



REFORMING DUAL FUELED VEHICLE CAFE CREDITS

Current law¹ allows automakers to receive credits toward meeting CAFE requirements for the manufacture and sale of “dual fueled” vehicles, which are vehicles capable of running on both petroleum- and non-petroleum-based fuel. Credits may reduce a manufacturer’s car or truck CAFE requirements by up to 1.2 miles per gallon. The credit program expires after the 2004 model year, but may be extended administratively by DOT for four additional years at a reduced level of 0.9 mpg. DOT has proposed, but not finalized, such an extension.²

Large numbers of dual fueled vehicles (on the order of a half-million, mostly light trucks) have been produced annually in recent years. For the most part, these vehicles have been manufactured to accept E85, an 85% ethanol blend. The capability to run on E85 has been installed in the entire production run of certain vehicle/powertrain combinations. This installation involves substituting standard fuel lines and tank with corrosion-resistant parts; modifying fuel injectors, computer system, anti-siphon devices, catalytic converter and dashboard gauges; and adding a fuel sensor that detects the ethanol/gas ratio.³ The added cost of the vehicle, about \$300, is not passed on to the purchaser.⁴

While capable of running on E85, these vehicles are being operated almost exclusively (99%) on gasoline. The number of refueling sites offering E85 (approximately 180 sites nationwide; 24 states with *no* sites⁵) remains far too low to support widespread use of alternative fuels in dual fueled vehicles. Yet the statutory formula for determining the CAFE credit assumes that 50% of the fuel consumed in such vehicles is alternative fuel.

Despite the negligible use of E85, manufacturers have applied the credits these vehicles generate toward meeting fuel economy requirements. The result is lower fuel economy, and higher fuel consumption, for the average new vehicle. Both the National Academy of Sciences and USDOT have found that *the current dual fueled vehicle credit increases oil consumption* without contributing significantly to the use of alternative fuels.⁶

Oil consumption consequences of the dual fueled vehicle credit extension

Each year that the credit is in place at the 1.2 mile per gallon level, the entire new car and truck

¹ PL 100-494, the Alternative Motor Fuels Act of 1988.

² Federal Register, Vol.67, No.47, March 11, 2002, p.10873.

³ Ethanol Vehicle Coalition, 2003 E85 Purchasing Guide
(www.e85fuel.com/images/e85_vehicle_purchasing_guide.pdf)

⁴ Ford representative cited in the Minneapolis Star Tribune, July 7, 2000.

⁵ Alternative Fuels Data Center, Alternative Fuel Station Counts listed by State and Fuel Type
(http://www.afdc.doe.gov/refuel/state_tot.shtml), visited 11/22/03.

⁶ National Research Council, *Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards*, 2002; USDOT et al, *Report to Congress – Effects of Alternative Motor Fuels Act CAFE Incentives Policy*, March 2002.

fleet for that year potentially has an average fuel economy 1.2 miles per gallon, or about 5%, lower than it would otherwise have. Those less-efficient vehicles would consume an extra 15 million barrels of fuel in their first year on the road, or 41,000 barrels of oil per day.⁷

In each successive year, the extra oil consumed by the less-efficient vehicles sold in prior years plus the incremental consumption of the vehicles new in that year equals total extra consumption for that year attributable to the dual fueled vehicle credit. So the credit causes almost twice as much excess fuel consumption in the second year as in the first, for example. If the credit were extended beyond its current end date of 2004 to the years 2005-2008, as section 773 of the conference committee's energy bill provides, that extension could cost as much as 158,000 barrels of oil daily by 2008. The cumulative extra fuel consumption for the period 2005-2008 would in that case be 146 million barrels of oil.⁸

The energy bill also allows for an administrative extension of the credit at 0.9 miles per gallon in 2009 through 2012. Should this extension be granted, additional consumption due the credit would grow to 250,000 barrels of oil daily in 2012. Cumulative extra consumption for 2005-2012 would be 462 million barrels.

The figures above reflect maximal usage of the credit by manufacturers and therefore give an upper bound for additional fuel use resulting from the dual fueled vehicle credit. Not all manufacturers will use the credit to the full extent possible. Honda, for example, meets CAFE requirements with several miles per gallon to spare and therefore has no need of the credit in the immediate future. U.S. manufacturers made limited use of the credit in the early years but have claimed greater credit recently. Credits for U.S. manufacturers and total dual fueled vehicle sales through 2002 are shown below. The National Ethanol Vehicle Coalition, which includes representatives of General Motors, Ford, and Daimler-Chrysler, expects that dual fueled vehicle production in model year 2003 will exceed 1.5 million vehicles.⁹

⁷ This estimate incorporates a "rebound effect": if the fuel economy of vehicles declines, their owners may drive them a little less than they would have otherwise. We assume a rebound of 10%.

⁸ This assumes auto sales growth of 1.2% per year, per industry projections (see, e.g. Ward's Motor Vehicle Facts and Figures 2003), and no growth in annual miles traveled per vehicle.

⁹ National Ethanol Vehicle Coalition "Dear Friend" letter of June 2, 2003.

	1998	1999	2000	2001	Estimated 2002 ¹⁰
Dual Fuel CAFE Credits for US Manufacturers					
DCX trucks	0.61 mpg	0.94 mpg	0.96 mpg	0.82 mpg	0.99 mpg
GM trucks				0.41 mpg	1.20 mpg
Ford trucks		0.57 mpg	0.68 mpg	0.16 mpg	0.38 mpg
Ford cars			0.87 mpg	0.60 mpg	0.53 mpg
Total Dual Fueled Vehicle Sales					
All Manufacturers	147,200	424,900	671,000	398,000	748,300

Credit usage of less than 0.1 mpg is not shown here. Source for years 1998-2001: NHTSA-2001-10774-31, Preliminary Economy Assessment, Alternative Fueled Vehicles, Extension of CAFE Option, Part 538 pp.14-15 (data is mid-model year estimate), and Report to Congress (for pre-2001 production numbers).

Given the rapid growth in production, a conservative projection of the effect of the credit going forward can be made by assuming that the Big 3 U.S. manufacturers will use the truck credit in the coming years at the rate of 0.84 miles per gallon --their average estimated usage in 2002 – and that they will not use the credit for their car fleets. Assume also that no credits are taken by foreign manufacturers for either cars or trucks. Averaged across the entire new car and truck fleet, this level of credit usage amounts to a 0.45 mpg reduction in fuel economy, which would result in excess oil consumption of 57,000 barrels per day by 2008. Over the period 2005-2008, extra consumption would total 53 million barrels. Adding the 4-year administrative extension into this low-end estimate yields extra consumption of 106,000 barrels per day in 2012 and 183 million barrels cumulatively in 2005-2012.

Credits will undercut the Administration's recent light truck CAFE increase.

On April 2, 2003, DOT adopted an increase in the light truck CAFE standard of 1.5 miles per gallon, to be phased in over 2005-2007. DOT found that this modest increase was feasible for manufacturers without their taking any dual fuel CAFE credits.¹² In the absence of the dual fueled vehicle credit, oil savings from this increase would be about 60 million barrels in 2005-2008. Thus the Administration's new rule could save an amount of oil in this period that slightly exceeds the lower bound estimate above for the extra fuel consumption resulting from a four-year extension of the dual fueled credit. Oil savings from the CAFÉ increase would be only a fraction of the extra fuel consumption that would follow from maximal use of the dual fueled credit, however.

¹⁰ 2002 figures are ACEEE estimates based on sales and fuel economy projections in manufacturers' 2002 Mid-Model Year reports to NHTSA.

¹¹ National Ethanol Vehicle Coalition "Dear Friend" letter of June 2, 2003.

¹² 67 Federal Register 77017, Dec. 16, 2002.

Indeed, it is clear that the increase in oil consumption that follows from lowering car and truck fuel economy by 1.2 mpg, as the conference report's dual fueled vehicle provision allows, more than offsets the oil savings attributable to increasing fuel economy standards by 1.5 mpg for light trucks only. As a practical matter, manufacturers will be able to go far toward meeting the new standard simply by increasing their use of the dual fueled vehicle credit for trucks.

Reforming the credit program

Various options exist to overcome the problem created by the current dual fueled vehicle credit. Eliminating the credit would recover the gasoline that otherwise would be lost under the existing program. Another option is to retain the credit, but tie credits to alternative fuel use. While more complicated to implement, this approach creates an incentive to increase the use of E85, which was the original intent of the dual fueled credit.

We propose the following for MY 2005-2012:

- a. require all new dual fueled vehicles to be clearly identified at time of sale with both a label and a permanent marking (e.g., inside the gas cap door);
- b. require that any fuel loaded into a new dual fueled vehicle by a manufacturer be exclusively alternative fuel;
- c. set the available fuel economy credit at 0.3 mpg, subject to adjustment; and
- d. allow the Secretary to raise the cap in increments of 0.1 mpg, based upon the total volume of E85 sales in the preceding year, as follows –

<u>total volume of E85 fuel consumption</u>	<u>allowable credit cap</u>
5 % x	.4 mpg
10 % x	.5 mpg
15 % x	.6 mpg
20 % x	.7 mpg
25% x	.8 mpg
30% x	.9 mpg
35% x	1.0 mpg
40% x	1.1 mpg
50% x	1.2 mpg

where “x” equals the estimated amount of fuel used in the preceding calendar year by all dual fueled vehicles manufactured during the three previous model years, with each such vehicle assumed to be driven 15,000 miles per year.

Anticipated results would include:

1. Manufacturers would retain sufficient incentive to produce dual fueled vehicles, albeit initially at somewhat lower levels than under current law.

2. Customer choice would be maintained -- or even increased -- by encouraging greater consumer awareness of the dual fuel capability of the new vehicles they purchase.
3. Manufacturers would have a greater stake in encouraging the development of the alternative fuel infrastructure and in co-marketing alternative fuel along with dual fueled vehicles.
4. The average fuel economy of the new vehicle fleet would increase beginning with Model Year 2005. Oil savings relative to the energy bill provision for dual fueled credits could be as high as 134,000 barrels per day by 2008 and 200,000 barrels per day by the end of the program in 2012. An assumption that manufacturers would take limited advantage of the credits in the bill leads to lower savings of the above proposal: 35,000 barrels per day in 2008 and 64,000 in 2012. In any case, the proposed credit scheme serves to limit the extra oil consumption resulting from the dual fueled vehicle credit to low levels.

For further information

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