies existing tax credits for hybrid vehicles and establishes a manufacturer tax credit for advanced technology vehicles.	This is a broad bill that also: modifies the existing hybrid vehicle purchase tax credit and establishes a tax credit for fuel-efficient vehicles; establishes a manufacturer's tax credit for advanced technology vehicles; modifies the existing mandate for renewable fuels; promotes renewable fuel infrastructure; mandates the production of alternative fuel vehicles; limits oil exploration in certain areas.	From MY2012-2022, manufacturers must produce not less than 10% more dual-fueled vehicles than in the preceding model year. [Sec. 3]	Among a number of additional provisions, would require establishment of an Advanced Battery Initiative to award grants and identify technological needs; promulgation of standards for biodiesel fuel; and establishment of a credit-trading program; and sets requirements for manufacture of flexible-fuel vehicles and raising consumer awareness about availability of these vehicles.

Table 2. Comparison of House CAFE Bills in the 110th Congress

	H.R. 656 (Reichert)	H.R. 1133 (Berkley)	H.R. 1500 (DeFazio)	H.R. 1506 (Markey)	H.R. 2927 (Hill)
Bill Title or Purpose	To require higher standards of automobile fuel efficiency with the goal of reducing the amount of oil used for fuel by automobiles in the United States by 10 percent beginning in 2017, and for other purposes.	Freedom through Renewable Energy Expansion (FREE) Act	Gasoline Price Stabilization Act of 2007	Fuel Economy Reform Act	To increase the corporate average fuel economy standards for auto-mobiles, to promote the domestic development and production of advanced technology vehicles, and for other purposes.
Combined Passenger Car/Light Truck Standards	No provision.	No provision.	No provision.	Passenger car and light truck standards combined starting in MY2011. [Sec. 4]	No provision.
Change in Definition of "Automobile" or "Light Truck"	No provision.	No provision.	No provision.	Expands definition of "automobile" to include all vehicles of up to 10,000 pounds. [Sec. 3]	No provision.
Mandated Numeric Increase in CAFE Standards	33 mpg by MY2017; interim standards would be set by Secretary of Transportation beginning in MY2010 to reach the mandated target. [Sec. 1]	33 mpg by MY2016; interim standards would be set by Secretary of Transportation beginning in MY2010 to reach the mandated target. [Sec. 8]	37 mpg by MY2018 and 40 mpg by MY2023; interim standards would be set by Secretary of Transportation beginning in MY2010 to reach the mandated target. [Sec. 9]	Mandates "a projected level of average fuel economy" of at least 27.5 mpg for vehicles up to 10,000 pounds beginning in MY2012, and 35 mpg in MY2018.	Projected fuel economy for passenger and non-passenger automobiles would be not less than 32 mpg or greater than 35 mpg in MY2022. [Sec. 1]

	H.R. 656 (Reichert)	H.R. 1133 (Berkley)	H.R. 1500 (DeFazio)	H.R. 1506 (Markey)	H.R. 2927 (Hill)
Mandated Percentage Increase in CAFE Standards	No provision.	No provision.	No provision.	Requires that current 27.5 mpg standard for passenger automobiles be increased 4% annually beginning in MY2009. [Sec. 4]	No provision.
Regulatory Flexibility/ Authority	No provision.	No provision.	No provision.	National Highway Traffic Safety Administration (NHTSA) may set lower standards for a manufacturer for a model year if the targets are not technologically achievable, or are not cost-effective; and if a lower standard during MY2012-MY2017 would not result in a failure to attain 35 mpg in MY2018. [Sec. 4]	No comparable provision.
Expanded Considerations for Maximum Feasible Fuel Economy	No provision.	No provision.	No provision.	Cost-effectiveness is added to the list of factors for NHTSA to consider in determining maximum feasible fuel economy. Cost-effectiveness would be measured relative to several criteria, including value to consumers, economic security, national security, foreign policy, and the impact of oil use on various other national policy concerns. [Sec. 4(a)(3)]	No provision.

	H.R. 656 (Reichert)	H.R. 1133 (Berkley)	H.R. 1500 (DeFazio)	H.R. 1506 (Markey)	H.R. 2927 (Hill)
Attribute-Based Standards	Authorizes Secretary to establish size-based standards for different classes of vehicles. [Sec. 1]	No provision.	Authorizes Secretary to establish size-based standards for different classes of vehicles. [Sec. 9]	Extends flexibility to Secretary to establish attribute-based standards (including size) for different classes of vehicles, or in the form of a mathematical function. [Sec. 4]	Extends flexibility to Secretary to establish attribute-based standards (including size) for different classes of vehicles, or in the form of a mathematical function. [Sec. 1]
Changes in Test Procedures	No provision.	No provision.	No provision.	Requires joint report from the Departments of Transportation and Energy, and the Environmental Protection Agency that, in part, assesses the accuracy of CAFE test procedures used to measure fuel economy, and to "identify any additional factors or methods that" would contribute to the tests' more accurately reflecting in-use fuel economy. [Sec. 4]	No provision; however, would require that annual standards also be expressed in the equivalent of average grams per mile of carbon dioxide emissions.
Credit Trading	Authorizes Secretary to establish a credit trading program. [Sec. 2]	No provision.	No provision.	No provision.	Authorizes Secretary to establish a credit trading program. [Sec. 1]

	H.R. 656 (Reichert)	H.R. 1133 (Berkley)	H.R. 1500 (DeFazio)	H.R. 1506 (Markey)	H.R. 2927 (Hill)
Carbon Dioxide Standards	No provision.	No provision.	No provision.	No provision.	Requires Secretary to establish fuel economy standards both in terms of miles per gallon and grams per mile of carbon dioxide. [Sec. 1]
Other Key CAFE-Related Provisions	Preamble states that the bill's intention is to de facto reduce the amount of oil used in automobiles by 10% beginning in 2017. Advises Secretary that interim standards not only reach mandated 33 mpg by MY2016, but also must maximize retention of jobs in the sector, and not degrade safety of automobiles. [Sec. 1]	Advises Secretary that interim standards not only reach mandated 33 mpg by MY2016, but maximize retention of jobs in the sector, and not degrade safety of automobiles. [Sec. 8]	Advises Secretary that interim standards not only reach mandated goals, but maximize retention of jobs in the sector, and not degrade safety of automobiles. [Sec. 9] Requires Executive Branch agencies to improve the average fuel economy of new vehicles in each vehicle class by 3 mph by MY2011, and 6 mpg by MY2014 over a baseline calculated for all vehicles in the MY2008 fleet for each vehicle class. [Sec. 10]	Act is not intended to "limit, constrain, supersede, or expand" authorities for prescribing motor vehicle safety standards. [Sec. 5]	Establishes fund for domestic commercialization and production of advanced technology vehicles and components. Fund will be financed by civil penalties collected for non-compliance with fuel economy standards. [Sec. 1] Requires establishment of a tire fuel efficiency consumer information program. [Sec. 2] Requires establishment of a fuel conservation education program. [Sec.3] Extends credit for production of alternative-fueled automobiles. [Sec. 4]
Other Key Non-	No provision.	This is a broad bill that also	This is a broad bill that also	No provision.	No provision.

	H.R. 656 (Reichert)	H.R. 1133 (Berkley)	H.R. 1500 (DeFazio)	H.R. 1506 (Markey)	H.R. 2927 (Hill)
CAFE Provisions		includes provisions relating to nuclear energy, offshore leases, repeal of certain tax subsidies and extension of certain tax credits, renewable portfolio standard, and other matters.	includes provisions on several matters such as petroleum industry concentration, the Strategic Petroleum Reserve, minimum inventory levels.		

Table 3. Comparison of Bills To Establish Automobile Greenhouse Gas Standards in the 110th Congress

	S. 309 (Sanders)	S. 485 (Kerry)
Bill Title	Global Warming Pollution Reduction Act	Global Warming Reduction Act of 2007
Greenhouse Gas (GHG) Emission Standard	The Environmental Protection Agency (EPA) Administrator is required to establish regulations starting in MY2016 requiring the average fleet greenhouse gas emissions be less than 205 grams per mile for passenger cars and 332 grams per mile for light trucks. [Sec. 707] (This greenhouse gas standard is roughly equivalent to an MY2016 CAFE standard of 42 mpg for passenger cars and 26 mpg for light trucks.)	The EPA Administrator is required to establish regulations for reducing greenhouse gas emissions from passenger vehicles at least as stringent as those adopted by the California Air Resources board on September 23-24, 2004. Those regulations cap greenhouse gas emissions at 205 grams per mile for passenger cars and 332 grams per mile for light trucks by 2016. [Sec. 704] (This is roughly equivalent to an MY2016 CAFE standard of 42 mpg for passenger cars and 26 mpg for light trucks.)
Other Key CAFE-Related Provisions	Requires greenhouse gas emissions standards for medium- and heavy-duty trucks.	No provision.
Other Key Non-CAFE Provisions	Caps greenhouse gas emissions on an economy-wide basis beginning in 2010. Emissions are capped at 20% of their 1990 levels in the year 2050. The EPA has the discretion to employ a market-based allowance trading program or any combination of cost-effective emission reduction strategies. The bill also includes mandatory greenhouse gas emission standards for new powerplants, along with a new energy efficiency performance standard. The bill would establish a renewable portfolio	Caps greenhouse gas emissions on an economy-wide basis beginning in 2010. Emissions are capped at 38% of their 1990 levels in 2050. The allowance trading system includes an allocation scheme that requires an unspecified percentage of allowances to be auctioned. The bill also includes a new energy efficiency performance standard. The bill would establish a renewable portfolio standard (RPS), increase biofuel mandates under the Renewable Fuels Standard, and mandate new

	S. 309 (Sanders)	S. 485 (Kerry)
	standard (RPS) and a new low-carbon generation requirement and trading program.	infrastructure for biofuels. Finally, the bill expands and extends existing tax incentives for alternative fuels and advanced technology vehicles, and establishes a manufacturer tax credit for advanced technology vehicle investment.