

The Secretary of Transportation and the Administrator of EPA signed the following notice on November 30, 2010 and the agencies are submitting it for publication in the Federal Register. While we have taken steps to ensure the accuracy of this Internet version of the notice, it is not the official version. Please refer to the official version in a forthcoming Federal Register publication or on GPO's Web Site. You can access the Federal Register at: www.gpoaccess.gov/fr/index.html.

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 85, 86, and 600

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

49 CFR Parts 531 and 533

[EPA-HQ-OAR-2010-0799; FRL-9212-4; NHTSA-2010-0131]

RIN 2060-AQ54; RIN 2127-AK79

2017 and Later Model Year Light-Duty Vehicle GHG Emissions and CAFE Standards: Supplemental Notice of Intent

AGENCIES: Environmental Protection Agency (EPA) and the National Highway Traffic Safety Administration (NHTSA), Department of Transportation (DOT).

ACTION: Supplemental notice of intent to conduct a joint rulemaking.

SUMMARY: On May 21, 2010, President Obama issued a Presidential Memorandum requesting that the Environmental Protection Agency (EPA) and the National Highway Traffic Safety Administration (NHTSA), on behalf of the Department of Transportation, develop, through notice and comment rulemaking, a coordinated National Program under the Clean Air Act (CAA) and the Energy Policy and Conservation Act (EPCA), as amended by the Energy Independence and Security Act (EISA), to improve fuel economy and to reduce greenhouse gas emissions of light-duty vehicles for model years 2017-2025. President Obama requested that the agencies issue a Notice of Intent (NOI) to issue a proposed rulemaking that announces plans for setting stringent fuel economy and greenhouse gas emissions standards for light-duty vehicles for model year 2017 and beyond. On September 30, 2010, the agencies issued the requested Notice, which described the agencies' initial assessment of potential levels of stringency for a National Program for model years 2017-2025 (See 75 FR 62739 (Oct. 13, 2010)). This Supplemental Notice highlights input on many of the key issues the agencies have received in response to the September NOI and the accompanying Interim Joint Technical Assessment (TAR) developed by EPA, NHTSA, and the California Air Resources Board, and also provides an overview of many of the key

technical analyses the agencies have planned and are conducting to support the upcoming proposed rule. The agencies currently expect to issue a proposed rulemaking for a coordinated National Program for model year 2017-2025 light-duty vehicles by September 30, 2011, and a final rulemaking by July 31, 2012.

FOR FURTHER INFORMATION CONTACT: *EPA:* Tad Wysor, Office of Transportation and Air Quality, Assessment and Standards Division, Environmental Protection Agency, 2000 Traverwood Drive, Ann Arbor MI 48105; telephone number: 734-214-4332; fax number: 734-214-4816; email address: wysor.tad@epa.gov, or Assessment and Standards Division Hotline; telephone number (734) 214-4636; e-mail address asdinfo@epa.gov. *DOT/NHTSA:* Rebecca Yoon, Office of Chief Counsel, National Highway Traffic Safety Administration, 1200 New Jersey Avenue, SE, Washington, DC 20590. Telephone: (202) 366-2992.

SUPPLEMENTARY INFORMATION:

How Can I Get Copies Of This Document and Other Related Information?

NHTSA and EPA have established dockets for the September 30, 2010 Notice of Intent and upcoming rulemaking under Docket ID numbers NHTSA-2010-0131 and EPA-HQ-OAR-2010-0799, respectively. You may read the materials placed in the dockets (e.g., the comments submitted in response to the September 30, 2010 Notice of Intent by other interested persons) at any time by going to <http://www.regulations.gov>. Follow the online instructions for accessing the dockets. You may also read the materials at the EPA Docket Center or NHTSA Docket Management Facility at the following locations: EPA: EPA Docket Center, EPA/DC, EPA West, Room 3334, 1301 Constitution Ave., NW., Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744. NHTSA: Docket Management Facility, M-30, U.S. Department of Transportation, West Building, Ground Floor, Rm. W12-140, 1200 New Jersey Avenue, SE, Washington, DC 20590. The Docket Management Facility is open between 9 a.m. and 5 p.m. Eastern Time, Monday through Friday, except Federal holidays.

How Do I Prepare and Submit Comments?

The dockets established by the agencies will remain open for the duration of the rulemaking. While the agencies have not established a set comment period for this Supplemental NOI, you may continue to submit comments to the dockets throughout the course of the rulemaking. An explanation of how to submit comments to the rulemaking dockets is available in the September NOI, 75 Fed. Reg. 62739 (Oct. 13, 2010), or you may contact the agency officials listed above for more information.

I. Introduction

A. Purpose of this Supplemental Notice of Intent (NOI)

This Supplemental Notice of Intent represents a further step in the process that EPA and NHTSA have initiated to develop a proposed rulemaking to establish greenhouse gas (GHG) and fuel economy standards for model years 2017-2025 light-duty vehicles. This document is meant to aid the public's understanding of some of the key issues facing the agencies in developing the upcoming rulemaking. This Supplemental NOI highlights many of the key comments that the agencies have received in response to the initial Notice of Intent issued on September 30, 2010, and to the Interim Joint Technical Assessment Report that accompanied that Notice.¹ This Supplemental NOI, however, does not present a comprehensive summary of comments received to date. This Supplemental NOI also discusses the agencies' plans for some of the key technical work and analyses that will be undertaken in developing the upcoming proposed rulemaking.

The purpose of this Supplemental NOI has changed from the agencies' original intent for this document. The September NOI stated that a principal goal of the Supplemental NOI would be "to narrow the range of potential stringencies for the future proposed standards, as well as to reflect new technical data and information and, as appropriate, further analysis supplementing the Interim Joint TAR."² However, given the short amount of time between the issuance of the September NOI/TAR and this Supplemental NOI, the agencies were unable to complete several additional pieces of technical research in time for inclusion in analysis to support this Supplemental NOI. Additionally, based on the stakeholder input between the end of September and now and on public comments, the agencies have concluded that narrowing the range of potential stringencies would not be appropriate at this time. As discussed further in this Notice, in order to develop the proposed standards, a more complete analysis will need to be done. Therefore, at this time we are not updating the assessment presented in the September NOI, and instead we will continue to conduct analyses for purposes of developing the proposal. Many of the public comments supported the agencies' plans, noted in the September NOI, as to types and scope of analyses to be conducted for the proposed rulemaking. Therefore, the agencies are moving forward with this work as further described in Section III. As NHTSA and EPA move forward, we will continue to work with California in our technical assessments of potential standards, and will continue extensive dialogue with stakeholders.

¹ In addition to publishing the September NOI in the Federal Register (*see supra* Note 1 above), the agencies also posted both the September NOI and the Interim Joint TAR on our websites. Readers may access them at <http://www.epa.gov/otaq/climate/regulations.htm> and <http://www.nhtsa.gov/fuel-economy>

² 75 Fed. Reg. at 62741.

B. Background on the September NOI and Interim Joint Technical Assessment Report

As discussed above, the September NOI was issued in response to a May 21, 2010 Presidential Memorandum, which requested that NHTSA and EPA develop, through notice and comment rulemaking, a coordinated National Program under the Clean Air Act (CAA) and the Energy Policy and Conservation Act (EPCA), as amended by the Energy Independence and Security Act (EISA), to improve fuel economy and reduce greenhouse gas emissions of light-duty vehicles for model years 2017-2025. The Presidential Memorandum stated *“The program should also seek to achieve substantial annual progress in reducing transportation sector greenhouse gas emissions and fossil fuel consumption, consistent with my Administration's overall energy and climate security goals, through the increased domestic production and use of existing, advanced, and emerging technologies, and should strengthen the industry and enhance job creation in the United States.”* This upcoming rulemaking will build on the first phase of the National Program for fuel economy and GHG emissions standards, for model year 2012-2016 vehicles, which was issued on April 1, 2010.³ The Presidential Memorandum also requested that the agencies work with the State of California to develop a technical assessment to inform the rulemaking process. EPA and NHTSA worked with CARB to develop an initial technical assessment consistent with the President's request. The agencies released the document, the Interim Joint Technical Assessment Report (TAR), in conjunction with the September NOI.⁴

In the Interim Joint TAR, the agencies and CARB conducted an initial fleet-wide analysis of improvements in overall average GHG emissions and fuel economy levels. The agencies stated in the September NOI that for purposes of an initial assessment, this range represents a reasonably broad range of stringency increases for potential future GHG emissions standards and is also consistent with the increases suggested by CARB in its letter of commitment in response to the President's memorandum. We analyzed a range of potential stringency scenarios for model year 2025, representing a 3, 4, 5, and 6 percent per year estimated decrease in GHG levels from the model year 2016 fleet-wide average of 250 gram/mile (g/mi). Thus, the model year 2025 scenarios analyzed in the TAR range from 190 g/mi (calculated to be equivalent to 47 miles per gallon, mpg) under the 3 percent per year reduction scenario to 143 g/mi (calculated to be equivalent to 62 mpg) under the 6 percent per year scenario.⁵ These levels correspond to on-road values of 37 to 50 mpg, respectively. For

³ See 75 FR 25324 (May 7, 2010).

⁴ “Interim Joint Technical Assessment Report: Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2017-2025,” issued jointly by EPA, NHTSA and CARB, September 2010. Available at www.nhtsa.gov/fuel-economy and www.epa.gov/OTAQ/climate/regulations.htm.

⁵ The modeled scenarios, like the EPA's MY 2012-2016 standards, include the potential use of air conditioning emission reductions, which EPA estimated at 15 grams (compared to a 2008 baseline) in 2025 for all four technology paths. The estimates for further air conditioning reductions are largely due to an anticipated increase in the use of alternative refrigerants. As a result of including A/C-related emission reductions in the modeling, however, the “mpg-equivalent” values presented in the September NOI and Interim Joint TAR do not reflect analysis of potential CAFE improvements, and should be taken as merely illustrative mpg levels if

each of these scenarios, NHTSA, EPA, and CARB also analyzed four “technological pathways” by which these levels could be attained. These pathways were meant to represent ways that a hypothetical manufacturer *could* increase fuel economy and reduce greenhouse gas emissions, and do not represent ways that they would be required to or necessarily *would* respond to future standards. Each technology pathway emphasizes a different mix of advanced technologies, by assuming various degrees of penetration of advanced gasoline technologies, mass reduction, hybrid electric vehicles (HEVs), plug-in hybrids (PHEVs), and electric vehicles (EVs).⁶

The TAR also discusses the significant additional technical information and analysis that will be needed to support the rulemaking development process. For the initial assessment in the TAR, we analyzed the vehicle fleet as one single industry-wide fleet, which did not account for differences among individual manufacturers and did not separately analyze car and truck fleet standards, as required by EPCA/EISA. By focusing the analysis on the technology itself, independent of the individual manufacturer, the agencies produced results that indicated how that single hypothetical fleet could achieve greater GHG reductions and improved fuel economy in the most efficient manner. Treating the entire fleet as a single fleet assumes, for example, that averaging GHG performance across all vehicle platforms is possible irrespective of who the individual manufacturer is for a particular vehicle platform. This can be thought of as analyzing the fleet as if there was a single large manufacturer, instead of multiple individual manufacturers. In addition, this analysis assumed there are no statutory or other limits on manufacturers’ ability to transfer credits between passenger car and light truck fleets, no limits on the ability to trade credits between manufacturers, and that all manufacturers fully utilize such flexibilities with no transfer costs in doing so.

The approach used for the TAR analyses provides an initial and approximate evaluation of the potential costs and benefits of the fleet-wide scenarios modeled. The agencies, however, cautioned in the Interim Joint TAR that several of the simplifications

manufacturers achieved all modeled GHG emission improvements through reductions in tailpipe emissions. The agencies note additionally that real-world CO₂ is typically 25 percent higher and real-world fuel economy is typically 20 percent lower. Thus the 3% to 6% range evaluated in the September assessment would span a range of real-world fuel economy values (again, if all improvements were achieved through reductions of tailpipe emissions) of approximately 37 to 50 mpg-equivalent, which correspond to the regulatory test procedure values of 47 to 62, respectively.

⁶ Pathway A represented an approach where the industry would focus on HEVs, with less reliance on advanced gasoline vehicles and mass reduction, relative to Pathways B and C; Pathway B focused on advanced gasoline vehicles and mass reduction at a more moderate level (higher than in Pathway A but less than in Pathway C); Pathway C focused on advanced gasoline vehicles and mass reduction, and to a lesser extent on HEVs; and Pathway D focused on the use of PHEV, EV, and HEV technology, and relied less on advanced gasoline vehicles and mass reduction. Further information on the four technology pathways is provided in Section II.A.3 of the September NOI and in Section 6.3 of the Interim Report.

employed in the September NOI/TAR evaluation would not be used for purposes of a full Federal rulemaking analysis because such analysis must reflect all statutory requirements and limitations faced by the agencies in setting GHG and CAFE standards. The agencies noted that EPCA/EISA, in particular, are fairly prescriptive as compared to the CAA. In order to ensure that NHTSA's statutory framework is accounted for, and as permitted under the CAA, the agencies' analysis for the NPRM will examine attribute-based standards under which each manufacturer is subject to its own individual passenger car and light truck CAFE and GHG requirements for each model year, where the standard for each manufacturer is based on the production-weighted average of its passenger car and light truck targets, with the targets established in the attribute-based curves.

Additionally, the NPRM's CAFE analysis will account for EPCA/EISA restrictions on credit use and transfer/trading, the ability of manufacturers to pay fines in lieu of compliance, the differential impact of potential standards on individual manufacturers (historically relevant to NHTSA's determinations of whether standards are economically practicable), and a more extensive analysis of relevant social benefits.⁷ The NOI also noted NHTSA's practice of considering safety effects in determining appropriate levels of standards stringency, as recognized approvingly in case law over several decades. In addition, EPA has also considered safety impacts in previous mobile source rules, including for the 2012-2016 National Program. Generally, the agencies stressed that much work remained to be done, and that the upcoming rulemaking to develop the standards for MYs 2017 and beyond will be based on a full analysis that is consistent with both statutes and similar to the analysis for the MYs 2012-2016 rulemaking. Moreover, as noted in the September NOI, the agencies analyzed scenarios in the 3-6% range, but we have made no decisions on the appropriate standards for the NPRM. For the full proposed rulemaking, the agencies are not precluded from considering standards outside of this range. For purposes of the Draft Environmental Impact Statement and NPRM discussed below, NHTSA intends to analyze standards both within and outside this range, as well as an alternative which is estimated to maximize net benefits.

II. Highlights of Stakeholder Input to Date on the September NOI and TAR

EPA and NHTSA requested comment on the initial assessments contained in the September NOI and the TAR. The agencies received comments from more than 30 organizations and more than 100,000 individuals. In addition to the public comments, NHTSA, EPA, and CARB met individually with the ten largest automobile original equipment manufacturers (OEMs),⁸ as well as environmental non-governmental organizations

⁷ Relevant social benefits would include, for example, the social cost of carbon, criteria pollution reduction and energy security improvements. A much more detailed discussion of caveats with respect to the September NOI/TAR analysis can be found in Section 6.2 of the Interim Joint TAR, pp. 6-1 through 6-6.

⁸ NHTSA, EPA, and CARB met with the representatives of the following OEMs: Chrysler, Ford, General Motors, Honda, Toyota, Hyundai, Nissan, BMW, Daimler, and Volkswagen.

(NGOs),⁹ and representatives of state and local governments.¹⁰ We summarize below some key themes that we heard from stakeholders, both in the public comments and in the outreach meetings. This summary is meant to provide an overview of many key issues we heard from stakeholders, and is in no way meant to reflect a full summary of the public comments received. We encourage readers interested in more details to review the actual public comments received in the agencies' dockets. The agencies will continue to consider all of these comments as we develop the proposed rulemaking.

A. Continuing the National Program for Model Years 2017-2025

There was widespread stakeholder support for continuing the National Program for improved fuel economy and greenhouse gas standards for model years 2017-2025.

In both the written comments in response to the NOI and in our recent meetings with automotive companies (both the meetings held during July-August 2010 prior to the NOI, and in our meetings with automotive companies in October-November 2010, after the publication of the NOI), all manufacturers indicated their support for the continuation of the National Program approach, established in the 2012-2016 Joint NHTSA-EPA final rule, for model years 2017 and later. The manufacturers emphasized the significant benefits in the development of coordinated fuel economy and greenhouse gas standards that can be met with a single fleet of vehicles that can be sold nationwide. OEMs were also supportive of the ongoing coordination between NHTSA and EPA with CARB in the development of 2017-2025 program, including coordination on the time frame for the State and Federal rulemaking, in order to help ensure alignment of the state and federal standards.

Many automotive companies that provided comments and two OEM associations expressed concern regarding the potential effects a revised California Zero Emission Vehicle (ZEV) program could have on a manufacturer's ability to achieve a "single national fleet," because the ZEV program could drive the use of particular vehicle technologies that may not be chosen by manufacturers to meet the federal CAFE and GHG standards.

Support for the concept of the National Program approach was also included in written comments from auto dealers and automotive component manufacturers.

The states and environmental NGOs also expressed strong support for the continuation of the National Program in model years 2017-2025, and stated that the agencies should continue to fully include California in this process. Environmental NGOs stated that stringent GHG and fuel economy standards are needed to make America more energy independent,

⁹ NHTSA, EPA, and CARB met with representatives from several environmental NGOs, including the Natural Resources Defense Council, Union of Concerned Scientists, Sierra Club, National Wildlife Federation, ACEEE, Environment America, Safe Climate Campaign, and Environmental Defense Fund.

¹⁰ NHTSA, EPA and CARB met with representatives of the National Association of Clean Air Agencies (NACAA) and the Northeast States for Coordinated Air Use Management (NESCAUM), and several representatives of individual state and local governments.

reduce global warming pollution to curb the impacts of climate change, and save consumers money at the pump keeping it in the American economy. Several NGOs also stated that future standards can help ensure the U.S. auto industry remains competitive globally, and emphasized that other countries and regions are moving forward with strengthened standards and plans for vehicle electrification programs.

Although the environmental NGOs support a National Program, some suggested that the goal of a “single national fleet” does not mean that the EPA and NHTSA standards need to be identical. These commenters suggested that, as with the MYs 2012-2016 final rulemaking, the two agencies’ standards continue to include some important differences based on differences in statutes, such as the treatment of air conditioning, electric vehicles, and credit transfers.

In addition, we have received comments from more than 100,000 individuals supporting stronger federal fuel economy and greenhouse gas standards for model years 2017-2025.

B. Level of the Standards

Since publication of the September NOI and release of the Interim Joint Technical Report, the agencies have held further meetings with the ten largest auto manufacturers (OEMs), and from those meetings and written comments from OEMs and two OEM associations, we received a range of perspectives from the companies regarding the potential levels of stringency that the agencies should consider evaluating for model years 2017-2025 standards in the upcoming full rulemaking. In general, the OEMs indicated that they are investing significantly in the full range of technologies discussed by the agencies in the September NOI and TAR, and the OEMs agree that many of those technologies offer a significant potential for reducing fuel consumption and GHG emissions. However, many OEMs also commented that the potential of certain technologies to reduce fuel consumption and GHG emissions was less than the agencies had projected, as discussed further below. Auto manufacturers indicated that they know how to produce a wide range of advanced technologies, and that they intend to introduce a wide range of vehicle models that rely upon these technologies, including advanced gasoline and diesel vehicles, hybrid-electric vehicles, plug-in hybrid electric vehicles, and battery-electric vehicles, during the model years in question. Many OEMs also commented, however, that due to its fundamental approach (as well as specific assumptions regarding available technologies), the analysis presented in the TAR understated the challenges and costs that manufacturers would face in attempting to achieve the examined scenarios.

Manufacturers stated that EPCA does not allow unlimited credit transfers, and stated that an analysis consistent with EPCA would support less stringent CAFE standards than an analysis of the sort presented in the September NOI and TAR.

Both manufacturers and the Consumer Federation of America (CFA) supported the agencies’ plans to assess manufacturers’ individual abilities to meet new standards.

Both in meetings with the agencies and in written comments, many OEMs nonetheless indicated that the level of stringency they could achieve in the future was not necessarily constrained by the availability of technology – that is, that technology does exist that they could deploy to meet fairly stringent standards. However, the OEMs emphasized that their ability to deploy that technology in a way that would help them to meet stringent standards and continue to offer vehicles that consumers would purchase would depend on a number of other important factors, some of which are outside their direct control. Some of these factors include: the current relative high cost for some advanced technologies and uncertainty regarding the degree of cost reduction that will occur in the 2017-2025 timeframe; the future price of gasoline and diesel fuel; the existence of future consumer incentives for some advanced technologies; the level of consumer acceptance for HEV, PHEV, and EV technologies; and the willingness of consumers to pay higher prices for vehicles with advanced technologies and lower fuel consumption. Many OEMs also stressed that their ability to comply with future standards will be closely tied to the regulatory details of the model year 2017-2025 program, including the specific shape of the CAFE and GHG footprint-based standard curves for passenger cars and trucks, EPA’s treatment of upstream CO₂ emissions for electricity-derived vehicle power, and other details regarding the structure of the program.

Based on the uncertainties expected during the 2017-2025 time frame, as described above, one OEM association stated in written comments that numeric commitments to rates of stringency increase are not possible for the 2017-2025 time frame, and several OEMs stated similarly in individual meetings with the agencies. However, just over half of the firms provided comments in individual meetings with the agencies on the maximum rate of increase in stringency that they thought their firms could achieve for that time frame (as opposed to rates of increase that they believed were feasible for the industry as a whole). Most were in the 3 percent to 4 percent per year range, although one stated 2.5 percent per year and another stated between 5 percent and 6 percent per year. In all cases, these estimates of potential rates of increase included the assumption that 15 g/mi worth of additional CO₂ credits for air conditioning system improvements would be available for the MY 2017-2025 period, and the majority also included the assumption that upstream emissions from electric power generation would not be included in their compliance calculations for EVs and PHEVs.

Many commenters discussed the merits of the agencies including a framework for a “mid-term review” of the MYs 2017-2025 standards. The majority of OEMs supported a mid-term review, but varied in their views of how to structure it. OEMs who supported a future review stated that it was necessary due to a number of factors, such as the long time between standards promulgated in 2012 and the implementation of the standards in the model year 2017-2025 timeframe, and also a number of key uncertainties regarding future events and conditions as mentioned above, like OEMs’ ability to reduce technology costs, future fuel prices, and the willingness of consumers to purchase the advanced technology vehicles. Many OEMs suggested that if the current rulemaking established standards from model year 2017-2025, then a review of the later model year (2020-2025, or 2021-2025) standards should be undertaken in the 2014 to 2017 time frame, and re-examine only the appropriateness of those model year standards, in part due to lead time concerns with changing the earlier model

year standards. As an alternative, one auto industry association suggested that instead of incorporating a mid-term review, the agencies should break the MY 2017-2025 standard setting process into three separate rulemakings, rather than establishing standards for all of these MYs in the current rulemaking process.

OEM recommendations also varied regarding how such a review should be undertaken, what factors should be considered, and what should be the role of the agencies (including potentially CARB). Many OEMs stressed that a review should not just examine their “progress” in meeting the standards, but should also focus on external conditions (as discussed above, fuel price, technology costs, and consumer acceptance). Several manufacturers and one OEM association additionally recommended that the review process include using an independent panel of experts to periodically consider whether rulemaking assumptions have turned out to be valid. Depending on the details and facts that come to light during the review, several OEMs stated that the results of any future review of the standards could result in an increase in stringency, a decrease in stringency, or no change in stringency. Most OEMs stated that they would give this topic additional consideration as the agencies move forward with the development of the Joint NPRM.

Many state and local governments, including the Northeast States for Coordinated Air Use Management (NESCAUM), the National Association of Clean Air Agencies (NACAA), and the governors of nine states, along with environmental NGOs, and a large number of individuals voiced strong support for proposing standards based on a 6 percent annual rate of improvement, or alternatively, a 60 mpg standard by 2025. Many of these commenters stated that the agencies’ analysis in the September NOI and TAR indicates that the 6 percent level is technically feasible and cost-effective, would provide the greatest estimated lifetime owner fuel savings, and is necessary to keep the U.S. auto industry competitive globally by requiring them to build more fuel-efficient vehicles. NESCAUM commented that, under the initial assessment, the 6 percent rate of increase represented the only scenario that projected widespread introduction of PHEVs and EVs. In addition, Environment America submitted letters from more than 150 state and local elected officials, leaders of a number of businesses, and organizations supporting standards that would require 60 mpg by 2025.

The Governors of nine states, including New York, Maine, Maryland, Massachusetts, New Mexico, Oregon, Pennsylvania, Vermont, and Washington, stated their support for a standard of 60 mpg by 2025, and cite a key reason that more efficient vehicles will reduce unnecessary consumer spending at the pump, keeping money in their state and local economies.

Several NGOs stated that the September NOI and Interim TAR provide a strong basis for setting a standard of at least 6 percent annual improvement rate, which they believe is level that provides the greatest GHG reduction and oil saving benefits. Some groups stated that much of the basic vehicle design and technology to build a fleet that achieves at least 62 mpg is already in use in vehicles today, in the form of hybrids, PHEVs, and EVs entering the market this fall. They further stated that this fleetwide level is achievable for manufacturers especially given that the agencies are providing 6 to 15 years of leadtime.

The Union of Concerned Scientists and Natural Resources Defense Council conducted a joint analysis of fleetwide annual emission reductions in the MYs 2017-2025 timeframe, and they stated the TAR substantiates their assessment's conclusion that a 6% annual reduction is both technically feasible and cost effective. Further, these groups stated that their analysis would support a 7% annual reduction by model year 2025 if using the TAR's 0 g/mi accounting method for EV upstream emissions. Several other groups also recommended that the agencies analyze scenarios more stringent than 6 percent, such as 7 percent, or other approaches such as a rate representing the point at which net benefits are maximized, or a rate representing the point at which total costs are equal to total benefits. Some NGOs also commented that the 3 and 4 percent scenarios fail to significantly advance clean vehicle technology, noting that the TAR analysis projected no use of EVs or PHEVs by manufacturers in meeting these scenarios.

Environmental NGOs and states that offered comments on a mid-term review expressed concern that it could be used to weaken the standards and that it could cause uncertainty for manufacturers by implying that later year standards would be somehow less binding. These commenters suggested that this could undermine the development of advanced technologies, and that any review, if one must occur, should be limited in scope, focus only on later model years, occur only once, and consider more stringent standards.

C. Technology Costs, Effectiveness, Feasibility, and Safety

Our stakeholder meetings with the OEMs, as well as the written comments from several OEMs and two trade associations, raised several concerns with the September NOI and the TAR regarding the agencies' initial assessment of technology cost, effectiveness, and feasibility. In addition several OEMs discussed the important issues regarding vehicle mass reduction and potential impacts on vehicle safety. We summarize here some of the major issues raised by the OEMs.

Most automotive companies commented that the agencies' estimates of most technology costs were in general too low, though for some OEMs this was not the case for all technologies. Nearly every OEM stressed that the agencies' costs estimates for lithium-ion batteries for HEVs/PHEVs/EVs and mass reduction in particular were significantly too low compared to their projections for the 2020-2025 timeframe. One OEM association provided a list of several reasons why they believe the TAR cost estimates are too low, including the TAR projection that batteries will last the life of the vehicle and the agencies' estimates for indirect costs, which they stated are low compared to a 2009 National Research Council Report. The OEM association also commented that the agencies should consider the potential for stranded capital in the 2017-2025 analysis in the event the MYs 2017-2025 standards result in a significant change in future vehicle designs compared to the investment manufactures have made and are making now to comply with the MYs 2012-2016 standards. This OEM association also noted more generally that while the OEMs supported the MYs 2012-2016 standards, they had not evaluated the agencies' analysis for that rulemaking carefully, and upon revisiting it found a number of assumptions carried into the TAR with which they do not agree.

OEMs discussed with the agencies their concerns that the effectiveness (the technologies' ability to reduce CO₂ and fuel consumption) of both individual technologies as well as the packages of technologies identified in the TAR were too optimistic. In some cases manufacturers stated that they thought the differences were due to a range of potential engineering considerations which the TAR may not properly have accounted for, such as vehicle performance, utility (*e.g.*, towing capability), and comfort (*e.g.*, noise, vibration, and harshness), the role of competing regulatory or technical requirements (*e.g.*, criteria pollutant and/or safety standards), and assumptions regarding future gasoline fuel properties (*e.g.*, octane levels), although OEMs acknowledged that their review of the TAR's technical effectiveness assessment was still ongoing. However, there were a number of OEMs that agreed with our assessment of a number of specific packages or individual technologies. The agencies expect to discuss these issues with the OEMs in much more depth over the next several months in order to assess the basis of these concerns, which could be based in part on the possibility of different assumptions about baseline technologies by the agencies and the OEMs.

With regard to the feasibility of applying the technologies identified in the TAR, in general the OEMs agreed with the agencies that most of the technologies identified in the TAR could be applied to at least some vehicle models in the 2017-2025 timeframe (as nearly all of the technologies considered are either available today or are expected to be introduced into the market within the next few years). However, the OEMs highlighted several specific areas where they did not agree with the assessment in the TAR, or they believed that challenges exist. All OEMs stated that mass reduction will be an important element of their future fuel economy/CO₂ reduction strategy, however; all of the OEMs also stated that mass reduction cannot be done as aggressively as indicated by several of the Technology Pathways analyzed in the TAR. All manufacturers and one OEM association expressly stated that a 30 percent net mass reduction from model year 2008 to model year 2025 was not technically feasible. Reasons cited included, but were not limited to, manufacturing constraints, mass increases associated with known and potential vehicle safety requirements that may be developed between now and model year 2025, future voluntary standards (such as those established by NHTSA through the New Car Assessment Program (NCAP) and the Insurance Institute for Highway Safety (IIHS)), and other potential voluntary improvements, noise/vibration/harshness considerations, and the potential safety implications of severe weight reduction. One OEM association noted the agencies' commitment to on-going work noted in the September NOI and stated that the agencies must complete these studies to inform the Joint NPRM, indicating that a failure by the agencies (and particularly NHTSA) to evaluate fully the potential safety effects of mass reduction in the 2017-2025 timeframe could leave the final rule legally vulnerable. Many manufacturers commented that reducing mass in the 20-25% range would likely not be practical for many vehicle models because of high costs and, in some cases, because they have already incorporated today some of the mass reduction technologies that could be used to reduce mass in the 20-25% range. Manufacturers encouraged the agencies to continue to analyze this issue carefully.

Several environmental NGOs and the state organizations also expressed support for the continued technical work EPA, NHTSA, and CARB are doing on costs, effectiveness, mass reduction, and vehicle safety.

One automotive supplier association (the Aluminum Association) commented that the mass reduction on the order of 15-30 percent discussed in the TAR was technologically achievable based in part through the use of aluminum.

Several OEMs also commented during our stakeholder meetings on the relatively high level of penetration of full hybrids for a number of the Technology Pathways for the higher levels of stringency evaluated in the TAR. Some auto companies indicated that the HEV levels which approached nearly 70 percent of the new vehicle fleet may not be feasible from a lead-time perspective (independent of the OEMs' concerns regarding the willingness of consumers to purchase those quantities of HEVs).

D. Program Design Elements, Credit Opportunities and Flexibilities

Several commenters provided feedback on how various credit programs and other flexibilities contained in the model year 2012-2016 program might be assessed or adapted for the MYs 2017-2025 program.

1. Program Design Elements

Automotive OEMs, both in their written comments and in recent stakeholder meetings with the agencies, have stated that the agencies should continue many of the program design elements as well as flexibilities provided in the model year 2012-2016 National Program. A number of OEMs have stated that the agencies should continue with the use of separate car and truck based standards (as required by EPCA/EISA) and continue to use vehicle footprint as the attribute for determining a manufacturer's CAFE and CO₂ standards.

2. Credits and Flexibilities

All automotive OEMs supported the agencies providing as much flexibility as possible through credit programs. Automotive OEMs generally expressed support for the continuation of both NHTSA's and EPA's regulatory provisions regarding the banking and trading of fuel economy/GHG credits, including the provisions for carry-forward and carry-back of credits across model years. A number of OEMs expressed concern, that additional flexibilities could be particularly important for the MYs 2017-2025 time frame, given the stringency of the MY 2012-2016 standards. Regarding other program flexibilities, OEMs in general support the continuation of the flexibilities included in the model year 2012-2016 National Program, including the availability of emission credits for improvement in air conditioning GHG emissions under the EPA standards, and the availability of off-cycle GHG emission credits for technologies that produce real-world emission reductions but that are not captured under the regulatory test procedure, and provisions for unlimited credit trading between cars and trucks and between companies. A number of OEMs also supported the continuation of the 2012-2016 programs provisions for credit transfer between the car and truck fleets, as well as

trading of credits between automotive firms. Some automotive OEMs and their trade associations suggested that EPA and NHTSA may need to consider additional program flexibility for small and intermediate volume manufacturers for model years 2017-2025, similar to the compliance flexibility provided by EPA in the TLAAS program in the model year 2012-2016 program.

Some environmental groups similarly expressed support for provisions that give manufacturers greater flexibility, such as averaging, banking, and trading, but emphasized that the provisions must not undermine the technology-forcing nature or the emissions benefits of the program. Several groups also stressed the need for transparency to provide clear public accounting of any credits and compliance programs. One environmental group, however, stated that while flexibilities might have been appropriate for the early years of the National Program, they should not persist indefinitely, and the MYs 2012-2016 standards should have provided plenty of time for manufacturers to achieve compliance by adding technology to their vehicles. This commenter therefore argued that the agencies should dispense with the credits, incentives and flexibilities discussed in the September NOI, including averaging, banking, and trading (ABT).

Environmental groups generally commented that EPA should establish air conditioning standards rather than continue credits based on air conditioning system improvements.

Environmental groups commented that given the extensive amount of lead time contemplated for the rulemaking, along with the fleet improvements that will have arisen due to model year 2012-2016 standards, the agencies should not constrain stringency levels in the 2017-2025 rule based on lead time considerations. These environmental groups indicated, as stated in the model year 2012-2016 rulemaking and the TAR, that most vehicle models are redesigned (not merely refreshed) every five years, such that most manufacturers should have ample opportunity to apply new technologies prior to MY 2025. In addition, some environmental groups commented that there is no evidence or compelling policy rationale to support continuing the Temporary Lead-time Allowance Alternative Standards (TLAAS) that were provided in the model year 2012-2016 program. In addition, one NGO commenter urged that EPA establish standards for small volume manufacturers (i.e., those manufacturers with annual U.S. sales of less than 5,000 vehicles), and that NHTSA end the statutory exemption from generally-applicable CAFE standards allowed for manufacturers of less than 10,000 vehicles worldwide annually, as this commenter believes that by 2017, these manufacturers will have had ample time to bring their fleets into compliance.

3. Treatment of Upstream Emissions

With the exception of one company, all OEMs and their trade associations supported the use of a zero gram/mile CO₂ tailpipe emissions value under the EPA regulations for all electric vehicles (EVs) as well as the grid-derived electricity for plug-in hybrid electric vehicles (PHEVs). OEMs provided a range of reasons for their position, including their perspectives that: automotive manufacturers do not have any control over the GHG emissions used to produce grid electricity, thus it would be unfair for EPA to require manufacturers to

accept the burden of emissions for which vehicles are not directly (at the tailpipe) responsible; the inclusion of upstream emissions would be a significant deterrent to OEMs for investing the significant capital resources necessary to bring EVs and PHEVs to the market, and the resulting compliance value for those vehicles would not be significantly better than for non-EV and non-PHEV vehicles; there is too much variation across the national electricity grid in terms of CO₂-generation intensity for a single upstream value to be meaningful; and such an approach is not consistent with EPA's historic regulation of light-duty vehicles, as EPA does not account for the upstream emissions associated with gasoline and diesel production in vehicle compliance values (the Edison Electric Institute commented similarly).

The Edison Electric Institute (EEI) commented that EPA should be consistent in the treatment of upstream emissions by not including upstream emissions for any vehicles. EEI argues that there is too much variation in upstream energy production to produce "national average" values for any energy type.

The treatment of advanced technology vehicles continues to be a key concern for environmental groups. Environmental groups continue to believe that upstream CO₂ emissions should be accounted for in determining vehicle emission rates for all vehicles. NRDC and the Union of Concerned Scientists also support the inclusion of upstream emissions accounting for electric vehicles, and they provided an analysis and comments that they believe support standards increasing at a 6 percent annual rate if upstream emissions are included, and up to 7 percent annual rate if a 0 g/mile CO₂ emissions rate is used for the electric portion of vehicle operation.

The agencies also received comments from Natural Gas Interests strongly supporting the inclusion of full life-cycle GHG emissions for all petroleum and non-petroleum-fueled vehicles in determining vehicle compliance, noting that natural gas vehicles have 30 percent lower life-cycle GHG emissions compared to their gasoline-fueled counterparts.

Two automotive material supplier trade associations, the American Iron and Steel Institute and the World Steel Association, recommended that EPA and NHTSA include not only upstream emissions from fuel production (e.g., gasoline fuel and electricity) in the regulatory standard, but the entire life-cycle emissions of the vehicle manufacturing process as well. These commenters suggested that the inclusion of lifecycle GHG emissions at both the supplier and the OEM levels from the manufacturing process is the most appropriate method to ensure an overall reduction in GHG emissions from light-duty vehicles.

The State of New York Department of Transportation commented that they recognize the valid concerns about upstream emissions generation in the production of electricity and other energy sources used in fuels, and encourage the agencies to work cooperatively with the Department of Energy to develop incentives to expand clean, low-carbon power generation in the U.S.

E. Other Comments

The agencies received additional comments in several areas including assumptions used in economic and benefit analyses (e.g., discount rates should be higher or lower, rebound effect should be higher or lower, values used to assess the social cost of carbon, potential consumer welfare effects), ensuring program benefits beyond fuel savings are properly accounted for, consideration of higher oil price scenarios, and potential employment impacts. Several commenters also provided recommendations regarding the need for the agencies to consider the role of EV/PHEV vehicle charging locations/infrastructure in the development of the 2017-2025 standards.

NACAA commented that they believe state and local governments have a key role to play in supporting the development of infrastructure for electric vehicle charging. State commenters also asked the agencies to work with DOE to encourage the installation of charging stations in homes and public locations, such as parking lots.

NACAA also commented that there are potential co-benefits of improved fuel economy/GHG standards in helping meet clean air goals for criteria pollutants and air toxics, especially if the new standards are stringent enough to encourage meaningful penetrations of electrified vehicles.

Several environmental NGOs recommended that the agencies should establish backstop standards to ensure that the projected fleet-wide reductions are still met in the event of shifts in sales mix and average vehicle size.

All of these comments will be considered as we conduct our analyses for the proposed rulemaking.

III. Plans for Developing the Proposed Rulemaking

A. Continued Stakeholder Outreach and Key Areas of Technical Analysis in Developing the Proposed Rulemaking

This Supplemental NOI is an early step in NHTSA's and EPA's plans to propose a coordinated National Program for model year 2017-2025 light-duty vehicles with which (as with the model year 2012-2016 program) manufacturers could comply by building a single vehicle fleet. As NHTSA and EPA proceed to develop the proposed rulemaking, we plan to continue our ongoing dialogue with stakeholders, and we specifically welcome additional data and information that can inform our rulemaking efforts.

EPA and NHTSA intend to continue working with the California Air Resources Board in developing the underlying technical assessments that will inform our future proposed standards and we will continue to work with CARB on additional program related issues and seek their input as we work toward our common goal of a National Program. We will

continue to coordinate on a number of on-going studies, including technology cost, effectiveness, mass feasibility, and mass-related safety studies.

As we indicated in the September NOI and Interim Joint TAR, there are numerous areas of technical work that EPA and NHTSA have underway as part of developing our proposed standards. Some of these key areas include new technical assessments of advanced gasoline, diesel, and hybrid vehicle technology effectiveness; several new projects to evaluate the cost, feasibility, and safety impacts of mass reduction from vehicles; an on-going project to improve our cost estimates for advanced technologies; further consideration of battery life, durability, cost and safety; and further review of the lead time needed to implement advanced technologies. The agencies are working very closely with the Department of Energy on a number of projects related to these technical areas.

In addition, for the 2017-2025 NPRM, NHTSA and EPA will conduct an analysis of the effects of the proposed standards on vehicle safety, including societal effects. CARB is undertaking and coordinating with EPA and NHTSA on a study of how a future vehicle design that incorporates high levels of mass reduction complies with vehicle safety standards and voluntary safety guidelines. NHTSA is also initiating a new study of the feasible amount of mass reduction based on a mid-size passenger car platform, and the effects of several advanced mass reduction design concepts on fleet safety. The NHTSA studies are being coordinated with EPA, DOE, and CARB.

The agencies expect that several, but not all of these studies will be completed in time to inform the NPRM. Others are expected to be completed in time to inform the final rule.

As discussed above, the agencies' initial assessment in the Interim Joint TAR was limited to a fleet-wide level analysis of improvements in overall average GHG emissions and fuel economy level, which included a number of simplifying assumptions. NHTSA and EPA acknowledged in the September NOI that for the upcoming proposed rulemaking, we would conduct a more refined analysis, as required by EPCA/EISA and as allowed by the CAA, including separate analyses for car and light truck vehicle fleets, year-by-year attribute-based standards, and manufacturer-specific estimates of potential attribute-based standard targets and costs, among other statutory requirements. NHTSA and EPA also will perform a more thorough assessment of the impacts of proposed standards, as was done for the model year 2012-2016 rulemaking, including analysis of improved energy security, monetized benefits of CO₂ reductions, impacts of other pollutants, an assessment of the societal costs and benefits of potential standards, an assessment of potential safety impacts, an assessment of impacts on automobile sales, an assessment of employment impacts, an assessment of the regulatory program's key design elements and flexibility mechanisms, and related issues.

Finally, as discussed in the September NOI, EPA is currently in the process of conducting an assessment of the potential need for additional controls on light-duty vehicles' non-greenhouse gas emissions and gasoline fuel quality. EPA expects to coordinate the timing of any final action on new non-greenhouse gas emissions regulations for light-duty vehicles and gasoline with the final action on greenhouse gas emissions and CAFE regulations discussed in this Supplemental NOI.

In his May 21, 2010 Memorandum, the President highlighted the opportunity for the U.S. to lead the world in developing a new generation of clean cars and trucks, to spur economic growth and to create high-quality jobs. In developing the proposal, the agencies will continue to gather input from stakeholders, including the OEMs and labor unions, on the potential impacts of standards on worker productivity, jobs, the automotive sector, and the opportunities for economic growth.

B. Anticipated Rulemaking Schedule

The May 21, 2010 Presidential Memorandum called for EPA and NHTSA to include in the September Notice of Intent a “schedule for setting those standards as expeditiously as possible, consistent with providing sufficient leadtime to vehicle manufacturers.” As we indicated in the September NOI, the agencies expect to issue a joint Notice of Proposed Rulemaking (NPRM) by September 30, 2011, and a final rule by July 31, 2012.

As required by the National Environmental Policy Act (NEPA), and by NHTSA and Council of Environmental Quality (CEQ) regulations, NHTSA will be developing a Draft Environmental Impact Statement (DEIS), to inform the upcoming NPRM. In the coming months, NHTSA will issue a scoping notice to request comment on the regulatory options that the DEIS should consider. A Final EIS (FEIS) will be issued at least 30 days prior to the release of the final rule.

As with any notice-and-comment rulemaking process, the agencies will provide full opportunity for the public to participate in the rulemaking process, consistent with EPCA/EISA, the Clean Air Act, Administrative Procedure Act, other applicable law, and Administration policies on openness and transparency in government. Upon publication of the NPRM, the agencies will open a public comment period for receiving written comments and expect to hold at least one joint public hearing to receive oral comments. We will describe all of these opportunities for public involvement in the NPRM which will be published in the Federal Register, and we will post this information on each agency’s website associated with this rulemaking.

**2017 and Later Model Year Light-Duty Vehicle GHG Emissions and CAFE Standards:
Supplemental Notice of Intent**

Dated: _____

Ray LaHood, Secretary, Department of Transportation.

**2017 and Later Model Year Light-Duty Vehicle GHG Emissions and CAFE Standards:
Supplemental Notice of Intent**

Dated: _____

Lisa P. Jackson, Administrator, Environmental Protection Agency