



Consumer Federation of America

SHIFTING FUEL ECONOMY STANDARDS INTO HIGH GEAR

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OVERVIEW

This paper summarizes the key conclusions and policy recommendations from the comments of the Consumer Federation of America (CFA) in response to the National Highway Traffic Safety Administration (NHTSA) and Environmental Protection Agency (EPA) Notice of Proposed Rulemaking to Establish Light Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards.

Our analysis of purchase decisions and opinion polls over the past half-decade shows that consumers want a great deal more fuel economy than automakers have been willing to supply. Further, analysis of data in the recent proposed rulemaking by NHTSA/EPA finds that the industry can achieve much higher fuel economy – 38.1 miles per gallon (mpg) by 2016 and at least 45 mpg by 2020. As a result, large potential benefits for consumers, the nation and the environment are left unrealized. This represents a major market failure and is the primary focus of our analysis.

Economic analysis of fuel economy data presented in the rulemaking by NHTSA/EPA suggests why consumers want more fuel economy. The cost to consumers of increasing vehicle fuel economy to 38.1 mpg, for example, is well below the amount consumers are willing to pay and will save in gasoline costs. It costs only \$1.28 to save a gallon of gasoline, far below the current cost of gasoline, as shown in Exhibit S-1. The increase in the monthly loan payment to purchase the more fuel-efficient vehicle is less than the reduction in expenditures for gasoline, making it cash flow positive from the beginning. In addition, the fuel-efficient vehicle has a higher value at resale. As an investment it would yield a 9 percent real rate of return. A fleet wide average of 38.1 mpg would reduce gasoline consumption by 95 billion gallons, yield consumer pocketbook savings of over \$140 billion and total societal benefits of over \$190 billion while reducing greenhouse gas emissions by over 42 billion tons.

Projecting a constant rate of increase in the maximum environmental/economic standard level achieved in 2012–2016 out to 2020 would put the standard at just over 45 mpg in 2020. In short, technologies identified in 2008 could already support the goal of 45 mpg by 2020 and the technological limits are not fixed.

Our analysis of the failure of the market to yield an efficient outcome with respect to fuel economy has four critical purposes in these comments and implications for the process of standard setting for both fuel economy and tailpipe emissions.

First, the explanation of why the vehicle fleet is less efficient than it should be is critical to understanding why fuel economy standards are the right policy to address the problem and

how those standards should be set. Our analysis shows that setting fuel economy standards is an ideal approach to addressing the market imperfections, barriers, flaws and obstacles that underlie the failure of the market to deliver higher fuel economy. Exhibit S-3 highlights the specific market failures operating on fuel economy in the automobile market that are addressed by fuel economy standards.

Second, it demonstrates that the consumer welfare gains, which account for almost 80 percent of the total societal welfare gains, should be included in the cost-benefit analysis. Without these gains, a benefit-cost framework would justify little if any increase in fuel economy standards. The nature and extent of the market failure dictates the degree of confidence in the consumer welfare gains.

Third, the law and practice of setting fuel economy standards at NHTSA under the Energy Policy Conservation Act (EPCA) have resulted in forcing NHTSA to confine standard setting to a short period and give the behavior and plans of the automakers a prominent role in determining the level of the standard, which retards the ability of NHTSA to set standards that promote the public interest (see Exhibit S-2).

Fourth, because there is a direct link between carbon emissions and fuel economy and because EPA has a strong mandate to protect the public health and welfare and can take a long-term view to promote technological progress, EPA should be responsible for standard setting.

The first step in setting the industry on a path to a stable, high fuel economy future should be to establish a high rate of improvement in fuel economy starting with a target of 45 mpg by 2020 and a commitment to continue a sustained improvement at the same rate of improvement for the long-term (see Exhibit S-4).

THE IMPORTANCE OF THIS GROUNDBREAKING RULEMAKING

In many ways, this is the most important change in the Corporate Average Fuel Economy (CAFE) program since its inception three and a half decades ago.

- This rulemaking unifies the regulation of the energy and environmental standards for motor vehicles in the U.S.
- It embodies one of the largest increases in fuel economy over a four-year period in the history of the program.
- It resolves a major dispute over federal and state shared authority to order improvements in the environmental impact of automobiles, preserving the most important dynamic characteristics of federalism.
- It is based on a consensus agreement that includes the automakers.
- It incorporates new methodology for analyzing potential CAFE and greenhouse gas emissions standards that is more transparent, replicable and accurate than the prior methodology.

At the same time, this rulemaking reflects the fact that it is a transition regulation that demands a more effective process for setting fuel economy standards in the future.

- The transition requires the EPA and NHTSA to harmonize and reconcile their statutes.
- The rulemaking recognizes the dire circumstances of the auto industry and allows it some breathing space to redefine itself and retool before a more rigorous and demanding regime of fuel economy improvement is required.

Thus, the ultimate success of this landmark rulemaking will be in the framework of standard setting that it creates for the future. There are many critical issues that will have to be resolved in order to ensure that the standard setting process provides the maximum benefits for consumers, the nation and the environment.

THE BENEFIT OF HIGHER FUEL ECONOMY

The nation's effort to reduce energy consumption and greenhouse gas emissions is urgent and this proceeding provides an ideal opportunity to build a platform for a dynamic, consumer-friendly, environment-friendly automobile industry in the U. S. that accomplishes those goals.

- The nation needs a long-term vision for the steady and dramatic improvement in the fuel economy and environmental footprint of the light duty vehicles fleet (cars and trucks).
- The technology exists in the near-term to decrease the emissions of greenhouse gases and sharply increase the fuel economy of cars and trucks — to as much as 45 mpg by 2020.
- Shifting the responsibility for regulating vehicle fuel economy and emissions to the EPA would provide the best path to accomplishing these goals.

The stakes are huge, as shown in Exhibit S-1. Compared to the business-as-usual baseline, if standards were set at the level that achieved the maximum benefit to the environment at no net cost to society, as defined by NHTSA/EPA in this rulemaking (i.e. 38.1 mpg by 2016), the vehicles produced in the five-year period covered by the standard would produce the following savings.

- Consumers would spend \$131 billion less on gasoline.
- The nation would consume 95 billion fewer gallons of gasoline.
- Vehicles would emit 42 billion fewer tons of carbon dioxide and other greenhouse gases.
- The consumer, national security and environmental benefits would total over \$190 billion.

Exhibit S-1 also shows the large benefits that have been left on the table as a result of the dire circumstances of the industry. The proposed rule delivers far smaller benefits than could be achieved, if the industry were not holding the agencies back.

Our analysis of opinion polls and purchase decisions over the past half-decade show that consumers want a great deal more fuel economy than automakers have been willing to supply. The NHTSA/EPA analysis shows that the cost of higher fuel economy is well below the amount consumers are willing to pay and the cost of gasoline. The cost of saved energy, a concept frequently used in the analysis of energy efficiency, is also far below the current cost of gasoline.

Exhibit S-1: Economic, National Security and Environmental Benefits of Various Alternative Standard Levels

Conceptual Basis of the Standard	MPG 2016	Economic Benefit (Billion \$, Net NPV)		National Security Reduced Gasoline Consumption (Billion Gallons)	Cost per gallon saved	Environmental Greenhouse Gas Reduction (Billion Tons)
		Societal	Consumer Pocketbook			
Proposed	34.1	141	106	62	\$0.98	29
Max. Environmental/ Economic Benefit (Total Benefit=Total Cost)	38.1	191	143	95	\$1.28	42

Sources and notes: National Highway Traffic Safety Administration and Environmental Protection Agency Proposed Rulemaking to Establish Light Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards. *Preliminary Regulatory Impact Analysis*, Tables 1b, 7,8,9, and 10. The 3 percent discount rate scenario is used. The consumer pocketbook calculation subtracts the cost of meeting the standard (technology cost) from the fuel savings (lifetime fuel expenditures) and adds in the reduction in the price of gasoline (the petroleum market externality). These are the direct, monetary impacts that will affect the consumer pocketbook. The analysis assumes that the fuel savings and market externalities scale with the quantity of gasoline consumption reduction.

Setting standards at the level of 38.1 miles per gallon by 2016 would be good deal for consumers. Although the more fuel efficient vehicles cost more, they are:

- Cash flow positive in the first month, assuming a five year auto loan at 7 percent interests;
- Yield a 9 percent rate of return as an investment;
- Pay for themselves in 4 years;
- Add substantially to the resale value of the vehicle.

The existence of these large potential benefits for consumers, the nation and the environment indicates a major market failure in this sector and that is the primary focal point of our analysis. Even if there were no national security or environmental costs associated with fuel economy, the automobile market has failed to deliver the optimum level of fuel economy for decades and NHTSA has failed to set standards to achieve the optimal level of fuel economy. The cost of owning and operating a vehicle is more than it should be because consumers are

using vehicles that consume more gasoline than they should. Adding in the national security and environmental costs of oil consumption and the societal cost of the market failure is even larger.

SHIFTING THE FOCUS OF STANDARD SETTING

These comments show that shifting the responsibility of standard setting to the EPA creates a much greater possibility of delivering large benefits to the consumer, the nation and the environment. NHTSA has failed to deliver these benefits because it is unduly constrained by law and practice. This is the third CAFE rulemaking in less than a decade and the constraints on the approach taken by NHTSA to standard setting that limit its ability to promote the consumer and public interest have been clear in each. In our 2008 comments on the CAFE rulemaking we criticized NHTSA’s approach on many grounds. Unfortunately, given the transitional nature of this proceeding, many of those flaws have been brought forward into this Notice and supporting materials. Indeed, the dire circumstances of the auto industry have made matters worse. The agencies have been forced to set standards far below the level that makes economic and environmental sense and leave very large sums of potential consumer, national security, energy and environmental benefits unrealized because the industry is in such a fragile state.

As a legal and practical matter NHTSA faces important impediments that inhibit its ability to achieve the above goals that the EPA does not. A shift in the focal point of standard setting to EPA is consistent with the legal mandates in the governing statute and makes perfect sense from a policy point of view. The reasons for this shift in focus are summarized in Exhibit S-2.

Exhibit S-2: Institutional Reasons to Shift the Focus of Standard Setting to EPA

<u>Institutional Context of standard Setting</u>	<u>NHTSA</u>	<u>EPA</u>
Mandate	Permissive above 35 mpg, maximum feasible constraint	Obligatory to protect the public health and welfare
Time Frame	Limited to 18-60 month period	Unlimited
Economic Constraint	Practicable, restricted by industry capacity	Costs considered
Technology	Restrained by industry plans	Technology forcing
Implementation	Existing regulatory apparatus No responsibility for measurement	Existing regulatory apparatus Responsibility for measurement

First, NHTSA is required to achieve only a 35-mpg by 2020, but beyond that there is no mandate to achieve higher levels of fuel economy. In contrast, as a result of a recent Supreme Court ruling, EPA is obligated under the Clean Air Act (CAA) to regulate tailpipe emissions of pollutants like carbon dioxide to protect the public health and welfare.

Second, NHTSA is severely constrained in the time frame for which it can set standards. It must give the automakers at least 18 months advance notice of what the standard will be and it

cannot set standards more than 5 years in advance. This narrow window for standard setting is too short for effective long-term planning. The rulemaking period barely covers a full product design cycle in the auto industry. NHTSA has repeatedly said that the time frame is too short to ask the industry to do too much. The short time horizon shortchanges the public. EPA is not under this time constraint. Therefore, it can give the industry a long-term trajectory that promotes energy efficiency and environmental clean-up. In other words, NHTSA has neither the legal mandate nor the ability to take a long-term view of fuel economy, but EPA has the ability to do so for tailpipe emissions.

Third, because there is a direct physical relationship between the amount of greenhouse gasses a vehicle emits and the amount of gasoline it uses, by discharging its obligation to protect the public health and welfare under the Clean Air Act and regulate carbon dioxide emissions, EPA will also be effectively establishing fuel economy standards.

Fourth, the economic constraint under which NHTSA operates is more restrictive than EPA's. NHTSA is bound to do what is "economically practicable," while EPA must consider cost.

Fifth, NHTSA has interpreted its mandate under the statute to be largely constrained by what the industry capabilities are. It hesitates to be technology forcing, repeatedly finding that the industry has not planned and therefore cannot make significant changes. What the industry "can" do is largely a function of what it "wants" to do, not what is in the public interest. The lack of fuel economy becomes a self-fulfilling prophecy, or, in light of recent developments in the industry, a self-inflicted wound. EPA is not bound by this practice.

Finally, NHTSA has chosen to assume that vehicle attributes remain constant. In recent years, consumers have proven to be willing to change their preferences, a shift that caught automakers by surprise. EPA has more flexibility to envision and promote changes in vehicle attributes in response to emissions standards.

D. STANDARDS ARE THE RIGHT WAY TO CLOSE THE EFFICIENCY GAP

Our lengthy discussion of the failure of the market to yield an efficient outcome with respect to energy efficiency has three critical purposes in these comments and the process of standard setting for both fuel economy and tailpipe emissions.

First, the explanation of why the vehicle fleet is less efficient than it should be is critical to understanding why fuel economy standards are the right policy to address the problem and how those standards should be set. The explanation of the "efficiency gap" (the gap between the optimal level of efficiency and the level the marketplace yields) involves a host of market imperfections, barriers and obstacles on both the supply and the demand side. Our analysis shows that setting fuel economy standards is an ideal approach to addressing the market imperfections, barriers, flaws and obstacles that underlie the market failure. Exhibit S-3 summarizes the results of the discussion of market failure. It identifies a large set of causes of market failure that have been identified in three different literatures – the general economic literature, the broad energy efficiency literature and the literature on fuel economy. Exhibit S-3

highlights the specific market failures operating on fuel economy in the automobile market that are addressed by fuel economy standards.

Second, the Notice requests comment on the inclusion of consumer welfare gains in the benefit-cost analysis. Since consumer welfare gains represent almost 80 percent of the total societal welfare gains, this issue is immensely important. Without these gains, a benefit-cost framework would justify little, if any, increase in fuel economy standards. The nature and extent of the market failure dictates the degree of confidence in the consumer welfare gains.

Third, and more importantly, the law and practice of setting fuel economy standards at NHTSA under the EPPA have resulted in giving the behavior and plans of the automakers a prominent role in determining the outcome. Because the concept of economic practicability has been interpreted to rest substantially on the contemporary capabilities of the industry, it sets the primary constraints on progress. To the extent that automakers are deficient economic actors and market structures are imperfect, the reliance on the outputs of these two as a governor on what can be done undermines the ability of the agency to write rules that are in the public interest. Poor performance by the industry become a self-fulfilling prophesy in the setting of lax standards, which allows the industry to continue with its poor performance. Thus, the discussion of market failure provides a conceptual and empirical basis to prefer a regulatory approach that is not hampered by the dependence of the regulatory process on the flawed industry behavior and market structure.

In this context, it is precisely because EPA's mandate under the Clean Air Act does not suffer from the afflictions of EPCA that public policy should prefer EPA and the CAA as the platform for regulation. Thus, the overwhelming evidence of market failure combines with the legal framework to make a compelling case that EPA should set tailpipe CO₂ emission standards as an indirect way of setting fuel economy performance.

E. AS THE FIRST STEP IN THE LONG-TERM APPROACH, EPA SHOULD SET THE TARGET FOR 2020 AT 45 MPG

While the current state of the auto industry has led the Federal agencies to set a low standard, the technical potential exists to achieve much high levels of fuel economy, as Exhibit S-4 shows. In the 2008 CAFE proceeding, NHTSA examined a potential standard it called Technology Exhaustion, which is the point where the maximum usage of available technologies to reduce energy consumption is reached, disregarding the cost impacts. Using the vehicle mix that NHTSA now projects; the standard would have been set at almost 45 mpg in 2020.

Projecting a constant rate of increase in the maximum environmental/economic standard level achieved in 2012 –2016 out to 2020 would put the standard at just over 45 mpg in 2020. In short, technologies identified in 2008 could already support the goal of 45 mpg by 2020 and the technological limits are not fixed. The limit should advance over time as the cost of technologies declines, the automakers become more adept at incorporating new technologies and technologies move from the research and development phase into the deployment phase.

Exhibit S-3: Causes of Energy Market Failure and the Role of Standards in Closing the “Efficiency Gap”

Neo-classical and Traditional Industrial Organization

Challenges from Keynesian, New Institutional and Behavioral Economics

SOCIETAL FLAWS

Externalities:
 Environmental
 Energy Security
 Public Goods
 Basic research
 Information
 Learning by doing
 Learning by using
 Other

INDUSTRY STRUCTURAL PROBLEMS

Imperfect Competition
 Concentration
 Barriers to Entry
Scale
 Vertical Leverage
 Collusion
 Marketing
Bundling: Multi-attribute
 Gold Plating
 Inseparability
 Purchase Method
 Advertising
Regulation & Policy
 Price Distortion Avg-cost
 Permitting
 Other Distortions
Cost Structure
Product Cycle
 Disaggregated/
 fragmented Mkt.
Elasticity
 Own-Price
 Cross-Price
 Income
Availability
Lack
 Emergency Replacement
Quality
 Improper Installation
 Lack of Enforcement

ENDEMIC IMPERFECTIONS

Ownership
 Agency
 Transfer
 Limited payback
 Lack of premium
 Capital
 Illiquidity
Asymmetric Information
 Perverse Incentives/
 Conflict of Interest
Moral Hazard

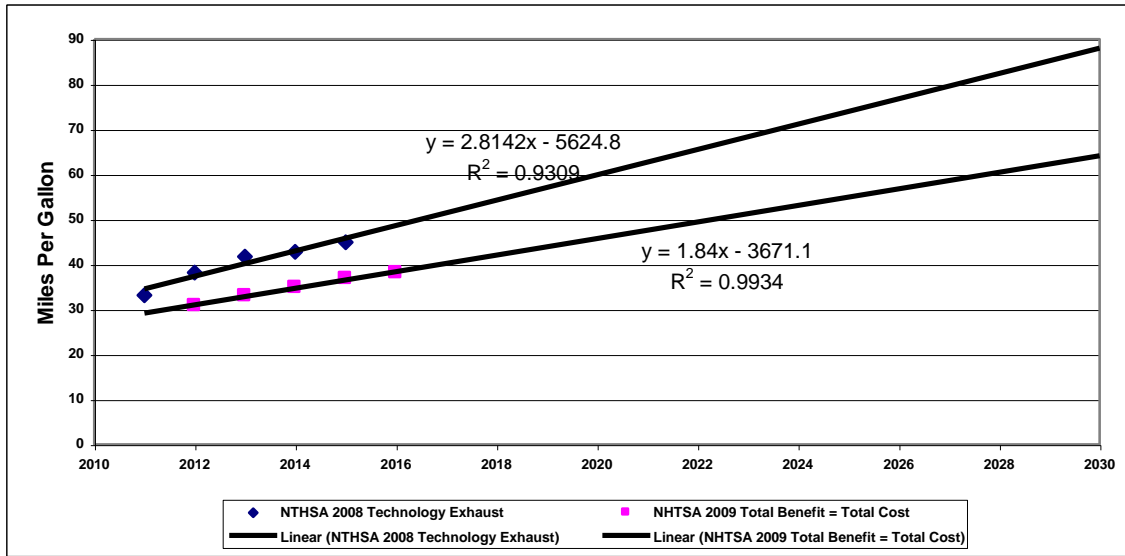
**TRANSACTION COST/
 NEW INSTITUTIONAL
 ECONOMICS**

Friction
 Sunk costs
 Lifetime
Risk & Uncertainty
 Technology
 Marketplace
 Policy
 Financial
 Liability
Imperfect Info.
 Availability
 Accuracy
 Search Cost
 Organizational
 Structure

BEHAVIORAL FACTORS

Motivation
 Preference
 Custom
 Values & Commitment
 Social group & status
Perception
 Prospect
 Framing
 Loss Avoidance
 Status Quo
 Salience
 Social Influence
 Awareness
 Attention
 Low priority
Calculation
 Bounded rationality
 Ability to process info
 Limited understanding
 Heuristic Decision Making
 Rules of thumb
 Information
 Discounting
 Low Probability Events
 Long-Term
 Small Outcomes
Implementation
 Improper use &
 maintenance

Exhibit S-4: Potential for Long-Term Improvement in Fuel Economy Standards



Sources and notes: National Highway Traffic Safety Administration and Environmental Protection Agency Proposed Rulemaking to Establish Light Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards. *Preliminary Regulatory Impact Analysis*, Tables 1b; National Highway Traffic Safety Administration, *Average Fuel Economy Standards, Passenger Cars and Light Trucks, Preliminary Regulatory Impact Analysis*, 2008 Table 1b.

Projecting longer-term possibilities is uncertain, but the commitment to a continuous improvement could raise average fuel economy for the overall fleet to much higher levels, in the range of 70 to 90 miles per gallon by 2030, especially as electric vehicles.

Thus, EPA and NHTSA have the opportunity in the current rulemaking to establish a platform on which a dynamic, innovative automobile manufacturing sector can be built in America, one which meets the needs for transportation in our continental economy in a manner that saves consumers money, enhances national security through reduced oil imports, and ensures that the transportation sector makes its full contribution to meeting the challenge of global warming. Shifting the focal point of standard setting to EPA will result in standards governing the fuel economy and environmental footprint of the vehicle fleet that are far more economically efficient and environmentally effective.