



Consumer Federation of America

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CFA ISSUE BRIEF

SETTING THE RECORD STRAIGHT ON INCREASING FUEL ECONOMY STANDARDS:

Higher Fuel Economy Standards Will Lower the Cost of Driving, Increase Auto Sector Employment, Keep U.S. Car Companies Competitive, and Reduce Our Dependence on Foreign Oil

June 2011

As the Administration gets closer to making a decision on vehicle fuel efficiency requirements extending to 2025, it appears that the discussion is focused on gradual increases that end in a range of 56 to 62 miles per gallon.¹ Our earlier analysis showed that a steady increase to these high levels by 2025 is both reasonable, eminently achievable and strongly supported by the public.² The scenario of a 5% per year increase to 56 mpg is the lowest level at which the standard should be set.

As the decision approaches, however, the debate between analysts has escalated.

- Last week the Center for Automotive Research (CAR), an organization with close ties to the auto industry, published an analysis that concluded that raising fuel economy standards by 3 percent per year from 2016 to 2025 to achieve a level of 47 miles per gallon (mpg) would raise the consumer costs of driving and hurt the auto industry.³
- On the other hand, an exhaustive Technology Assessment prepared by the Environmental Protection Agency and the National Highway Traffic Safety Administration less than a year earlier concluded that raising fuel economy standards by as much as 6 percent per year to 62 mpg by 2025 would lower consumer driving costs and help the auto industry.⁴
- A dispute has recently broken out between the Energy Information Administration (EIA) and the Alliance of Automobile Manufacturers (AAM).⁵ EIA criticized AAM for overestimating the loss of jobs that higher fuel economy would cause. In fact, the AAM has it exactly backwards; increasing fuel economy to at least 56 miles per gallon will increase auto production and sales and therefore increase auto industry employment.

This issue brief sorts out the various claims and sets the record straight. It shows that when the errors and misleading assumptions in the auto industry analysis are corrected, a gradual increase of 5 percent per year to 56 mpg by 2025 is consumer-friendly, good for the auto industry and national energy security. It achieves the following:

- Consumer savings in excess of \$6,000 per vehicle
- Increases in auto production and auto sector employment of 200,000 jobs by 2025, and
- Reduction of oil imports by one-third by 2025.

The CAR Study Overestimates the Cost of Increasing Fuel Economy Standards

- The CAR study includes the cost of new safety technologies that have no relationship to the improvement in the fuel economy of the vehicle.
- CAR incorrectly assumes that extremely high levels of plug-in electric vehicles are necessary to meet higher fuel economy standards and that the cost of electricity charging equipment will be substantial.
- The CAR study includes all of the technology costs and fuel saving benefits from 2008 to 2025, instead of the more appropriate method used by NHTSA which correctly analyzed the fuel standards for 2011 and 2012-2016 in separate proceedings.
- The costs of fuel savings technology in the CAR study are much higher than existing studies suggest because the estimates are static and fail to take into account declining costs that flow from increasing economies of scale and the natural efficiencies that come with implementation.

The CAR Study Vastly Underestimates the Value of Fuel Savings

- The CAR study uses a 10 percent discount rate, which has been rejected by the courts and all regulatory agencies. The Office of Management and Budget requires agencies to use discount rates between 3 and 7 percent. EPA used a 3 percent rate.
- The CAR study bases its analysis on only five years of ownership (when consumers are holding on to their vehicles longer than that today) and then assumes that the resale value of more fuel efficient vehicles commands no premium (which has not been true since gasoline prices started rising a decade ago). The EPA-NHTSA Technical Assessment Report (TAR) correctly uses the miles driven over the entire vehicle life to value savings.
- The EPA-NHTSA TAR includes an increase in driving consistent with the historical trend; the CAR study does not include this expected increase in driving.
- The CAR study uses two gasoline price scenarios with fixed cost estimates – \$3.50 and \$6.00 per gallon. The EPA-NHTSA TAR focuses on a single gasoline price scenario that starts at \$3.46 in 2025 and escalates to \$4.34 by 2050.

The Bottom Line on Fuel Economy

With numerous differences between the CAR and the EPA-NHTSA analyses, many adjustments are needed to ensure one is making “apples-to-apples” comparisons in attempting to reconcile the two. In order to compare the two studies, we have re-analyzed the data by applying the following consistent assumptions to each data set:

Basic Approach: Analyze the 5%-56 mpg scenario

Using the 2008-2025 time period from the CAR analysis

CAR range of gasoline prices \$3.50 to \$6.00 per gallon

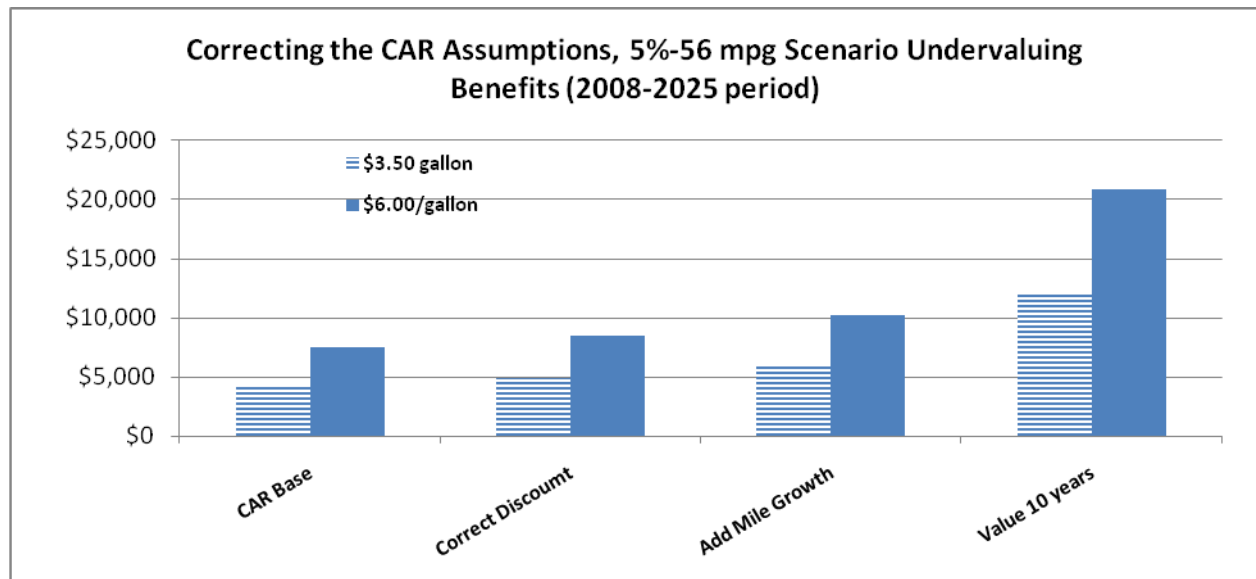
Real world mileage is 80 percent of standard (both use this)

EPA fleet mix and miles driven

- For cost: Excluded the CAR extraneous safety costs
Included CAR estimate of electricity charging costs⁶
Included the EPA-NHTSA cost of fuel savings technology for 2011 to 2016
- For benefits: Used the 3 percent discount rate as per EPA
Valued first ten years savings (split the difference between CAR and EPA-NHTSA)

These decisions about how to adjust the assumptions were based on the available data in the two studies. For example, we know the cost of electricity charging and extraneous safety costs from CAR, but EPA might use a different estimate. We know the cost of technology for the 2011-2016 increases in fuel economy from the earlier EPA-NHTSA analysis, but the CAR might use a different estimate. We know EPA-NHTSA miles driven, which facilitates valuing benefits, but CAR might use different mileage for the longer period. It is critical to ensure that these fundamental assumptions be consistent with each other.

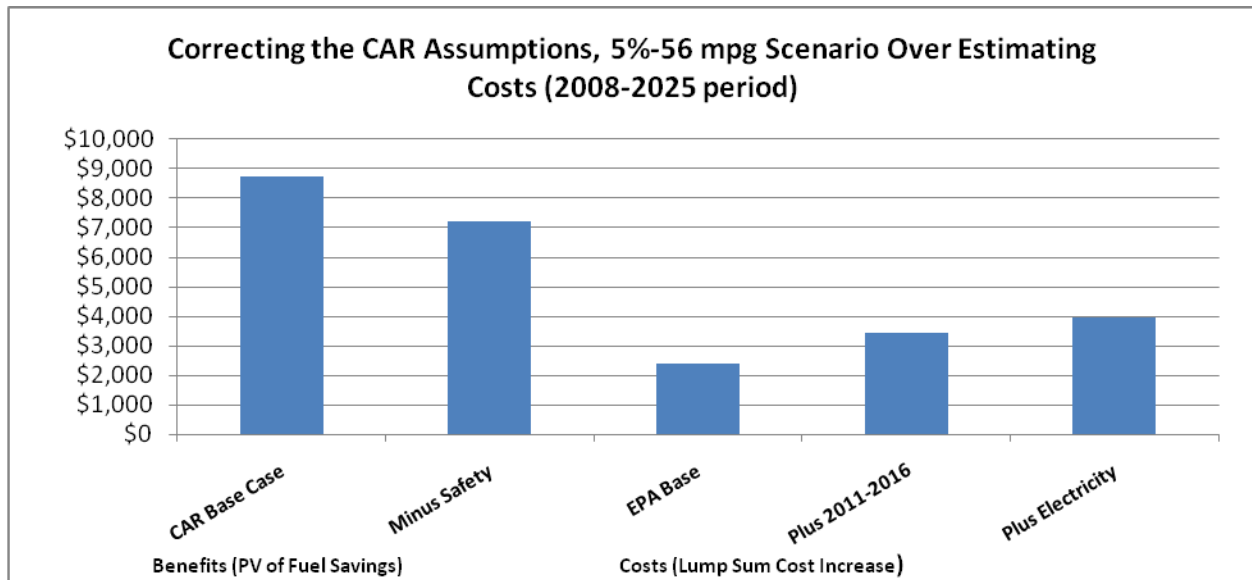
The following chart shows the impact of the erroneous assumptions about the value of fuel savings. Actual fuel savings are worth about three times as much as CAR concluded.⁷ Among the most important assumptions is that only five years of fuel savings matter and higher fuel economy has no value in the resale market. With consumers holding their vehicles for over six years and “gas sippers” commanding large premiums in the marketplace, these assumptions are clearly inappropriate. Our survey and econometric analysis of fuel economy over the past six years gives us great confidence that the higher value of consumer savings is the right approach and that consumers will act on that value in the marketplace if a higher standard is adopted.



See text for a description of the adjustments.

Erroneous Assumptions about Technology Costs

To evaluate the impact of the erroneous assumptions about technology costs in the CAR study, we constructed two technology scenarios: 1. CAR costs minus the safety costs, and 2. EPA-NHTSA costs plus 2011-2016 costs and electricity charging costs, as shown in the following figure. The auto industry uses an estimate of the cost of technology to improve fuel economy that is almost twice as high as that used by EPA-NHTSA.



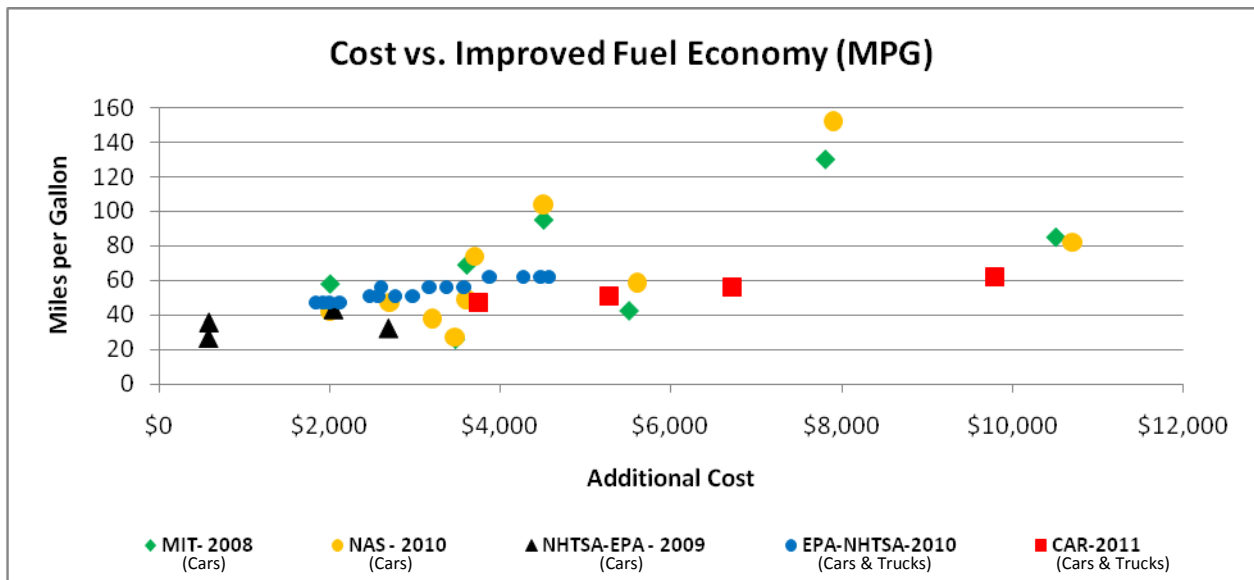
See text for a description of the adjustments.

When you properly compare the studies, and make an apples-to-apples comparison, there is a very clear conclusion:

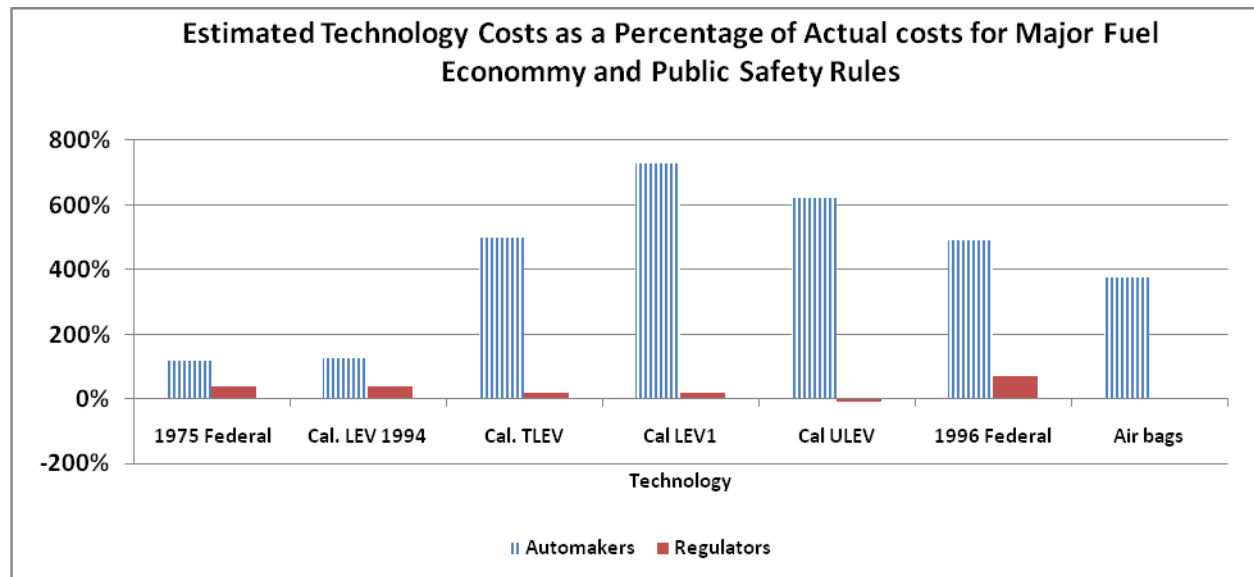
- Adjusting just the benefits, leads to the conclusion that the cost of driving will decline and employment will increase under all combinations of gasoline prices and technology costs. Adjusting both costs and benefits leads to very large savings.

In the dispute between AAM and EPA-NHTSA over technology costs, the scientific and real world evidence suggests that EPA-NHTSA are closer to the mark, as the top graph on the next page shows. The MIT, NAS and NHTSA-EPA estimates are for cars and trucks separately. For EPA-NHTSA and CAR, there is one estimate. At the costs that CAR uses for 56 and 62 mpg, NAS and MIT estimated we could be getting well over 100 mpg combined. The EPA-NHTSA 2010 estimates for 56 and 62 are much more consistent with the science.

Second, whenever fuel economy or public safety rules are on the table, auto makers have repeatedly overestimated the cost of new technologies by a wide margin, as the bottom figure on the following page shows. In contrast, regulators have shown a tendency to overestimate costs somewhat. Automakers and regulators have consistently overestimated the cost of technology as economies of scale and learning processes drive costs down over time. Therefore, we believe that the EPA-NHTSA estimates of costs and benefits are more realistic



Sources: NHTSA-EPA, 2009; National Highway Traffic Safety Administration, Corporate Average Fuel Economy for MY 2012-MY 2016 Passenger Cars and Light Trucks, Preliminary Regulatory Analysis (Washington, D.C.: August, 2009), Tables 1b, 2, 3, 4, 5, 6, 7; NAS, 2010; NAS -2010, National Research Council of the National Academy of Science, America's Energy Future (Washington, D.C.: 2009), Tables 4.3, 4.4; MIT, 2008; Laboratory of Energy and the Environment, On the Road in 2035: Reducing Transportation's Petroleum Consumption and GHG Emissions Cambridge: July, 2008), Tables 7 and 8; EPA-NHTSA - 2010, Environmental Protection Agency Department of Transportation In the Matter of Notice of Upcoming Joint Rulemaking to Establish 2017 and Later Model Year Light Duty Vehicle GHG Emissions and CAFE Standards, Docket ID No. EPA-HQ-OAR-0799 Docket ID No. NHTSA-2010-0131, Table 2, CAR - 2011, Center for Automotive Research, *The U.S. Automotive Market and Industry in 2025*, June 2011, Tables 10, 12, 13.

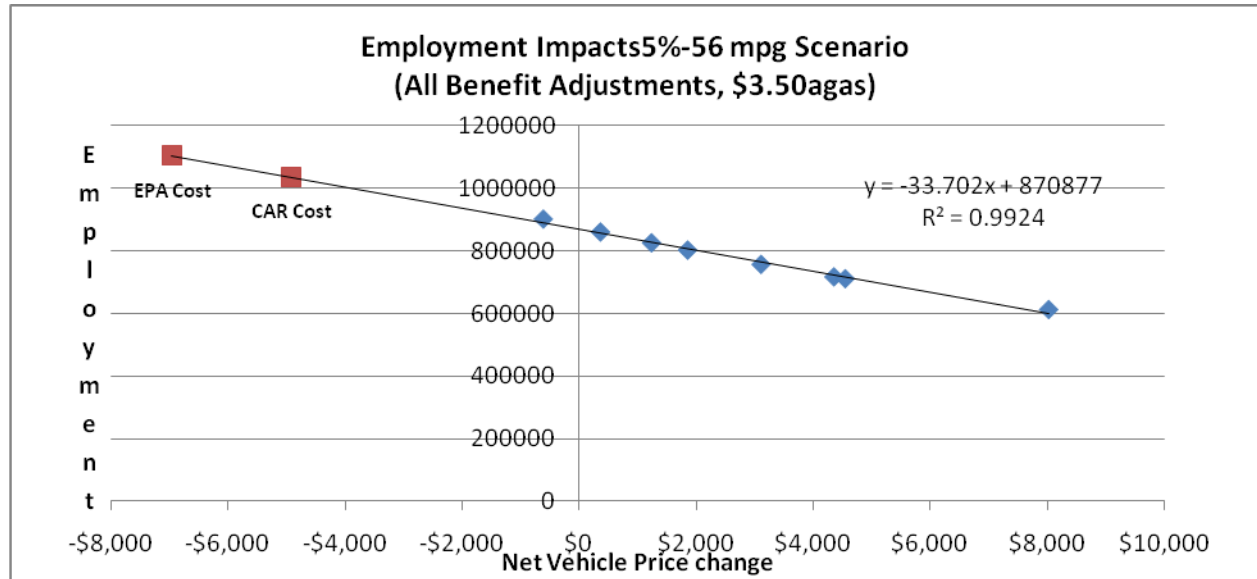


Source: Roland Hwang and Matt Peak, *Innovation and Regulation in the Automobile Sector: Lessons Learned and Implications for California's CO₂ Standard*, April 2006, "New auto safety rule comes pre-punctured." Miami News. July 12, 1984. 14A.

Employment Impacts

The CAR study recognizes that when the cost of driving declines, sales increase. The CAR study assumes that each 1 percent change in the "net price" of a vehicle (where net price is the cost of the vehicle minus the change in operating costs) – changes employment by at least 10,000 jobs. The CAR study focused on net cost increases, because of its erroneous assumptions. We find that higher fuel economy lowers the cost of driving and

the net price of the vehicle, so it should lead to employment increases.⁸ As the following figure shows, using the jobs multiplier from the CAR study once the errors in the CAR study are corrected, both the adjusted EPA-NHTSA analysis and the CAR analysis project savings of over \$6,000 per vehicle which translates to over 200,000 more automotive jobs.

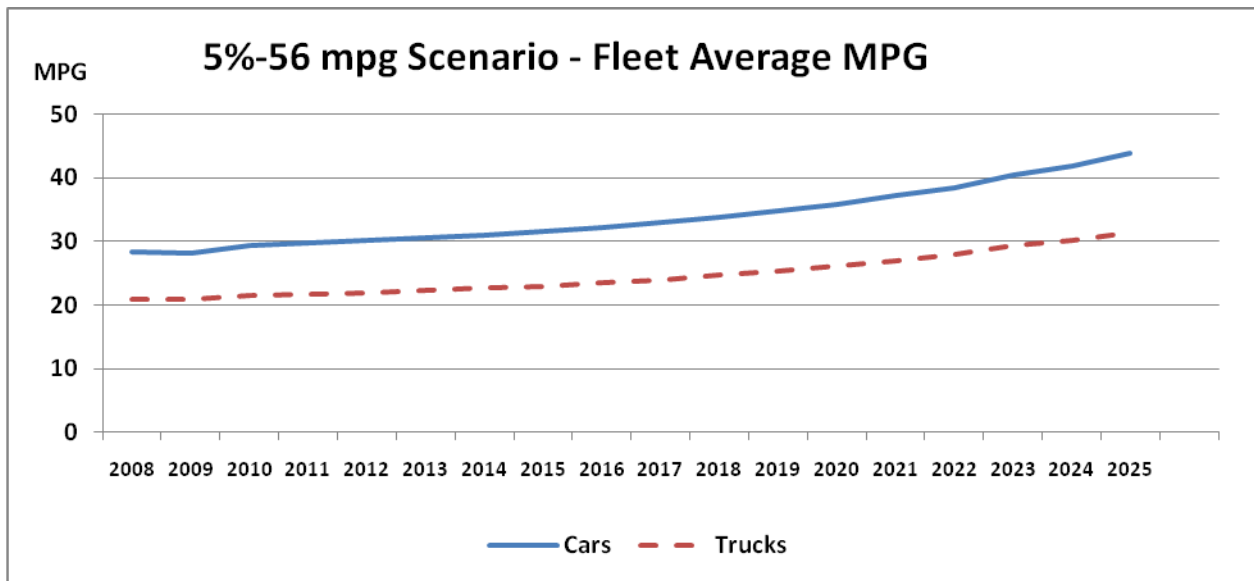


Sources: Auto Industry Employment Multiplier from Center for Automotive Research, *The U.S. Automotive Market and Industry in 2025* (June 2011), Table 13. Net Price Change from EPA-NHTSA, Environmental Protection Agency & Department of Transportation: In the Matter of Notice of Upcoming Joint Rulemaking to Establish 2017 and Later Model Year Light Duty Vehicle GHG Emissions and CAFE Standards, Docket ID No. EPA-HQ-OAR-0799 Docket ID No. NHTSA-2010-0131, Table 2.

Other Benefits of Higher Fuel Economy

The outcome of the President’s decision on fuel economy will have a profound impact on consumer pocketbooks. As such, the Consumer Federation of America is unquestionably convinced that a target of 56 mpg by 2025 will have a very positive impact on consumer spending. Our 6 years of consumer surveys, consistently show a high degree of concern about gasoline prices among 80% (or more) of respondents. Their second biggest concern is about dependence on Mid-East oil. This concern about gas prices and dependence on foreign oil, combined with the achievability of 56 mpg by 2025, make it imperative that we accept nothing less of auto manufacturers.

The 5%-56 mpg scenario embodies a long-term gradual increase in fuel economy. Therefore, as the new, more fuel efficient vehicles replace older, less fuel efficient vehicles, the average fuel economy of the fleet will rise, as shown in the following exhibit. By 2025, the vehicle fleet will consume approximately one-third less gasoline, compared to 2008 and over one-quarter less gasoline compared to 2016. The reduction in demand for oil of over 3 million barrels per day equals approximately one-third of total crude oil and petroleum product imports. The reduction in imports will lower the amount of money paid to foreign oil producers by over \$130 billion in 2025.



Source: 2008-2010 fuel economy from EPA, Light Duty Automotive Technology, Vehicle survival rates from EPA-NHTSA, Environmental Protection Agency Department of Transportation In the Matter of Notice of Upcoming Joint Rulemaking to Establish 2017 and Later Model Year Light Duty Vehicle GHG Emissions and CAFE Standards, Docket ID No. EPA-HQ-OAR-0799 Docket ID No. NHTSA-2010-0131, Table?

More fuel efficient vehicles allow consumers to spend more on other goods and services and consumer spending has a much higher multiplier on economic activity than money exported to foreign oil producers. This is part of the reason that auto sales and auto industry employment increase.

Finally, there is no question that a U.S. industry focused on a 5 percent-56 mpg by 2025 standard will be much more competitive both here in the U.S. and globally, producing vehicles in the U.S. that can meet international expectations and standards.

The Benefit of Technology Neutral, Product Neutral Long-Term Standards

The current approach to standard setting, which is technology neutral, product neutral and long-term, transforms standards into consumer friendly, precompetitive instruments of public policy.

Long-Term: Setting a high standard for the next fifteen years is intended to foster and support a long-term perspective for automakers and the public, by reducing the marketplace risk of investing in new technologies. The long-term view gives the automakers time to re-orient their thinking, retool their plants and help re-educate the consumer. The industry spends massive amounts on advertising and expends prodigious efforts to influence consumers when they walk into the show room. By adopting a high standard, they will have to expend those efforts toward explaining why higher fuel economy is in the consumer interests. Consumers need time to become comfortable with the new technologies.

Product Neutral: The new approach to standards accommodates consumer preferences; it does not try to negate them. The new approach to standards is based on the footprint (size) of the vehicles and recognizes that SUVs cannot get the same mileage as compacts. Standards for larger vehicles will be more lenient, but every vehicle class will be required to improve at a fast pace. This levels the playing field between auto makers and removes any pressure to push consumers into smaller vehicles.

Technology-neutral: Taking a technology neutral approach to the long term standard unleashes competition around the standard that ensures that consumers get a wide range of choice at that lowest cost possible, given the level of the standard. There will soon be hundreds of models of electric and hybrid vehicles using four different approaches to electric powertrains (hybrid, plug-in, hybrid plug-in, and extended range EVs), offered across the full range of vehicles driven by American consumers (compact, mid-size family sedans, large cars, SUVs, Pickups), by half a dozen mass market oriented automakers. At the same time, the fuel economy of the petroleum powered engines can be dramatically improved at consumer friendly costs and it will continue to be the primary power source in the light duty fleet for decades.

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Endnotes

¹ Aaron Kessler, "56 m.p.g. Could be Fuel Economy Target by 2025," *Detroit Free Press*, June 26, 2011; Josh Mitchell, Sharon Terlep US Eyeing 56.2 MPG Cars By 2025, *Wall Street Journal* - June 25, 2011, while the headlines focus on the 56 mpg target, the article mention that the debate has been between 47 and 62.

² Household, Gasoline Expenditures and the Fuel Economy of U.S. Vehicles, U.S. Consumers Support Much Higher Standards, But Will Policymakers Finally Get Serious About Ending Our "Addiction to Oil," March 16, 2011, http://www.consumerfed.org/pdfs/CFA_Increasing_Fuel_Economy_Report_revised_5-31-11.pdf; Issue Brief: Setting the Next Round of Fuel Economy Standards: Consumers Benefit at 60 Miles per Gallon (or More); , AUGUST 2010, http://www.consumerfed.org/pdfs/60mpg_Study090210.pdf; COMMENTS OF THE CONSUMER FEDERATION OF AMERICA, Before the Environmental Protection Agency Department of Transportation In the Matter of Notice of Upcoming Joint Rulemaking to Establish 2017 and Later Model Year Light Duty Vehicle GHG Emissions and CAFE Standards, Docket ID No. EPA-HQ-OAR-0799 Docket ID No. NHTSA-2010-0131, Chapter 3 <http://www.consumerfed.org/pdfs/CFA-NOI-Comments-10-29-10.pdf>

³ Center for Automotive Research, *The U.S. Automotive Market and Industry in 2025*, June 2011

⁴ EPA-NHTSA - 2010, Environmental Protection Agency Department of Transportation In the Matter of Notice of Upcoming Joint Rulemaking to Establish 2017 and Later Model Year Light Duty Vehicle GHG Emissions and CAFE Standards, Docket ID No. EPA-HQ-OAR-0799 Docket ID No. NHTSA-2010-0131,

⁵ Neil Roland, "Agency: Alliance job-loss claim is faulty," *Automotive News*, June 27, 2011.

⁶ The CAR assumption for the 6%-62 mpg scenario is extremely high, but the distortion for the 5%-56 mpg scenario is less severe.

⁷ The benefits have been underestimated in both studies because the cost of gasoline is likely to be considerably higher than \$3.50 per gallon and the value of fuel efficient vehicles will be higher over time as gasoline prices rise.

⁸ NHTSA-EPA, 2009; National Highway Traffic Safety Administration, Corporate Average Fuel Economy for MY 2012-MY 2016 Passenger Cars and Light Trucks, Preliminary Regulatory Analysis (Washington, D.C.: August, 2009), Table VII8c shows employment gains for the 5% scenario.