

## **Alliance Continues to Press for Greater Fuel Economy**

(Continued from Jan.'06 e-EFFICIENCY News)

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**RE: Docket No. 2005-22223; RIN 2127-AJ61**

### **Average Fuel Economy Standards for Light Trucks Model Years 2008-2011**

The proposed rule setting light truck fuel economy standards for 2008-2011 falls far short of what can and should be done to reduce fuel consumption of light trucks in those model years. The 10 billion gallons of fuel that NHTSA claims will be saved through the new standards over the three-decade life of model year 2008-2011 vehicles amount to less than one month's supply of gasoline for U.S. light-duty vehicles. These savings are also insufficient to offset the expected growth in gasoline usage for even the four-year period covered by the rule.

This is a critical time to chart a new course for U.S. policy regarding oil consumption, technology leadership, and climate change, and fuel economy standards over the next decade will have an enormous impact on our ability to thrive in that period and beyond. Prior to issuing a final rule, NHTSA should reconsider its proposal in light of the comments made here and by other parties, and substantially raise the standards above the levels proposed and set them at the maximum feasible level.

The Unreformed and the Reformed CAFE proposals suffer from some of the same problems, keeping either from realizing substantial oil savings. We recommend that NHTSA make additional reforms to increase the effectiveness of CAFE standards:

- Include vehicles up to 10,000 pounds,
- Carry standards for a decade into the future, and
- Give adequate weight to the need for the nation to save energy.

Particularly disappointing is NHTSA's failure to take advantage of its proposed changes in the structure of CAFE standards to increase fuel savings. We applaud NHTSA's decision to propose vehicle footprint, rather than weight, as the basis for Reformed CAFE. A footprint-based scheme could facilitate progress toward a more effective CAFE program, assuming certain other conditions are satisfied. Unfortunately, those conditions are not satisfied in the current proposal, and the proposal consequently falls far short of the maximum feasible fuel economy standard for light trucks. A properly designed Reformed CAFE standard would:

- Be set at the maximum technically feasible level that has positive net total economic benefits, rather than a level at which estimated marginal benefits of adding fuel economy technologies equal estimated marginal costs, and
- Include a backstop to ensure that overall oil savings are at least as great as projected and as they would have been under the Unreformed system.

Even if marginal cost-benefit analysis is used to set the standard levels for Reformed CAFE, certain aspects of the implementation of that methodology are problematic, particularly the values chosen for several key inputs to the analysis. We recommend that NHTSA correct its assumptions on:

- future gasoline prices,
- baseline product plans,
- the rebound effect, and
- the externality cost of oil imports and supply disruptions.

More appropriate values would raise the targets for the standards and produce substantially greater oil savings. We also recommend that NHTSA extend its analysis of uncertainties.

As explained in comments for prior rulemakings, we believe that the means used to arrive at the Unreformed standards also are flawed, particularly the focus on the least capable manufacturer. Unfortunately, the levels that NHTSA proposes for Reformed CAFE depend directly on the Unreformed levels during the interim period, and allowing each

manufacturer to choose the lower of the two levels each year ensures the interim oil savings will be lower than under either system separately. Furthermore, the savings beyond the interim period are constrained by flaws in the interim levels due to technological ramp-up periods. We conclude that:

- Changing how an overall fleet standard is calculated does not require an interim period (as long as technology phase-in constraints are considered).
- Reformed CAFE levels should not be constrained by Unreformed levels. If NHTSA insists on doing so, the comparable Reformed levels should impose an average cost per vehicle that is the same as the Unreformed CAFE cost per vehicle for the least capable manufacturer.
- In 2008-2011, manufacturers should not be allowed to choose the lesser of two standards -- such a choice cannot possibly yield the maximum feasible standard.

As fixing the problems with the cost-benefit analysis is the narrowest change we propose and alone would greatly improve the proposal, we return to this point to begin these comments.

## **I. Application of NHTSA's approach to Reformed CAFÉ**

Putting aside for the moment reservations regarding NHTSA's proposed structure for Reformed CAFÉ and the general methodology for setting the standard, a number of questions arise regarding the execution of NHTSA's approach. To begin with, NHTSA uses projected fuel prices of \$1.51 to \$1.58 over the 30-year analysis period. These numbers are outdated, as NHTSA acknowledges, and it is essential that they be changed to reflect the current understanding of petroleum product markets in the coming years. A recent presentation by a Resources for the Future economist asserted that a 50-cent-per-gallon increase in gasoline prices should raise the "benefit-maximizing" fuel economy level, and therefore the proposed standard, by 2-4 miles per gallon.<sup>14</sup> We expect that EIA's gasoline price projections for AEO 2006 will be in the vicinity of 40 cents higher, on average over the analysis period, than the AEO 2005 price NHTSA used for its analysis. We would therefore expect NHTSA to propose a much higher fuel economy standard in the final rule than it did in the NPRM.

NHTSA has requested that manufacturers submit updated plans, noting correctly that product plans will have shifted since they were reported in December 2003. To the degree that there has been a shift away from large vehicles, manufacturers would be less inclined to switch to Reformed CAFÉ during the interim period unless Unreformed standards are raised accordingly. Furthermore, if there were a trend toward the more efficient vehicles within a size class, such as a shift from four- to two-wheel-drive vehicles, this should raise NHTSA's fuel economy targets for each class. In addition, higher fuel prices should lead manufacturers to implement more fuel economy technologies on their own, moving them up the cost curve. This may not directly affect the "maximum feasible" fuel economy as calculated by NHTSA; but at a minimum it should shorten the time required to achieve a given fuel economy level, since the efficiency technologies will penetrate the market faster than was anticipated by the analysis. Hence changes in manufacturer product plans will call for adjustments to the proposed CAFÉ levels once the new plans have been submitted.

The value chosen for the rebound effect also has a substantial effect on the outcome of the analysis, and NHTSA's value is too high. Indeed, NHTSA remarks that "the 20 percent value chosen for the main analysis is likely conservative and the probability that the correct value is less than 20 percent exceeds the probability that it is greater than 20 percent" (PRIA at X-11). The recent paper of Small and Van Dender appearing in the docket is a highly credible addition to the literature on rebound. During his October presentation at Resources for the Future, Van Dender gave an updated estimate, based on the methodology in the paper, of approximately 10% for short-term rebound. This would cut roughly in half the added costs associated with rebound relative to the 20% rebound value used by NHTSA. Based on Table VIII-10 of the PRIA, it appears that this would increase the lifetime monetized societal benefits (undiscounted) of Reformed CAFÉ for MY2011 vehicles by about \$1.3 billion, or 30%. This strongly suggests that use of the lower rebound number would change very substantially the fuel economy level found by NHTSA to be optimal. NHTSA states that it "will continue to assess" the rebound assumption

of 20% “in light of new evidence” (NPRM at 51429); a thorough reassessment should be reflected in the final rule.

These and other crucial parameters whose values are uncertain, including the oil-related externalities discussed elsewhere in these comments, led NHTSA to conduct an uncertainty analysis. The analysis uses Monte Carlo methods and provides probability distributions for fuel savings, technology costs, social benefits, and net benefits. Unfortunately, the crucial application of this analysis is missing, however: there is no indication of the effects of the variations in these parameters on the “optimal” values for the standards, i.e. the fuel economy values that maximize net benefits. NHTSA should conduct this analysis and disseminate the results before issuing a final rule.

## **II. The nation’s need to conserve energy**

NHTSA is required by law to balance the technological and economic feasibility of raising CAFE standards with the nation’s need to conserve energy. This need is pressing; the costs of excessive reliance on oil and of dependence on foreign oil in particular have been quite evident in recent months. Our vulnerability to supply disruptions was exposed clearly in the aftermath of Hurricanes Katrina and Rita this fall. Yet NHTSA has not fulfilled this obligation. Presenting no evidence for the statement, NHTSA states: “We have concluded that the proposed increases in the light truck CAFE standards would contribute appropriately to energy conservation and the comprehensive energy program set forth in the NEP.”

NHTSA apparently believes that folding certain costs of oil dependence into its cost-benefit analysis for Reformed CAFÉ is sufficient, but that analysis is not adequately responsive to the need for the nation to conserve energy. NHTSA’s calculation of the benefits of reducing oil consumption relies in part upon an estimate of the likelihood of a shock provoked by, e.g., a disruption in supply, as well as an estimate of the elasticity of supply. While these probability estimates may play an appropriate role in the cost-benefit analysis, they do not capture the value of policies that provide insurance against the exertion of outside influences on the U.S. The desirability of having such insurance is evidenced by frequent statements from the Administration and Congress regarding the importance of oil independence.

In addition, NHTSA’s cost-benefit analysis captures important oil-related externalities inadequately, or not at all. The PRIA uses outdated estimates of the probability of supply disruptions and limits the discussion to the costs of imports, effectively ignoring disruptions in the refining and delivery chain. A variety of circumstances, including the rapid rise in global oil consumption, tensions in the Middle East, and recent meteorological events, point to the need to remedy both of those limitations.

As discussed below, to be responsive to the requirement of the CAFE statute with respect to energy savings, it is necessary to determine by some independent means what level of energy consumption is acceptable and then to determine whether this range overlaps with the fuel economy ranges dictated by the other considerations specified. The upper bound of acceptable oil consumption levels may not be well-defined; but given a goal of energy independence, it should be assumed that we will need to reduce oil consumption below today’s levels. The proposed standards should therefore be consistent with a trajectory of stopping and reversing the growth in oil consumption by vehicles.

## **III. The need for a backstop for Reformed CAFÉ**

NHTSA takes pains to refute ANPRM commenters who called for an oil savings “backstop” for the CAFÉ program if the program is changed to an attribute-based system, as NHTSA proposes in this rule. NHTSA believes that this comment stems from a misunderstanding of the need to avoid interference with the vehicle market, which would allegedly have adverse economic consequences. This assessment suggests, however, that NHTSA has ignored the severe adverse consequences that oil dependence has already had on the U.S. economy.

NHTSA asserts that the proposed Unreformed CAFÉ standards meet the statutory requirement of feasibility. If Reformed CAFE does not admit a backstop, i.e., cannot be guaranteed to result in an average fuel economy at least as high as Unreformed CAFÉ would produce, then Reformed CAFE does not meet the requirement that standards be set at maximum feasible levels.

NHTSA interprets the concept of a backstop very narrowly, assuming that it must take the form of holding each manufacturer to an overall truck standard as well as the class-based standard. NHTSA could instead compute the average fuel economy of the entire production of light trucks each year in the period 2008-2011 and determine whether it meets the fuel savings projected for the rule; failure to do so would result in an automatic increase in the standards for all vehicle classes for the years following.

NHTSA's argument against a backstop amounts to saying that if consumers all want Hummers, CAFE standards must accommodate that wish. NHTSA mistakes complete deference to vagaries of the market for proper regard for consumer choice. As a consequence of this deference, NHTSA fails to give appropriate weight to the need of the U.S. to conserve energy and declines to ensure that the Reformed CAFE system will give oil savings even as large as the Unreformed system would provide. NHTSA should correct this omission in the final rule.

If NHTSA does not impose a backstop, it must at a minimum investigate quantitatively the range of outcomes possible through shifts in the vehicle market. NHTSA has made general observations about why it considers major shifts unlikely, but they are not persuasive. The current CAFE standards are generally acknowledged to affect the size-distribution of vehicles sold by some manufacturers; indeed this has been a concern of advocates of a change in CAFE structure. To the extent that this is the case, a shift toward larger vehicle should be expected, though high gasoline prices may prevent this from occurring in the near term.

#### **IV. Maximum feasible fuel economy standard under Reformed CAFE**

NHTSA is obligated to set fuel economy standards at the "maximum feasible" level considering "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." (49 USC Sec. 32902) From 2011 on, the standards are set to maximize "net benefits to society". Although this is undoubtedly a desirable outcome in general terms, it is not consistent with NHTSA's charge under the fuel economy statute. Moreover, it is in fact not possible for NHTSA to achieve such an optimization.

The statute requires NHTSA to set the highest possible fuel economy level that is consistent with the considerations cited above. That is, there is a range of fuel economy values that are technologically feasible, a range of values that are economically practicable, and so forth; and, if there are fuel economies that are in the intersection of all these ranges, the required CAFE standard is the highest of them. This approach would not generally yield the same value as the maximum benefit approach; indeed in this case it clearly does not. The NHTSA approach is therefore flawed.

The proper approach, given the above observations, would require a determination of the upper bound of economically practicable standards. This has been handled in past rulemakings through the inappropriate device of the "least capable manufacturer". Once that manufacturer was identified, however, NHTSA applied a methodology that appears closer to what the statute requires than the proposed optimization approach. Namely, NHTSA determined the highest technologically feasible level for that manufacturer and then verified that the benefits of the corresponding bundle of technologies exceeded costs. This is in fact how NHTSA sets levels for Unreformed CAFE in the years 2008-2010.

In the NPRM, NHTSA solicits comments on the proposed approach to setting levels on the basis of benefits maximization. Our recommendation is that the general approach used for Unreformed CAFE, in which the new standard is set at the maximum level that is technically feasible and that yields net total benefits, be applied in setting level for Reformed CAFE as well. It is difficult to argue that a standard that

yields a net benefit is not economically practicable. Hence, this approach represents a more plausible interpretation of the charge to set standards at the “maximum feasible level” than does NHTSA’s proposed approach of maximizing net benefits.

The NHTSA’s approach might still seem preferable to this more literal interpretation of NHTSA’s legal obligation, as described above, were it not for the fact that true maximization of benefits cannot be achieved through the methods NHTSA has proposed. Certain very important potential benefits of reducing oil consumption simply cannot be adequately quantified in this type of analysis. The NHTSA rulemaking relates to matters that clearly call for precautions to be taken, including climate change, oil security, and competitiveness of the U.S. car industry. The incomplete or inadequate assessments of these issues in the NHTSA proposal are discussed elsewhere in these comments.

## **V. Reformed CAFE levels in 2008-2010**

The structure of Reformed CAFE offers certain advantages over the current system in principle. One of the most compelling is the potential for higher fuel savings. This potential is not an intrinsic advantage of attribute-based standards, but rather an artifact of the inappropriate way that NHTSA has chosen to set standards under the current system (the “least capable manufacturer” approach). In any case, the appeal of the Reformed CAFE system rests to a large extent on its ability to deliver these savings. Unfortunately, it delivers very little.

NHTSA may believe that this departure from choosing maximum feasible standards is justified by the longer-term advantages of the Reformed system. But the standards set for 2011, the only year covered by the rule in which the Reformed system is mandatory, will necessarily have been reduced relative to where they would be set if the Reformed system were required starting in 2008. This is a consequence of the phase-in periods NHTSA uses for the various new technologies: if the introduction of technologies is slowed in the years 2008-2010, the target for 2011 will be lowered.

Furthermore, oil savings for model years 2008-2010 cannot be sacrificed for the purpose of some speculative benefit of Reformed CAFE beyond the time frame for this rulemaking. In fact, Reformed CAFE will not deliver increase in the fuel savings that might be expected, due to the transition to a method of determining “maximum feasible” fuel economy level through a cost-benefit analysis, as discussed above. For 2011 and in the future so long as NHTSA retains the proposed approach of maximizing benefits, any fuel savings due to switching to the proposed footprint-based standards are likely to be offset to a large degree.

The standards for Reformed CAFE must yield higher fuel economy than the Unreformed standards if the Reformed system is more economically efficient. But in fact, the average fuel economy of new light trucks in 2008-2010 would be almost identical under the Reformed and Unreformed CAFE, the only difference being a 0.1 mpg increase in the 2009 fuel economy under the Reformed system (PRIA at VI-6). Given that Reformed CAFE is designed require fuel economy improvements of the better-performing manufacturers, this implies that the Reformed CAFE standards reduce the obligations of the less-efficient manufacturers. The Unreformed CAFE levels have already been determined to be feasible for the least capable manufacturer, however, so this reduction in burden is not consistent with the need to set the standard at the maximum feasible level.

The fact that the proposed levels for Reformed and Unreformed CAFE are virtually the same in 2008-2011 is primarily a reflection of the fact that the levels for Reformed CAFE were chosen so that total compliance cost is the same under the two systems (NPRM at 51423). This is a flaw in the proposal. The practicability of the Unreformed standard was chosen not according to the maximum acceptable compliance cost for the industry (or the country) as a whole, but rather according to the maximum acceptable level for a single manufacturer. The fairness benefit of the Reformed scheme should not be

that it relieves the burden on the less capable manufacturer, but rather that it places comparable burdens on all manufacturers. Simply redistributing the burden is not consistent with the “maximum feasible” requirement of the CAFE statute. A better approach to converting Unreformed CAFE levels to Reformed CAFE levels would be to choose class targets that impose a per-vehicle cost (or a percentage of vehicle cost) comparable to the per-vehicle cost for the least capable manufacturer under Unreformed CAFE. This is economically feasible and would give greater fuel savings than would the levels NHTSA has proposed for Reformed CAFE.

In addition to the fact that the projected savings from the Reformed CAFE are small and seem insufficient to compensate for the risk of vehicle upsizing associated with an attribute-based system, the savings that NHTSA projects for 2008-2010 will not be realized. Manufacturers will choose to meet Unreformed or Reformed CAFE standards any given year depending on which is less burdensome, which will necessarily result in their choosing the system that yields smaller savings. Indeed, for the same reason, not even the savings shown for the Unreformed system will be realized, since the less capable manufacturers will choose to meet the Reformed standards. Hence there is no question that fuel economy will increase less under the proposed two-option scheme than it would under a continuation of the current system. This is inconsistent with NHTSA’s mandate to set standards at the highest feasible level.

NHTSA requests comment on whether the three-year transition to Reformed CAFÉ is necessary (NPRM at 51417). The transition is neither necessary nor permissible. As discussed above, it is impermissible because it prevents the achievement of maximum feasible fuel economy. The question of necessity relates to the ability of manufacturers to make a transition in fewer than three years. The final rule will be adopted a full eighteen months before the official start of the 2008 model year, as required by law. This should provide sufficient time for manufacturers to move from the current system to the new system.

In summary, NHTSA’s proposal for Reformed CAFE should be revised to take advantage of the potential to achieve a substantial improvement over Unreformed CAFÉ, and NHTSA should require that manufacturers comply with whichever scheme yields maximum average fuel economy in each year.

## **VI. Effects of CAFE on the domestic auto industry**

The timing and magnitude of today’s high gasoline prices may have been hard to predict, but the trend was inevitable. The market result has been a steep decline in sales of high-consuming vehicles and increased sales of fuel-efficient ones, much to the detriment of GM and Ford. It is hard to believe that the adverse economic effects of prodding GM to raise fuel economy to higher levels than they were in fact required to achieve would have put the company in a situation worse than the one it is in today. While the American auto industry faces multiple critical challenges, its inability to compete with foreign manufacturers in the arena of fuel-efficient vehicles is certainly a key element in their arrival at the dangerous pass at which they now find themselves.

Indeed, the current situation exposes the folly of accepting the manufacturers’ longstanding argument that their ability to increase fuel economy is limited by the public’s interest in purchasing efficient vehicles. Clearly the public can and does change its opinion in this matter more rapidly than the automakers are able to respond. A well-designed CAFE program, whether Reformed or Unreformed, will encourage manufacturers to produce vehicles that consume less fuel, so that gas price increases do not lead to rapid shifts in the market. Moreover, when the demand for low-consuming vehicles rises suddenly, as it has recently, the manufacturer left to respond at the last minute is clearly at a disadvantage relative to those that have continued to improve fuel economy independent of fuel prices.

Under either the Unreformed or the Reformed CAFE system, a fuel economy policy that supports the domestic auto industry is one that promotes steady fuel economy increases designed to meet the maximum feasible level required by law.

## **VII. Need to set standards for a longer time period**

Increases of two-thirds in light duty fuel economy can be achieved over the next decade in a cost-effective manner.<sup>[2]</sup> In order to accomplish this, however, NHTSA must not only set more ambitious targets for the years 2008-2011, but also set standards for a longer period. It is essential to lay out a path for fuel economy requirements beyond the years for which manufacturers' product plans are well-developed to allow the CAFE program to serve its "technology-forcing" function and to achieve gains comparable to those of the CAFE law of 1975. We believe that NHTSA should similarly set standards a decade into the future. Automotive technologies are evolving rapidly at this time, and it is possible that fuel efficiency technology could improve even more rapidly than is anticipated today. For this reason, longer term standards should serve as a lower bound for fuel economy in the later years, but should be reviewed periodically and increased as needed.

### **VIII. Other comments**

#### Halting the abuse of the car/truck definition

While the proposed rule may remove the incentive for manufacturers to classify certain cars as light trucks, given that the proposed target for the smallest is higher than the car standard of 27.5 miles per gallon, an incentive to move larger cars and station wagons remains. Class 2 targets under the proposed scheme are lower than 27.5 miles per gallon. Consequently, reclassifying a car in the footprint range for Class 2 will help the manufacturer meet both car and light truck CAFE whenever the fuel economy of that vehicle falls between the Class 2 target fuel economy and the car standard.

#### Vehicles 8,500 to 10,000 pounds

We urge NHTSA to reconsider its decision to exclude vehicles in the 8,500 – 10,000 lb. GVW range from fuel economy standards.

#### Towing and cargo hauling capability

NHTSA requests comment on altering the standards to reflect towing and hauling capability (NPRM at 51417). This may further reduce oil savings of the proposed program. Manufacturers have proven adept at marketing vehicle capabilities that most consumers rarely use, and adjusting the standards to accommodate these various capabilities could promote this practice. This would occur in particular if adding the capability costs less than improving fuel economy to the applicable standard.

### **IX. Conclusion**

NHTSA's proposed fuel economy rule for light trucks represents a serious effort to address what some have perceived as shortcomings of the current CAFE program. Unfortunately, it has failed to address the primary shortcoming of the program, namely that the levels of the standards have changed very little over the last two decades and the program consequently has failed to curb oil consumption in the U.S. Indeed, neither the Unreformed nor the Reformed standards proposed by NHTSA achieve substantial fuel savings, and neither meets the statutory requirement that fuel economy standards be set at the maximum feasible level. We request that NHTSA address the shortcomings in the proposed rule discussed in these and other comments and modify the proposal accordingly.

Thank you for this opportunity to provide comments on the proposed rule for light truck fuel economy standards.

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<sup>[1]</sup> Billy Pizer, "Comments on CAFÉ light truck NPR and PRIA," workshop at Resources for the Future, October 20, 2005.

<sup>[2]</sup> See, e.g., DeCicco, An and Ross, "Technical options for improving the fuel economy of U.S. Cars and Light Trucks by 2010-2015." American Council for an Energy-Efficient Economy, 2001.