BEFORE THE NATIONAL HIGHWAY TRANSPORTATION SAFETY ADMINISTRATION, DEPARTMENT OF TRANSPORTATION

NOTICE OF INTENT TO PREPARE AN ENVIRONMENTAL IMPACT STATEMENT; REQUEST FOR SCOPING COMMENTS	**DOCKET NO. NHTSA-2017-0069**

COMMENTS OF THE CONSUMER FEDERATION OF AMERICA

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INTRODUCTION

THE CONSUMER FEDERATION OF AMERICA: EXPERTISE AND INTEREST

The Consumer Federation of America[1] appreciates the opportunity to provide the National Highway Safety Administration (NHTSA) of the Department of Transportation (DOT) with guidance in its efforts to scope out the Environmental Impact Statement (EIS) that must accompany its proposed fuel economy standards for model years 2022-2025 and any reconsideration it undertakes for earlier year standards. Throughout its 50 years of existence, CFA has been a vigorous and continuous participant in the process of setting regulations to improve the efficiency of energy-using consumer durables and lower the cost of energy borne by consumers.[2] Transportation fuels, the source of energy most directly affected by DOT regulations, are a major household expenditure, representing over 3 percent of total expenditures, one of the 6 largest subcategories listed in the consumer expenditure survey. Factoring in indirect expenditures on fuels consumed by commercial fleets,[3] which consumers pay for in the price of goods and services, would push transportation fuel consumption above 5%, making it the third or fourth largest household expenditure. [4]

To guide the DOT, these comments identify a number of principles that should inform its EIS and demonstrates them with specific examples from evidence before the agency. The empirical examples presented in these comments are drawn from materials previously filed in relevant proceedings. Each section begins with an excerpt from comments filed in fuel economy proceedings,[5] which are then followed by more recent analyses that show the original conclusions are supported by real world trends. [6]

While the EIS scoping intent seeks broad framing guidance, this Notice of Intent contains several references that go to the substance of the issues. The notice for the EIS scoping document notes the decision to "reconsider" the final determination of the Environmental Protection Agency (EPA) and the California Air Resources Board (CARB). It also newly lays on the table the reconsideration of the 2021 model-year standards. Although NHTSA must conduct a new proceeding to write standards for 2022-2025, it did participate in the proceedings underlying the 2021 standard and in drawing up the Technical Analysis Report that underlies the EPA and CARB determinations. In essence, it proposes to reverse more than half of the rules of

[1] The Consumer Federation of America is an association of more than 250 nonprofit consumer groups that was established in 1968 to advance the consumer interest through research, advocacy, and education.

[2] The CFA website (http://consumerfed.org/issues/energy/) provides links to 140 pieces of testimony and reports published in the past ten years dealing with the efficiency of energy-using consumer durables divided roughly equally between appliances and vehicles.

[3] Mark Cooper, *Paying the Freight*, Consumer Federation of America, attached to CFA Comments *Re: Department of Transportation Notice of Intent to Prepare an Environmental Impact Statement for New Medium- and Heavy-duty Vehicle Fuel Economy Standards*— August 8, 2014

[4] https://www.bls.gov/cex/22016/midyear/quintile.pdf. Adding appliance efficiency standards, which are governed by a structure of legal authority and administrative rules similar to that affecting appliances doubles the level of household expenditures and makes regulatory reform one of the largest consumer pocketbook issues for the Trump or any administration.

[5] Comments of the Consumer Federation of America, Proposed Rulemaking to Establish Emission Standards and Corporate Average Fuel Economy Standards Environmental Protection Agency Light-Duty Vehicle Greenhouse Gas) 40 CFR Parts 86 and 600; Department of Transportation 49 CFR Parts 531,633, 537, et al., November 27, 2009; Comments of Consumer Groups: Docket Nos. EPA-HQ-OAR-2010-0799; FRL-9495-2, NHTSA–2010–0131, February 13, 2012.

[6] Mark Cooper, 2017, *Pocketbook Savings, Macroeconomic Growth and Other Public Benefits of Energy Efficiency Appliance Standards: Benefit-Cost Analysis of Four Decades of Rules Shows they have Delivered Trillions of Dollars of Economic Value to Consumer and the Nation*; Jack Gillis and Richard Eckman, *An Analysis of Consumer Savings and Automaker Progress on the Road to 2025 CAFE Standards*, attached to Comments of the Consumer Federation of America, in the Matter of Transportation Infrastructure: Notice of Review of Policy, Guidance and Regulation, Before the Department of Transportation Docket No. OST-2017-0057, July 24, 2017.

the National Program adopted just five years ago. The empirical record is substantial and, in many respects complete. Therefore, we believe it is important to draw conclusions based on that record in outlining the considerations that should be included in the EIS.

FINDINGS AND RECOMMENDATIONS

The congressionally mandated goal of the law governing the Corporate Average Fuel Economy Program is maximum feasible fuel economy standards as embodied in the Energy Policy and Conservation Act of 1975 (EPCA). That goal was reaffirmed and strengthened less than ten years ago in the Energy Independence and Security Act (EISA). The guidance offered by executive orders and OMB circulars for the past twenty years have emphasized maximum net benefits. The principles and methods were described in detail in the Bush Administration.

While these clear goals are balanced by other concerns, such as technical feasibility and economic practicability, the extensive evidence in the record shows that the standards in place are quite moderate, well-within the bounds of feasibility and practicability. Thus, based on the extensive record established at the agencies since EISA reformed and rebooted the CAFE program, these comments show that there is no justification to roll back the 2021 fuel economy or carbon emission standards for light duty vehicles, or modify the 2022-2025 standards. The current standards comply with the laws setting goals and faithfully implement the controlling executive branch guidance.

These comments are divided into four sections.

Section I discusses the laws governing agency action which require maximum energy savings and greenhouse gas reductions, Executive Orders and OMB circulars that still guide agency actions advocating maximum net benefits to society. The laws and guidance recognize that there are economic, technological and social balancing factors that should be considered in setting standards. The Administrative Procedure Act requires that agency actions are not arbitrary and capricious, do not lack justification or run counter to critical evidence in the record, particularly when the agency is changing its mind. A freeze or rollback in the standards would be contrary to current law and practice.

Section II begins with a review of the economic analysis on which the standards proposed in the National Program were based. It shows that the standards adopted by the National Program took the balancing factors into account and proposed standards that fell far short of either maximum feasible or maximum net benefit levels. An empirical discussion of the benefit cost analysis shows:

- the National Program standards have a benefit cost ratio greater than 6-to 1 and
- a breakeven cost of gasoline of $0.75 per gallon, which means that as long as gasoline stays above $0.75 per gallon, the standards are justified.

Thus, the record and current economic conditions suggest that, if the agencies want to change the levels, they should be raised, not lowered. Rolling back the 2021 standards and freezing the 2022-2025 standards would:

- Rob consumers of net savings of over $4,500 per household,

- Prevent a reduction in operating costs of $150 billion,
- Undermine $150 billion of macroeconomic growth, and
- Forego over $50 billion in environmental, health and other benefits.
- The total of $350 billion of benefits foregone would yield automaker savings of only $50 billion., for a benefit cost ratio of -6 to 1.

Section III examines several aspects of the proposed standards from the producer point of view. The empirical evidence shows that the standards are readily achievable for a variety of reasons.

- Consistent with the long history of fuel economy standards, automakers' efforts to implement the standards show that the cost of compliance has been below the NHTSA/EPA projections and far below inflated industry estimates.
- The standards are well within the technological frontier of the industry as analyzed not only by NHTSA/EPA, but also MIT and the National Academy of Sciences.
- The rate of improvement is consistent with historical periods where standards were implemented.
- The standards are consistent with (or slightly below) other advanced industrial nations.
- Fuel economy pays for itself in a market where it has taken on much greater importance to consumers. As a result, fuel economy sells.
- With a gradual, but steady approach, developing new models to meet the standards and consumer needs has been evident in the marketplace and automakers have been complying with the standards.

Section IV presents brief observations on the reasons that the reboot of CAFE signed into law by President Bush and implemented through the National Program has worked well, while coordinating the approach to improving fuel economy and the reduction of carbon emissions between EPA, NHTSA and the California Resources Board (CARB). The National Program is a perfect example of "command-but-not control" regulation that has been evolving under Executive Orders and OMB guidance written by Republican and Democratic presidents over almost four decades. The CAFE standards set by the National Program are long-term, product neutral, technology-neutral, responsive to industry needs, responsive to consumer needs, and procompetitive.

We have also shown that it is a good example of American Federalism at its best, with California leading over a dozen other states in pursuit of more effective standards.[7]

[7] Statement of Dr. Mark Cooper on American Federalism At Its Best: Why The Environmental Protection Agency Should Grant A Clean Air Act Waiver To The Clean Cars Program, to the Environmental Protection Agency, Pubic Hearing, September 19, 2012

I. THE LEGAL AND ANALYTIC TERRAIN OF FUEL ECONOMY RULEMAKING

Laws Governing Agency Action

As we pointed out in our earlier comments to the Department of Transportation with regard to its request for information in relation to its infrastructure policy implementation, federal agencies cannot change or repeal three sets of laws: the laws of policy, physics and economics. That observation is even more relevant with respect to the setting of fuel economy standards because NHTSA must write an environmental impact statement and this process has included cooperating with the EPA and the CARB.

The laws of policy are set by Congress to state the goals and identify the considerations that agencies must take into account in working toward those goals. Congress generally recognizes the complexity of writing regulations in the modern economy, so it leaves discretion to the expert agency, giving guidance about what is to be considered.

Of course, Congress can change the goals and guidance (with the agreement of the executive branch), but, like the agency, it cannot repeal or change the laws of physics or economics. As we pointed out in our earlier comments, the laws of physics dictate that rules governing fuel economy are, necessarily and inevitably, environmental rules that govern emissions of pollutants. It is the case that the reduction in the use of fuel is linked directly to a reduction in emissions.

The laws of economics come into play in two respects.

First, energy efficiency, in general, and improving fuel economy, in particular, tend to be very low cost (frequently the least cost) ways to lower emissions. To the extent that congressional or the executive branch guidance mandates least-cost, maximum net benefit approaches to lowering fuel consumption, it also mandates least-cost, maximum net benefit approaches to environmental protection.

Second, when fuel economy standards yield a net benefit to consumers by lowering operating costs more than the increase in technology costs, it increases the disposable income in consumer pocketbooks. Consumers spend that disposable income on other goods and services. This "respending" has a multiplier effect, causing the economy to grow. The macroeconomic benefits are an inevitable result of fuel economy standards.

Over the past forty years, guidance from OMB has tried to help the agencies navigate the complex terrain of rulemaking. President Reagan's order defined the overall structure of the analysis. Presidents Clinton, Bush and Obama refined that approach. OMB guidance and recent notices from the agencies recognize that the previous executive orders are still in force, as are the agency specific statutes that dictate goals and considerations.

The Complex Terrain of Fuel Economy Standards Setting

As acknowledged in the EIS scoping notice, NHTSA faces two sources of complexity in setting a standard. The law governing the fuel economy standards is focused on "maximum feasible" average fuel economy. In amending the underlying statute (EPCA) with EISA, the

Congress emphasized the energy saving goal by referring to energy independence and security. Because of the need to consider environmental impacts, take other regulations into account and the agreement to cooperate with EPA, a second set of goals and considerations come into play, the Clean Air Act, see Table 1.

TABLE 1: PRIMARY GOALS AND BALANCING FACTORS IN FUEL ECONOMY STANDARD SETTING

GOALS AND CONSIDERATIONS	NHTSA (EPCA, EISA)	NATIONAL PROGRAM
OVERARCHING GOAL	Maximum feasible average fuel economy Need to conserve petroleum addressing energy independence and security by reducing U.S. reliance on foreign oil	Maximum feasible energy savings and reduction in emissions
BALANCING FACTOR		
	Technological feasibility	feasible
	Economic practicability	practicable
	Consider other standards	cost-effective

As we noted in our 2009 comments,[8] EPA's goals are expressed in terms of maximum reduction in emissions to protect the public health and welfare. The other considerations that EPA must take into account in terms of technology and economic analysis are less constraining. Nevertheless, the goals are very similar, particularly given the environmental and economic convergence (identicality) of the physical relationship between fuel use and emissions. The California Air Resources Board, which joined in the cooperative effort, is charged with maximum feasible reduction in emissions that are cost-effective.[9] The National Program effectively harmonized the different goals into a consensus within the legal constraints, a harmonization that enjoyed widespread support.

IDENTIFYING THE RANGE OF OPTIONS

In the scoping EIS notice, NHTSA identified a series of options that would bracket the possible levels it could choose within the confines of the law. Table 2 shows three potential approaches to standard setting defined by language in the law and guidance. For each we offer a "formal" economic definition in terms of the benefit cost ratio it would reflect. This is consistent with the more detailed Bush administration guidance in OMB Circular A-4. It is also consistent with the NHTSA/EPA analysis of the National Program, where multiple scenarios were analyzed.

[8] Comments of the Consumer Federation of America, Proposed Rulemaking to Establish Emission Standards and Corporate Average Fuel Economy Standards Environmental Protection Agency Light-Duty Vehicle Greenhouse Gas) 40 CFR Parts 86 and 600; Department of Transportation 49 CFR Parts 531,633, 537, et al., November 27, 2009, pp. 2-3.

[9] Environmental Protection Agency, California Air Resources Board, National Highway Traffic Safety Administration, *Draft Technical Assessment Report: Midterm Evaluation of Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2022-2025*, July 2016, p. 1-3.

TABLE 2: EXPRESSING STANDARDS IN TERMS OF MARGINAL AND TOTAL COST BENEFIT PRINCIPLES

OBJECTIVE	STANDARD	COST CHARACTERISTICS: Move standards to the point where
Baseline	No Action	
Emphasize Economic Practicability	Maximum Net Benefit	Marginal Benefit = Marginal Cost
	Maximum Benefit @ zero cost	Total Benefit = Total Cost
Identify Limit of Technology limit	Incur costs to achieve maximum goal	Marginal benefit = 0 All technologies, regardless of cost

The starting point for the rulemaking must be the vast body of evidence compiled in the half decade collaboration of NHTSA, EPA and CARB. The fact that a mid-term review has been called for does not diminish the importance of the record that already exists before the agency. Indeed, the fact that the three agencies collaborated fully on the Technical Assessment Report attests to the productive nature of the collaboration. The fact that only two of the three agencies reached a final determination, while the third was legally obligated to conduct a *de novo* proceeding does not detract from the weight of that evidence or its interpretation.

The evidentiary record continues to strongly support the Final Determination reached by EPA and CARB. If anything, the record supports a strengthening, not weakening of the standards for both benefit and cost (demand and supply side) reasons. Because that record is still operative and we have made these points throughout the proceedings that fall under the rubric of the "National Program," we begin these comments by bringing forward our initial discussions of these key points. Our recent analyses show that these arguments were not only correct when first presented but economics, technology and the industry have moved in a direction that fully supports and strengthens those initial analyses.

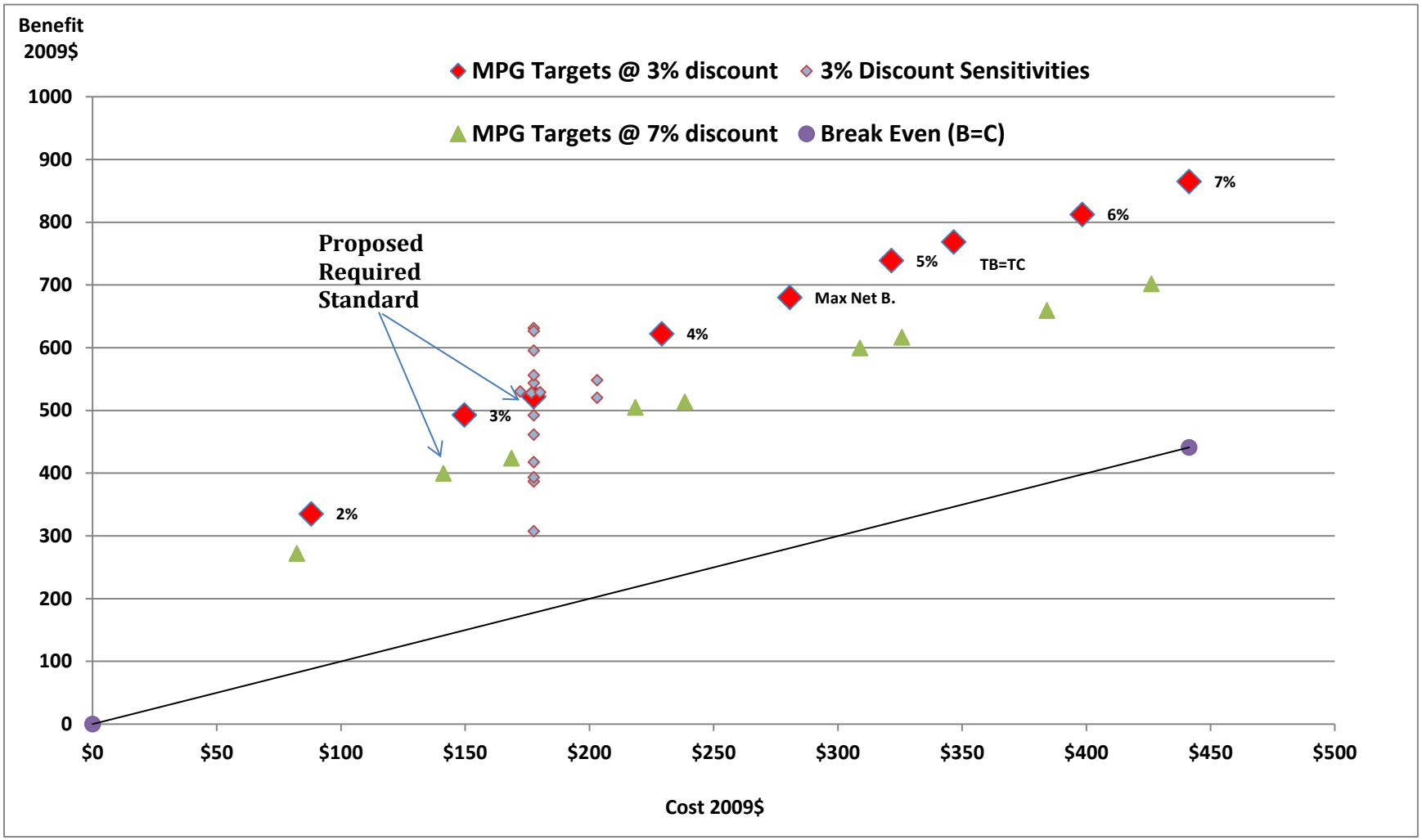
II. BASED ON THE EMPIRICAL RECORD: A FREEZE OR ROLLBACK OF THE STANDARDS FOR MODEL YEARS 2021-2025 IS NOT JUSTIFIED[10]

CURRENT STANDARDS ARE WELL-SHORT OF MAXIMUM NET BENEFITS

Figure 1 presents the full range of cases and scenarios considered by the agencies in setting the standards under the National Program. It shows each target level evaluated at discount rates of 3% and 7%. It plots the costs (on the x-axis) and the benefits (on the y-axis) for the eight different target levels and the results of the sensitivity analyses. It also shows the analyses that were conducted at the 3% discount rate. In all, there are 28 cases/scenarios shown. The figure also includes a break even line. If a case/scenario falls above the line, the benefits exceed the costs.

[10] Excerpt from Comments of Consumer Groups: Docket Nos. EPA-HQ-OAR-2010-0799; FRL-9495-2, NHTSA–2010–0131, February 13, 2012

FIGURE 1: NHTSA NATIONAL COST BENEFIT ANALYSIS SHOWS THE 2025 STANDARD IS A MODERATE, MID-RANGE TARGET



Source: Office of Regulatory Analysis and Evaluation National Center for Statistics and Analysis, *Preliminary Regulatory Impact Analysis Corporate Average Fuel Economy for MY 2017-MY 2025, Passenger Cars and Light Trucks*, November 2011, Table 2 and Table X-12c.

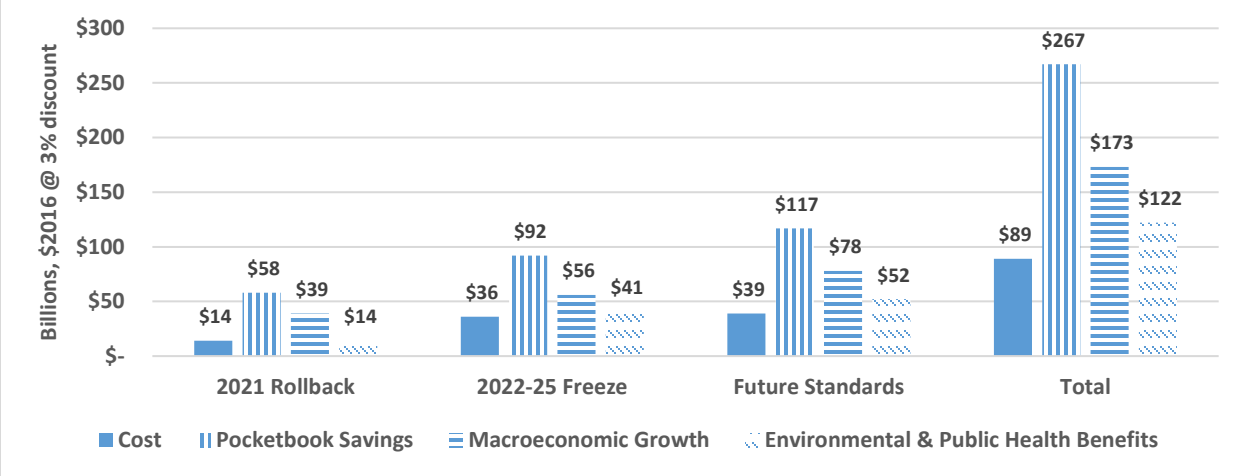
Figure 1 makes it clear that the benefits are likely to exceed the costs by a wide margin. Even under the most extreme assumption – i.e. that consumer pocketbook savings are only one-quarter of the base case calculation, the benefits are almost twice as large as the costs at the 3% discount rate.[11] The standards are well below the maximum net benefit level.

The agencies presented over two dozen cases and scenarios to assess the level of confidence that policymakers can have in the conclusion of the base case cost benefit analysis. In traditional agency fashion, they present a Monte Carlo simulation of expected outcomes under the full array of alternative assumptions. They conclude that there is a high probability that the outcome of the policy will be positive. The probability that net benefits will exceed zero between now and the mid-term review, is 95 percent or more for cars and at least 99 percent for trucks.

A FREEZE AND ROLLBACK WILL ROB CONSUMERS AND THE NATION OF HUNDREDS OF BILLIONS OF DOLLARS IN POCKETBOOK SAVINGS, ECONOMIC GROWTH AND OTHER BENEFITS[12]

Our analysis (summarized in Figure 2) shows that a rollback of the 2021 standards and a freeze of the 2022-2025 standards that are being contemplated by NHTSA/EPA would be disastrous. A rollback and freeze would:

FIGURE 2: BENEFIT COST ANALYSIS OF ROLLBACK AND FREEZE OF FUEL ECONOMY STANDARD: MODEL YEARS 2021-2025



Mark Cooper, 2017, Pocketbook Savings, Macroeconomic Growth and Other Public Benefits of Energy Efficiency Appliance Standards: Benefit-Cost Analysis of Four Decades of Rules Shows They Have Delivered Trillions of Dollars of Economic Value to Consumer and the Nation, Consumer Federation of America, July 2017, described the methodology. These are 2016 dollars discounted at 3%. Macroeconomic multiplier =1 x net pocketbook benefits.

- rob consumers of about $150 billion in savings;
- deny the economy almost $100 billion in economic growth;

[11] While OMB recommends the use of discount rates of 3% and 7%, it portrays the 3% rate as the consumer oriented rate. Moreover, OMB guidance recognizes that a lower discount rate may be more appropriate for standards that involve long term (intergenerational) impacts. The OMB guidance suggest discount rates as low as 1%. Fuel economy standards have this long term impact, being one of the largest sources of greenhouse gas emissions. A 3% discount rate is a middle rate in the regulatory analysis. NHTSA should use three discount rates, 1%, 3% and 7%.

[12] Excerpt from Mark Cooper, 2017, Pocketbook Savings, Macroeconomic Growth and Other Public Benefits of Energy Efficiency Appliance Standards: Benefit-Cost Analysis of Four Decades of Rules Shows They Have Delivered Trillions of Dollars of Economic Value to Consumer and the Nation.

- forego over $50 billion of environmental, public health and other benefits, while
- saving automakers only $50 billion.
- In other words, a rollback and freeze have a negative benefit cost ratio with foregone benefits six times cost savings.

EPA estimates the savings at $1620 per vehicle, over the life of the vehicle. Since the average number of vehicles per household, among households that own at least one vehicle, is just over two,[13] the savings per household would be $3240. However, EPA excludes the consumer welfare benefits of increased fuel consumption (the rebound effect) in its estimate of pocketbook benefits. We have argued that, while this is correct from the point of view of counting energy consumption or emissions reductions, it is incorrect from the point of view of consumer economic welfare. The decision to spend some of the pocketbook savings on fuel represents a net increase in consumer welfare. The calculation of consumer pocketbook savings also does not take into account the declining cost of improving fuel economy.

- Thus a conservative estimate of household pocketbook savings lost as a result of a freeze of standards at the 2021 level is well above $3,500.
- The consumer pocketbook harm would be about $4,500 if the 2021 level is rolled back to 2020.[14]

Future savings that would be undermined or jeopardized by a freeze and rollback would:

- push the total benefits foregone to well over $500 billion,
- while saving automakers less than $90 billion.[15]

Even though we find "willingness to pay" studies conceptually and empirically flawed, our review of the most recent willingness to pay analysis of fuel economy shows that the current levels of standards are cost justified on the basis of consumer pocketbook savings alone, which means that over $300 billion of true externalities – macroeconomic growth, environmental, health, and other public benefits are essentially "free."

- Our "breakeven" analysis shows that, the current levels of standards are justified as long as the price of gasoline stays above $0.75 per gallon.

Similar threats to reconsider fuel economy standards for heavy duty trucks are equally problematic from the consumer point of view because, as we have shown, consumers pay for energy consumption of commercial/industrial vehicles in the costs of goods and services that must use transportation services. Undermining these standards would:

[13] U.S. Department of Transportation, Bureau of Transportation Equipment, *Household, Individual, and Vehicle Characteristics*

[14] This estimate is based on the physical quantity of oil saved by the MY 2021 standard compared to the total oil saved by the MY 2022-2025 standards.

[15] These are the far future benefits as described in Mark Cooper, 2017, *Pocketbook Savings, Macroeconomic Growth and Other Public Benefits of Energy Efficiency Appliance Standards: Benefit-Cost Analysis of Four Decades of Rules Shows They Have Delivered Trillions of Dollars of Economic Value to Consumer and the Nation,* July 2017. Per the methodology described therein, these are 2016 dollars discounted at 3%. Macroeconomic multiplier =1 x net pocketbook benefits.

- rob consumers of another $500 billion,
- while saving truck manufacturers $50 billion.
- Because the benefit cost ratio is so high for heavy duty vehicles, the price of diesel necessary to justify the current standards (i.e. the breakeven level) would be only $0.33 per gallon.

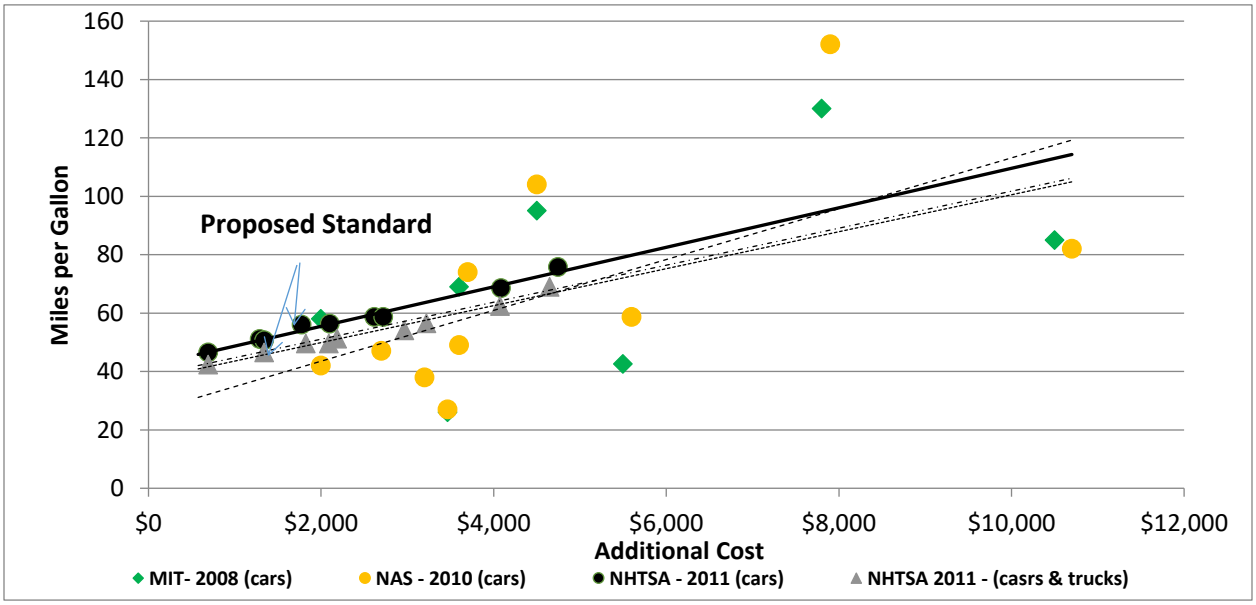
Taken together, the freeze and roll back of fuel economy standards for all vehicles administered by NHTSA would jeopardize $1 trillion dollars of benefits, a sum that is almost seven times as large as the savings vehicle manufacturers would realize. Half of those savings would come out of consumer pocketbooks directly through household expenditures on gasoline, while the other half is borne indirectly through an increase in the cost of goods and services that utilize commercial vehicles.

III. Declining Cost and Expanding Options Have Led to Easy and Early Supply-Side Compliance

The Proposed Standards are Well Within the Reach of The Industry

Figure 3 shows that the proposed standards are moderate from other points of view. It plots the cost and mileage from a number of studies. It shows that the proposed standards are moderate from two points of view.

Figure 3: The 2025 Standard is Well Within The Technology Frontier

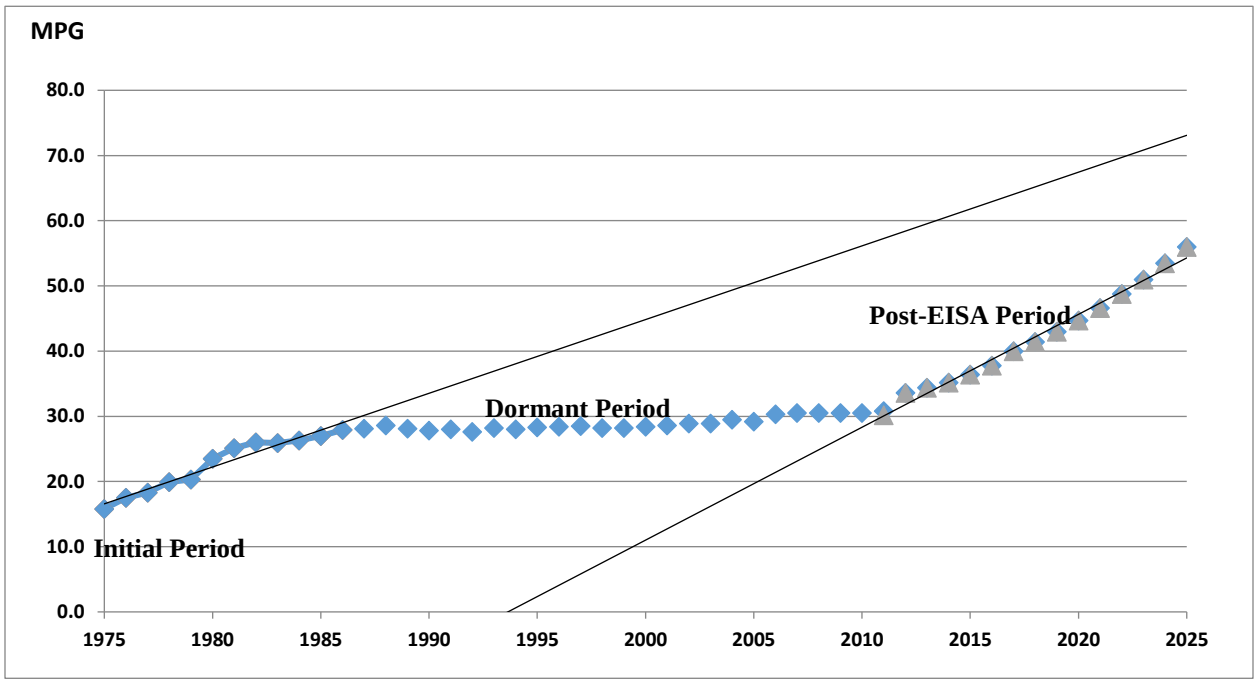


Sources: MIT, 2008; Laboratory of Energy and the Environment, On the Road in 2035: Reducing Transportation's Petroleum Consumption and GHG Emissions Cambridge: July, 2008), Tables 7 and 8; NAS -2010, National Research Council of the National Academy of Science, America's Energy Future (Washington, D.C.: 2009), Tables 4.3, 4.4; NHTSA-EPA 2011;Office of Regulatory Analysis and Evaluation National Center for Statistics and Analysis, *Preliminary Regulatory Impact Analysis, Corporate Average Fuel Economy for MY 2017-MY 2025 , Passenger Cars and Light Trucks*, November 2011, Table 2 and Tables 3, 5.

First, the costs curves are consistent with the level of cost estimated by others with similar levels of fuel savings. Second, there are much higher levels of fuel savings possible, at higher costs. The proposed standards are in the middle of the pack in the lower end of the range.

There are two historical perspectives that also suggest the proposed standards are moderate and achievable. As shown in Figure 4, the current proposal not only restarted the process just about as quickly as the law allowed, but it sets the U.S. on a path to doubling the fuel economy of new vehicles that is consistent with what was accomplished in the first decade of the program.

FIGURE 4: U.S. MPG HISTORICAL AND PROPOSED: THE RATE OF INCREASE IS STEADY AND CONSISTENT WITH PAST EFFORTS TO IMPROVE FUEL ECONOMY



Sources: EIA, Light Duty Automotive Technology, Carbon dioxide Emissions, and Fuel Economy Trends: 1975 Through 2009, November 2009,Table; Office of Regulatory Analysis and Evaluation, Regulatory Impact Analysis, Corporate Average Fuel Economy,2011, 2012-2016, 2017-2025.

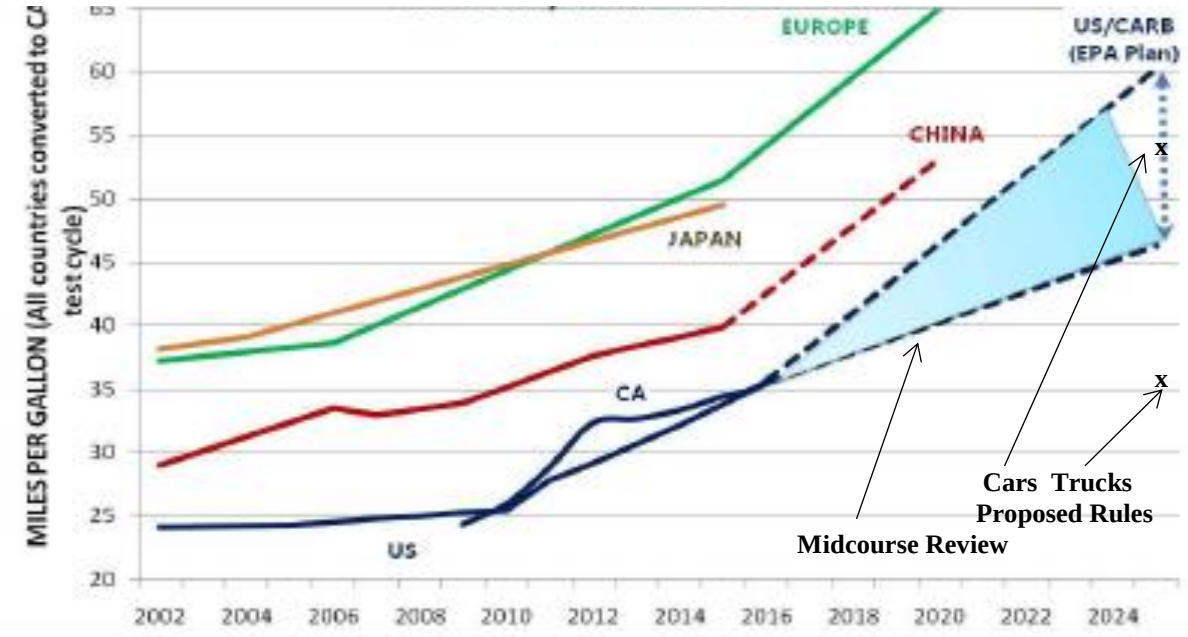
Globalization of the auto industry means it is no longer possible to be a successful automaker without being able to compete globally. Figure 5 shows the proposed standards in relation to the standards in place in other automobile producing and consuming nations. The proposed standard brings U.S. standards up to international levels.

The standards also reduce the supply-side risk of introducing new fuel savings technologies and triggers competition around fuel economy. Automakers know they can sell quality. As shown in Figure 6, according to statistics compiled by the Bureau of Labor Statistics, which is responsible for the Producer Price Index,

- over the past fifteen years, automakers have added three times as much value (and cost) with optional improvements in quality than with mandatory (safety and environmental) improvements.

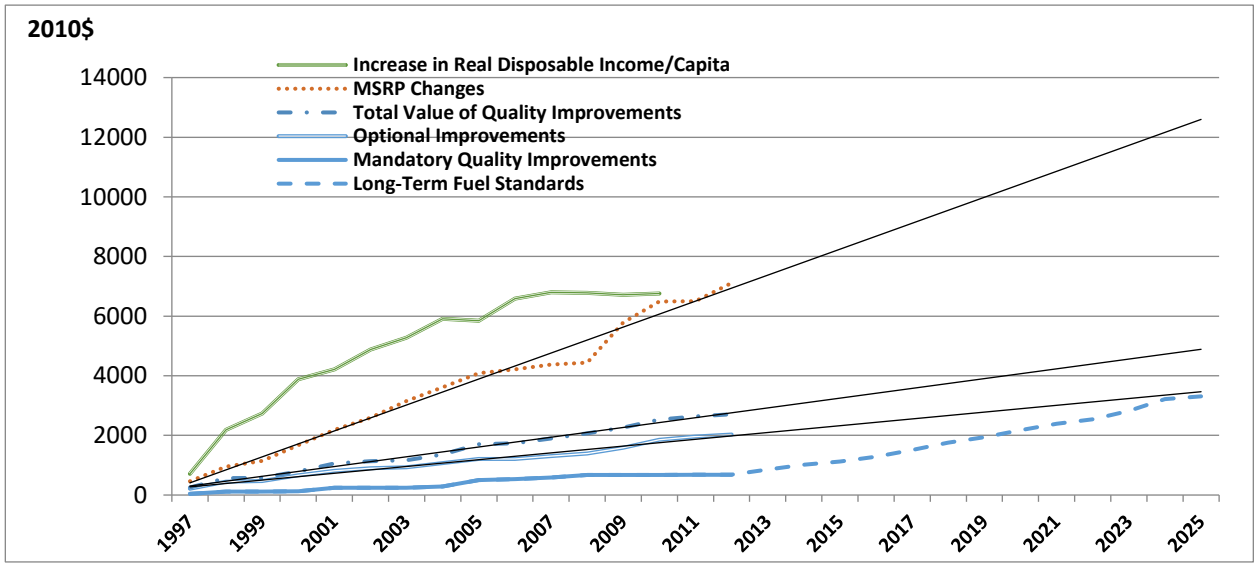
- The overall increase in MSRP tends to track closely to the increase in real disposable income.

FIGURE 5: COMPARISON OF PROPOSED U.S. AND INTERNATIONAL STANDARDS



Source: Feng An, Robert Early and Lucia Green-Weiskel, Global Overview of Fuel Economy and Motor Vehicle Emission Standards: Policy Options and Perspectives for International Cooperation (The innovations Center for Energy and Transportation, United Nations Commission on Sustainable Development, May 2011, Background Paper No. 3).

FIGURE 6: THE INDUSTRY ROUTINELY MAKES COSTLY QUALITY IMPROVEMENTS (Bureau of Labor Statistics Analysis of Quality Changes for Vehicles)



Source: Bureau of Labor Statistics, Quality Changes for Motor Vehicles, various years; Consumer Price Index data base; Sources: Office of Regulatory Analysis and Evaluation, *Regulatory Impact Analysis, Corporate Average Fuel Economy*, 2011, 2012-2016, 2017-2025.

- The cost increases that the long-term standards will require over the next 15 years are well below the cost of quality improvements over the past 15 years.
- Unlike most other quality additions, fuel economy improvements deliver pocketbook savings to consumers.
- In today's market, fuel economy is a major determinant of vehicle quality that the market can easily absorb.
- Automakers adjust MSRP and discounts and auto financing in response to much larger changes in affordability.

RECENT EVIDENCE ON AUTOMAKER COMPLIANCE

Our most recent analysis of new models introduced since the start of the National Program confirms these earlier findings. For this analysis, we compared the cost and fuel economy of 19 of the 27 "all-new" 2017 models which had a 2011 version, the year before the current standard was put in place.[16] Comparing "new" models is particularly revealing because it shows what automakers can do with advance notice and steady, long-term increases in the standards. These 19 models included 79 different EPA designated engine/drive train/transmission/MPG configurations (or what are called "trims").

Improving Fuel Economy Pays for Itself by Lowering the Total Cost of Driving

As shown in Table 3, when we compared the cost difference between the "all-new" 2017 models and their 2011 version, after factoring in inflation, 21 or 27% actually went down in price, yet every one of these vehicles saw a 1 to 10 MPG increase.

Annual vehicle price increases (less inflation) cover many different improvements such as new safety technology, convenience items, design changes, as well as upgraded fuel economy technology. By separating out the cost of fuel economy improvements from these other costs, we were able to get a more accurate look at the impact of the standards on consumer pocketbooks. Overall, for 74 of the 79 vehicles (94%), the added cost of new fuel efficient technology was far exceeded by the resulting fuel cost savings over the first 5 years of ownership.

Fuel Economy Sells

SUVs, pickups and crossovers, whose miles per gallon increased by over 10% between 2011 to 2016, had a 59% increase in sales. On the other hand, those same vehicle types with less than a 10% increase in MPGs from 2011 to 2016 experienced only a 41% increase in sales, almost 20% less. (Table 4) This analysis completely debunks automaker claims that consumers don't value good gas mileage. Clearly, the more improvement in MPG, the better the sales.

[16] There were 27 all new vehicles introduced in 2017, 19 of them had a previous version available in 2011. These 19 vehicles were the ones we included in this analysis.

TABLE 3: 2011 VS. 2017 "ALL-NEW" PRICE COMPARISON (ACCOUNTING FOR INFLATION)		
	"All-New" Trims[123]	**Percent of "All-New Trims"**
Total "All-New" Vehicles with 2011 Counterpart	79	100%
2011 Vehicles Which Were LESS Expensive in 2017 Dollars and Had Higher MPG	21	27%
2011 Vehicles Which Were MORE Expensive in 2017, Whose Fuel[4] Savings Offset the Entire Price Increase	12	15%
2011 Vehicles Which Were MORE Expensive in 2017, Whose Fuel[4] Savings Offset the $100/MPG Cost of Fuel Economy Technology[5]	41	52%
2011 Vehicles Which Were MORE Expensive in 2017, Whose Fuel Economy Stayed the Same or Decreased	5	6%

Mileage figures from EPA and Sales from Auto News, [1]Inflation was calculated using BLS average inflation numbers from 2011-2016; [2]Average "All-New" Vehicle Price from the New Car Cost Guide; [3]Fuel Economy of "All-New" Vehicles based on EPA combined estimate;. [4] Gas costs from AAA $2.27 (7/19/17) and driving an average of 14,000 miles per year; [5] CFA bases its estimate of the cost of fuel economy on a review of the literature including historical, market-based and engineering studies, as described in Appendix B: Jack Gillis and Richard Eckman, An Analysis of Consumer Savings and Automaker Progress on the Road to 2025 CAFE Standards, attached to Comments of the Consumer Federation of America, in the Matter of Transportation Infrastructure: Notice of Review of Policy, Guidance and Regulation, before the Department of Transportation Docket No. OST-2017-0057, July 24, 2017.

TABLE 4: SUVS, CROSSOVERS, LIGHT TRUCKS - 2011-2016					
Percent Increase in MPG 2011 - 2016	**Number of Vehicles**	**2011 Average Sales Per Model**	**2016 Average Sales Per Model**	**Average Change in Sales (Units)**	**2011 - 2016 Average % Change in Sales**
10% or More	29	95,143	150,828	55,685	59%
Under 10%	37	63,423	89,696	26,273	41%
Mileage figures from EPA and Sales from Auto News					

Automakers are Readily Complying with the Standards

In comparing the CAFE compliance of "all-new" models introduced in 2015, 2016 and 2017, there was a significantly higher percentage of CAFE-compliant vehicles in 2017. In fact, 70 percent of the "all-new" 2017 vehicles had a CAFE-compliant trim, compared to 41 percent of the "all-new" 2015 vehicles (Table 5). Particularly noteworthy was the fact that 78% of the

"all-new" light duty trucks had a CAFE compliant trim for 2017. Interestingly, percentage-wise, trucks beat cars for CAFE compliance in 2017.

TABLE 5: PERCENTAGE OF CAFE COMPLIANT VEHICLES AMONG "ALL-NEW" MODELS 2015-2017			
	2015	**2016**	**2017**
Total "All-New" Vehicles	34	32	27
Total CAFE Compliant	14 (41%)	19 (60%)	19 (70%)
Percentage of CAFE Compliant Vehicles Among "All-New" Model Cars 2015-2017			
	2015	**2016**	**2017**
Total "All-New" Cars	19	19	18
Total CAFE Compliant	8 (42%)	15 (80%)	12 (67%)
Percentage of CAFE Compliant Vehicles Among "All-New" Model Trucks 2015-2017			
	2015	**2016**	**2017**
Total "All-New" Trucks	15	13	9
Total CAFE Compliant	6 (40%)	5 (40%)	7 (78%)

In reviewing the "all-new" vehicles, we also determined how many years into the future each model would comply with the *gradual increase* in CAFE requirements. Current vehicles that meet CAFE requirements for future years indicate that manufacturers are actually "ahead of the game" in terms of compliance.

Table 6 shows that 70% (19) of the 27 "all-new" vehicles for 2017 had models which met, at the minimum, the 2017 CAFE standard. In fact, from 2015-2017, the majority of these compliant cars actually exceeded the minimums required for that year. The figure also shows that 6 of the 2017 vehicles are already CAFE compliant with the 2025 standard—a record number.

TABLE 6: AMONG THE "ALL-NEW" VEHICLES–HOW MANY WILL CONTINUE THEIR CAFE COMPLIANCE UNTIL:											
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
2015	14	10 (71%)	8 (57%)	6 (43%)	5 (36%)	3 (21%)	3 (21%)	2 (14%)	0	0	0
2016	-	19	18 (95%)	18 (95%)	15 (79%)	14 (74%)	11 (58%)	7 (37%)	6 (32%)	4 (21%)	2 (11%)
2017	-	-	19	14 (74%)	11 (58%)	10 (53%)	8 (42%)	8 (42%)	7 (37%)	6 (32%)	6 (32%)

IV. CONCLUSION

The substantial empirical record before the agencies supports continuing the National Program at the levels established in the 2012 final rule. If anything, the evidence suggests a strengthening, not weakening of the standards. A rollback and freeze are illegal and uneconomic, likely costing the nation $500 billion dollars. The damage done to the process of standard setting would double the losses.

The National Program has been extremely successful because it implements the changes enacted in EISA in a manner that harnesses market forces to yield consumer pocketbook savings, macroeconomic growth and other public benefits. This is exactly the way the executive branch orders and OMB circulars have guided federal agencies. It takes a "command-but-not-control" approach to build a performance standards that embodies six principles, which we have identified in earlier analysis, as summarized in Table 7.

TABLE 7: ATTRIBUTES OF EFFECTIVE, COMMAND BUT NOT CONTROL PERFORMANCE STANDARDS

- **Long-Term:** Setting an increasingly rigorous standard over a number of years that covers several redesign periods fosters and supports a long-term perspective. The long term view lowers the risk and allows producers to retool their plants and provides time to re-educate the consumer.
- **Product Neutral:** Attribute based standards accommodate consumer preferences and allow producers flexibility in meeting the overall standard.
- **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 choices at that lowest cost possible, given the level of the standard.
- **Responsive to industry needs:** The standards must recognize the need to keep the target levels in touch with reality. The goals should be progressive and moderately aggressive, set at a level that is clearly beneficial and achievable.
- **Responsive to consumer needs:** The approach to standards should be consumer-friendly and facilitate compliance. The attribute-based approach ensures that the standards do not require radical changes in the available products or the product features that will be available to consumers.
- **Procompetitive:** All of the above characteristics make the standards pro-competitive. Producers have strong incentives to compete around the standard to achieve them in the least cost manner, while targeting the market segments they prefer to serve.

Sources: Testimony of Dr. Mark Cooper, on "Midterm Review and an Update on the Corporate Average Fuel Economy Program and Greenhouse Gas Emissions Standards for Motor Vehicles," Before the *Committee on Energy and Commerce Subcommittee on Commerce, Manufacturing, and Trade Subcommittee on Energy and Power,* U.S. House of Representatives, September 22, 2016.

The proposed standards recognize the need to keep in touch with reality in several important ways. The standards do not require dramatic shifts in power train technologies or reductions in weight and offer flexibility and incentives for new technologies, and include a midterm review, which was properly completed by two of the three coordinating agencies. The setting of a coordinated national standard that lays out a steady rate of increase over a long time period gives consumers and the industry certainty and time to adapt to change.

The approach to setting standards which has been undertaken is consumer-friendly and facilitates automaker compliance. The attribute-based approach ensures that the standards do not require radical changes in the types or size of vehicles consumers drive; so, the full range of choices will be available to consumers.

In testimony before the U.S. House of Representatives,[17] we pointed to that positive results for consumers and the fact that automakers are not only complying with the early standards, but over-complying, as indicators of the success of the National Program. We attribute this success to the fact that it is driven by the careful design of the standards and the rational response of the automakers[18].

- As we noted and advocated, the original standards were responsible, and did not seek to push fuel economy/pollution reduction to the limit of technology. The original goals were "inframarginal" with respect to the capabilities of the industry.
- They remain inframarginal, with many combinations of technologies available to comply.
- While the biggest potential game changer in terms of compliance – electric vehicles – are not necessary to meet the standards, the evidence continues to grow that they could play a much larger part in the vehicle fleet.[19]

As our historical analysis showed, the industry has responded as market theory and past experience predicts, a process that is observable at both the macro and micro levels.

- The industry has found lower cost ways of complying with the standards than originally thought.
- The mix of technologies likely to be chosen has shifted due to different speeds of development in knowledge and cost.
- One of the most popular approaches to meeting the standards, the Atkinson-2 engine was not even considered in the initial analysis and would never have been applied widely, but for the standards.
- There is no evidence that the costs of compliance are disrupting the auto market in any way and consumers are having no difficulty in finding the vehicles that they prefer at

[17] *Testimony of Dr. Mark Cooper on Midterm Review and an Update on the Corporate Average Fuel Economy Program and Greenhouse Gas Emissions Standards for Motor Vehicles* Before the Committee on Energy and Commerce Subcommittee on Commerce, Manufacturing, and Trade Subcommittee on Energy and Power U.S. House of Representatives, September 22, 2016

[18] See CFA has analyzed the ability of the industry to achieve the standards. Mark Cooper and Jack Gillis, *A Key Step to Ending America's Oil Addiction: Policymakers, Consumers and Automakers are Shifting, New Vehicles to Higher Fuel Economy*, July 2012; S*tatement of Dr. Mark Cooper, Director of Research. Consumer Federation of America, "Will They or Won't They? Consumer Adoption of High Fuel Economy Vehicles, 1999-2012, and the Role of the 2025 Standards in Speeding Diffusion of Advanced Technology*, Panel on Consumer Acceptance of Advanced Technology Vehicles Mobile Sources Technical Review Subcommittee, December 13, 2012; Jack Gillis, Mark Cooper, 2013, *On the Road to 54 Mpg: A Progress Report on Achievability*, April; *For First Time Over 50 Percent of Current Year Models Get More Than 23 MPG; Over 11 Percent Get 30 MPG, Carmakers are on the road to 54.5 by 2025*, April 29, 2014; 2015 *Cars Gain MPGSs. CAFE Goals In Reach If Gains Continue: However, New Data Shows Some Companies Are Backsliding*, May 19; Mark Cooper, 2015, *Staying on the Road to 54.5 Mpg by 2025: Riding the Gasoline Roller Coaster.*

[19] We have monitored the development of the EV market. See: *Knowledge Affects Consumer Interest in EVs, New EVs Guide to Address Info Gap: New Survey Shows Nearly One-Third Are Willing to Consider Buying an EV for their Next Car*, October 29, 2015*; New Data Shows Consumer Interest in Electric Vehicles Is Growing: Prices Are Down; Number of Models Is Up; Free New Guide to EVs Available as Year over Year Sales Increase*, September 19, 2016**.**

prices that are affordable.

In closing, a rollback of the MY 2021 fuel economy standard and/or a freeze of the MY 2022-2025 standards is simply not justified. The voluminous record has already established that the benefits far outweigh the costs; consumers and the economy would be greatly harmed if the standards were to be pulled back. Consumers value fuel economy and the automakers have shown they can meet the standards.