
Chapter 1 Purpose and Need for the Proposed Action

1.1 INTRODUCTION

The Energy Policy and Conservation Act of 1975¹ (EPCA) established a program to regulate automobile fuel economy and provided for the establishment of average fuel economy standards for passenger cars and light trucks. As part of that Act, the Corporate Average Fuel Economy (CAFE) Program was established to reduce national energy consumption by increasing the fuel economy of passenger cars and light trucks. EPCA directs the Secretary of Transportation to set and implement fuel economy standards for passenger cars and light trucks sold in the United States. The National Highway Transportation Safety Administration (NHTSA) is delegated responsibility for implementing EPCA fuel economy requirements assigned to the Secretary of Transportation.²

In December 2007, the Energy Independence and Security Act of 2007 (EISA)³ amended EPCA's CAFE Program requirements, granting the U.S. Department of Transportation (DOT) additional rulemaking authority and responsibilities.⁴ Pursuant to EISA, NHTSA recently proposed CAFE standards for model year (MY) 2011-2015 passenger cars and light trucks in a Notice of Proposed Rulemaking⁵ (NPRM) (NHTSA 2008b).⁶

Under the National Environmental Policy Act⁷ (NEPA), a federal agency must analyze environmental impacts if the agency implements a proposed action, provides funding for an action, or issues a permit for that action. Specifically, NEPA directs that "to the fullest extent possible," federal agencies proposing "major federal actions significantly affecting the quality of the human environment" must prepare "a detailed statement" on the environmental impacts of the proposed action (including alternatives to the proposed action). NHTSA submits this Final Environmental Impact Statement (FEIS) to disclose its evaluation of the potential environmental impacts of adopting CAFE standards for MY 2011-2015.

1.2 NEPA PROCESS

To inform its development of the new CAFE standards required under EPCA, as amended by EISA, NHTSA prepared this FEIS to analyze and disclose the potential environmental impacts of our preferred alternative and other alternative standards pursuant to Council on Environmental Quality (CEQ)

¹ EPCA was enacted for the purpose of serving the Nation's energy demands and promoting conservation methods when feasibly obtainable. EPCA is codified at 49 United States Code (U.S.C.) 32901 *et seq.*

² 49 Code of Federal Regulations (CFR) §§ 1.50, 501.2(a)(8). In addition, the U.S. Environmental Protection Agency (EPA) calculates the average fuel economy for each automobile manufacturer that sells vehicles in the United States.

³ EISA amends and builds on the Energy Policy and Conservation Act by setting out a comprehensive energy strategy for the 21st Century addressing renewable fuels and CAFE standards. EISA is Public Law 110-140, 121 Stat. 1492 (December 19, 2007).

⁴ Accordingly, the Secretary of Transportation, DOT, and NHTSA are used interchangeably in this section of the FEIS.

⁵ 73 *Federal Register (FR)* 24352 (May 2, 2008).

⁶ At the same time, NHTSA requested updated product plan information from the automobile manufacturers. *See* Request for Product Plan Information, Passenger Car Average Fuel Economy Standards—Model Years 2008-2020 and Light Truck Average Fuel Economy Standards—Model Years 2008-2020, 73 *FR* 21490, May 2, 2008.

⁷ 42 U.S.C. § 4332(2)(C).

NEPA implementing regulations, DOT Order 5610.1C, and NHTSA regulations.⁸ This FEIS compares the potential environmental impacts among alternatives, including a no action alternative. It also analyzes direct, indirect, and cumulative impacts and discusses impacts in proportion to their significance.

1.3 PURPOSE AND NEED

NEPA requires that a proposed action's alternatives be developed based on the action's purpose and need. The purpose and need statement explains why the action is needed and the action's intended purpose, and serves as the basis for developing the range of alternatives to be considered in the NEPA analysis. In accordance with EPCA, as amended by EISA, the purpose of the rulemaking action is to establish MY 2011-2015 CAFE standards at "the maximum feasible average fuel economy level that the Secretary of Transportation decides the manufacturers can achieve in that model year." When setting "maximum feasible" fuel economy standards, the Secretary is required to "consider technological feasibility, economic practicability, the effect of other motor vehicle standards of the Government on fuel economy, and the need of the United States to conserve energy."⁹ NHTSA interprets these statutory factors to include environmental and safety concerns.¹⁰

As explained in the NPRM:

- "Technological feasibility" means whether a particular method of improving fuel economy can be available for commercial application in the model year for which a standard is being established.
- "Economic practicability" means whether a standard is one within the financial capability of the industry, but not so stringent as to lead to adverse economic consequences, such as significant job losses or unreasonable elimination of consumer choice.
- "The effect of other motor vehicle standards of the Government on fuel economy" means the unavoidable adverse effects on fuel economy of compliance with emission, safety, noise, or damageability standards.
- "The need of the United States to conserve energy" means the consumer cost, national balance of payments, environmental, and foreign policy implications of the Nation's need for large quantities of petroleum, especially imported petroleum.

EPCA, as amended by EISA, requires that the CAFE standards for passenger cars and light trucks must increase ratably to at least the levels necessary to meet 35 mpg requirements for MY 2020. EPCA further directs the Secretary, after consultation with the Secretary of Energy and the Administrator of the Environmental Protection Agency (EPA), to establish separate average fuel economy standards for passenger cars and for light trucks manufactured in each model year beginning with MY 2011, "to achieve a combined fuel economy average for model year 2020 of at least 35 miles per gallon for the total fleet of passenger and non-passenger automobiles manufactured for sale in the United States for that model year."¹¹ In so doing, the Secretary of Transportation is to adopt "annual fuel economy standard

⁸ NEPA is codified at 42 U.S.C. §§ 4321-4347. CEQ NEPA implementing regulations are codified at 40 CFR Parts 1500-1508, and NHTSA's NEPA implementing regulations are codified at 49 CFR Part 520.

⁹ 49 U.S.C. §§ 32902(a), 32902(f).

¹⁰ See, e.g., *Competitive Enterprise Inst. v. NHTSA*, 956 F.2d 321, 322 (D.C. Cir. 1992) (citing *Competitive Enterprise Inst. v. NHTSA*, 901 F.2d 107, 120 n.11 (D.C. Cir. 1990)), and 73 FR 24,352, 24,364, May 2, 2008.

¹¹ 49 U.S.C. §§ 32902(b)(1), 32902(b)(2)(A).

increases.”¹² The standards for passenger cars and light trucks must be “based on one or more vehicle attributes related to fuel economy.” In any single rulemaking, standards may be established for not more than 5 model years.¹³ EPCA also mandates a minimum standard for domestically manufactured passenger cars.¹⁴

1.3.1 Notice of Intent and Scoping

In March 2008, NHTSA issued a Notice of Intent (NOI) to prepare an EIS for the MY 2011-2015 CAFE standards. The NOI described the statutory requirements for the standards, provided initial information about the NEPA process, and initiated scoping¹⁵ by requesting public input on the scope of the environmental analysis to be conducted.¹⁶ Two important purposes of scoping are identifying the substantial environmental issues that merit in-depth analysis in the EIS, and identifying and eliminating from detailed analysis the environmental issues that are not substantial and therefore require only a brief discussion in the EIS.¹⁷ Scoping should “deemphasize insignificant issues, narrowing the scope of the environmental impact statement process accordingly.”¹⁸

Consistent with NEPA and its implementing regulations, on April 10 and 11, 2008, NHTSA mailed the NOI to:

- 78 contacts at federal agencies having jurisdiction by law or special expertise with respect to the environmental impacts involved, or authorized to develop and enforce environmental standards, including other modes within DOT;
- the Governors of every state and U.S. territory;
- 23 organizations representing state and local governments;
- 14 Native American tribal organizations and academic centers that had issued reports on climate change and tribal communities; and
- 92 contacts at other stakeholder organizations that NHTSA reasonably expected to be interested in the NEPA analysis for the MY 2011-2015 CAFE standards, including auto industry organizations, environmental organizations, and other organizations that had expressed interest in prior CAFE rules.

NHTSA used its letters transmitting the NOI to develop a mailing list for future notices about the NEPA process for the CAFE standards. For instance, NHTSA asked each Governor to, “share [the] letter and the enclosed [NOI] with the appropriate environmental agencies and other offices within your administration and with interested local jurisdictions or local government organizations within your State.” NHTSA further requested that each Governor ask their representative to provide contact information for the state’s lead office on the CAFE EIS by returning a mailing list form to NHTSA or by

¹² 49 U.S.C. § 32902(b)(2)(C).

¹³ 49 U.S.C. §§ 32902(b)(3)(A), 32902(b)(3)(B).

¹⁴ 49 U.S.C. § 32902(b)(4).

¹⁵ Scoping, as defined under NEPA, is an early and open process for determining the scope of issues to be addressed in an EIS and for identifying the significant issues related to a proposed action. 40 CFR § 1501.7.

¹⁶ See Notice of Intent to Prepare an Environmental Impact Statement for New Corporate Average Fuel Economy Standards, 73 FR 16615, March 28, 2008.

¹⁷ 40 CFR §§ 1500.4(g), 1501.7(a).

¹⁸ 40 CFR § 1500.4(g).

sending NHTSA an e-mail containing the information requested on the form. NHTSA asked federal agency contacts to share the NOI with other interested parties within their organizations. NHTSA asked contacts at other stakeholder organizations to let NHTSA know whether they wished to remain on the agency's NEPA mailing list for the CAFE EIS by returning a mailing list form or sending NHTSA an e-mail containing the information requested on the form. NHTSA indicated that organizations that did not return the form would be removed from the NEPA mailing list.

1.3.1.1 Supplemental Notice of Public Scoping

In April 2008, NHTSA issued a supplemental notice of public scoping providing additional information about:

- participating in the scoping process;
- the proposed standards; and
- the alternatives NHTSA expected to consider in its NEPA analysis.¹⁹

NHTSA outlined its plans for its NEPA analysis for the MY 2011-2015 CAFE standards, explaining that it would:

...consider the direct, indirect and cumulative environmental impacts of the proposed standards and those of reasonable alternatives. Among other potential impacts, NHTSA will consider direct and indirect impacts related to fuel and energy use, emissions, including Carbon Dioxide (CO₂) and their effects on temperature and climate change, air quality, natural resources, and the human environment. NHTSA also will consider the cumulative impacts of the proposed standards for MY 2011-2015 automobiles together with estimated impacts of NHTSA's implementation of the CAFE program through MY 2010 and NHTSA's future CAFE rulemaking for MY 2016-2020, as prescribed by EPCA, as amended by EISA...²⁰

NHTSA also acknowledged that it "anticipate[d] considerable uncertainty in estimating and comparing the potential environmental impacts of the proposed standards and the alternatives relating to climate change in particular."²¹

In preparing the supplemental scoping notice, NHTSA consulted with CEQ and EPA. In that notice, NHTSA again invited all stakeholders to submit written comments on the appropriate scope of NHTSA's NEPA analysis for CAFE standards for MY 2011-2015 passenger cars and light trucks. To help identify and narrow the issues for analysis in the EIS, NHTSA specifically requested comments, peer-reviewed scientific studies, and other information addressing the potential impacts of the standards and reasonable alternatives relating to climate change.²²

Following its publication in the *Federal Register* on April 28, 2008, NHTSA sent copies of the supplemental scoping notice directly to:

- 46 Governors from whom NHTSA had not received a lead State NEPA contact in response to the agency's initial letters;

¹⁹ Supplemental Notice of Public Scoping for an Environmental Impact Statement for New Corporate Average Fuel Economy Standards, 73 *FR* 22913, April 28, 2008.

²⁰ *Id.* at 22916.

²¹ *Id.* at 22916.

²² *Id.* at 22917.

- 24 state and local government NEPA contacts that had responded to the agency's initial letters;
- 11 administrators or other officials at other DOT agencies and offices;
- 62 NEPA contacts at other federal agencies; and
- 42 other stakeholders that asked to remain or be included on NHTSA's NEPA mailing list.

During the first week of May 2008, NHTSA mailed the supplemental scoping notice to Governors and stakeholders who had indicated a preference for receiving NHTSA's NEPA communications by U.S. mail. NHTSA e-mailed the supplemental scoping notice to all other stakeholders on May 6 and 7, 2008.

During the first week of May, NHTSA also mailed copies of the NOI and the supplemental scoping notice to more than 580 federally recognized Native American tribes, inviting them to submit written comments on the scope of NHTSA's NEPA analysis for the CAFE standards. In letters transmitting the two notices, NHTSA asked contacts at each tribe to let NHTSA know whether they wished to remain on the agency's NEPA mailing list for the CAFE EIS by returning a mailing list form or sending NHTSA an e-mail containing the information requested on the form. NHTSA indicated that tribes that did not return the form would be removed from the NEPA mailing list.

NHTSA's letters transmitting the NOI also explained our plans for communicating primarily by e-mail throughout the EIS process unless stakeholders indicated a preference for communications by U.S. mail. Representative copies of NHTSA's letters transmitting the NOI and the supplemental scoping notice to the stakeholders described above are available in the docket for this FEIS, Docket No. NHTSA-2008-0060, at <http://www.regulations.gov>.

In June 2008, NHTSA contacted various federal and state agencies and held meetings in person or by telephone to discuss the potential effects of the actions to be taken under EPCA and EISA. These agencies included Office of Protected Resources, National Oceanic and Atmospheric Administration (NOAA); Endangered Species Program, U.S. Fish and Wildlife Service; Cultural Resources, National Park Service; Advisory Council on Historic Preservation; Forest Health Monitoring Program and Forest Legacy Program, U.S. Forest Service; Division of Emergency and Environmental Health Services, Centers for Disease Control and Prevention (CDC); NEPA Compliance and Health Effects, Benefits, and Toxics Center, EPA; NEPA Oversight, CEQ; and Historical and Cultural Programs, Maryland Historical Trust. Comments received from these agencies were incorporated into the Draft Environmental Impact Statement (DEIS).

1.3.2 Summary of Scoping Comments and NHTSA's Responses

NHTSA received 1,748 comment letters in response to its two scoping notices. All but 11 of these letters were a form letter similar in content and sent by individuals. The non-form letters were provided by federal and state agencies, automobile trade associations, environmental advocacy groups, and two individuals.

Several commenters addressed the issues on which NHTSA specifically sought comment in its supplemental scoping notice and helped the agency identify and narrow the environmental issues for analysis. Other commenters questioned NHTSA's decision to prepare an EIS instead of an environmental assessment (EA). Still other commenters raised issues that are more properly addressed outside the NEPA process in other rulemaking documents. For example, some commenters raised economic and

social issues, and courts have generally held that such issues are appropriate for consideration under NEPA only if they directly interrelate to the effects on the physical environment.²³ Other commenters made suggestions about the process to follow or the factors to be considered in setting CAFE standards – issues that are germane to the NPRM and other supporting documents.

Note that Sections 1.3.2.1 through 1.3.2.6 restate our responses to scoping comments. Specifically, they respond to those comments that spoke to the scope of NHTSA's NEPA analysis for the MY 2011-2015 CAFE standards. For this reason, the responses often are stated in terms of references or discussions appearing in the DEIS or refer specifically to the DEIS.

1.3.2.1 Federal Agencies

Federal agencies that provided scoping comments included EPA (Docket No. NHTSA-2008-0060-0016) and the Department of Health and Human Services, CDC (Docket No. NHTSA-2008-0060-0010 and NHTSA-2008-0060-0140). After receiving scoping comments from EPA and CDC, NHTSA conducted a telephone conference with CDC on June 12, 2008, and met with EPA officials at the EPA Washington, DC, headquarters on June 17, 2008, to discuss each agency's respective scoping comments. NHTSA also consulted with NOAA, the U.S. Fish and Wildlife Service, the U.S. National Park Service, and the U.S. Forest Service.

EPA indicated that some of the factors that affect air quality, such as meteorology and atmospheric processes, will not be taken into account when evaluating environmental impacts and that this limitation should be acknowledged. NHTSA agrees with EPA's suggestion, and this limitation is acknowledged in Chapters 3 and 4.

In addition to the regulatory scenarios that NHTSA developed using the Volpe model, EPA suggested that NHTSA evaluate reasonable alternative scenarios by using other combinations of inputs, including fuel prices, manufacturer compliance costs, economic discount rates, the projected benefits of greenhouse gas (GHG) emission reductions (including assumptions about the social cost of carbon (SCC) emissions), and the likely manufacturer and consumer response to the footprint curve embedded in the proposed rule. The NHTSA benefit-cost analysis did include several sensitivity analyses to examine the impact of different model input assumptions, such as the values of economic and environmental externalities and the price of gasoline. NHTSA presented the results of the sensitivity analyses in the Preliminary Regulatory Impact Analysis (PRIA), and discussed them in Chapter 3 of the DEIS (NHTSA 2008a).

EPA also stated that NHTSA should consider the impacts of each alternative on air toxics emissions. NHTSA conducted these suggested analyses; *see* Chapters 3 and 4.

EPA additionally recommended that the projected impacts of the EPCA program components that provide alternative means for manufacturers to demonstrate compliance with CAFE standards be analyzed, because EPA believes that these components of the program can be expected to lower compliance costs and reduce projected fuel savings. As explained in Chapters 3 and 4, although NHTSA expects that manufacturers' use of CAFE-related flexibilities will lead to higher fuel consumption and emissions than presented in this analysis, NHTSA does not currently have a reasonable basis to develop specific quantitative estimates of such effects. NHTSA will reevaluate the potential to do so after

²³ *See, e.g., Ashley Creek Phosphate Co. v. Norton*, 420 F.3d 934, 944 (9th Cir. 2005); *Hammond v. Norton*, 370 F. Supp. 2d 226, 243 (D.D.C. 2005).

reviewing the updated product plans it has requested of vehicle manufacturers and related comments in response to the NPRM.

The Department of Health and Human Services, CDC, suggested that NHTSA relate projected changes in fleet emissions, fuel consumption, and fleet design to human health outcomes. It indicated that the levels of automobile emissions such as ozone-forming emissions, nitrogen oxides, and hydrocarbons, are affected by the CAFE standards and in turn directly affect human health. Consequently, CDC requested that potential health effects be analyzed for all of the alternatives, including an economic analysis of the associated health costs. It also suggested that transportation-related emissions contribute to climate change with resulting environmental impacts that directly affect human health worldwide, so NHTSA should also evaluate the health impacts of climate change.

NHTSA's analysis of alternative CAFE standards incorporates the economic value of reduced damages to human health that would result from the reductions in emissions of criteria air pollutants and GHGs estimated to result from each alternative. These reductions in damages to human health are valued using estimates of damage costs per unit of emissions of each pollutant that specifically reflect the chemical composition and geographic distribution of emissions generated by motor-vehicle use and by production and distribution of transportation fuels. These estimates were developed by EPA for use in its analysis of benefits from regulations that would reduce emissions from motor vehicle use and from the production and distribution of transportation fuels. Human health is further discussed in Chapters 3 and 4.

The CDC suggested that crash-related injuries be considered, including effects on other transportation-system users, because it believes that changing CAFE standards would affect fleet design and have the potential to increase or decrease crash-related injuries. It added that decreasing vehicle fleet disparities in size and weight can decrease crash-related injuries to those driving lighter-weight vehicles. In addition, two commenters requested consideration of lightweight vehicle materials as a fuel-saving technology. As discussed in the NPRM, NHTSA's analysis does include the potential to improve fuel economy through greater utilization of lightweight materials on heavier vehicles for which doing so would be unlikely to compromise highway safety. Further, NHTSA expects that basing CAFE standards on vehicle footprint would discourage manufacturers from reducing vehicle size. Therefore, although it does not have a reliable basis to estimate changes in crash frequency or severity, NHTSA expects that attribute-based standards would tend to improve, rather than degrade, highway safety.

Finally, the CDC recommended that NHTSA's analysis of potential health impacts be conducted in collaboration with public health officials. NHTSA discussed the CDC scoping comments with CDC officials on June 12, 2008. NHTSA appreciates the suggestion and the effort CDC took to submit scoping comments. After a thorough discussion, NHTSA believes it reached a high degree of understanding and assured CDC that health impacts would be included in various ways in the DEIS. NHTSA is confident that the consultants retained to assist in the analysis and development of the DEIS, along with its own staff, have the requisite knowledge and skills to effectively incorporate health issues into the document.

1.3.2.2 States

NHTSA received a number of comments representing the interests of states, including comments from the New York State Department of Transportation (Docket No. NHTSA-2008-0060-0012), the Washington State Department of Transportation (Docket No. NHTSA-2008-0060-0177), and the Minnesota Pollution Control Agency (Docket No. NHTSA-2008-0060-0011). NHTSA received a single, combined comment letter from the Attorneys General of the States of California, Connecticut, New Jersey, New Mexico, Oregon, and Rhode Island, the Commonwealth of Pennsylvania Department of

Environmental Protection, and the New York City Corporation Counsel (Docket No. NHTSA-2008-0060-0007.1).

The New York and Washington DOTs suggested that NHTSA consider the serious impacts of climate change and the consequent need for accelerated national fuel economy standards to be implemented both sooner than the year 2020 and to cover a greater number of vehicle types. They encouraged NHTSA to work with states and vehicle manufacturers to meet the common goals of economic stability and reduced transportation-related GHG emissions in an expedited way, including promoting the production of fuel-efficient vehicles and vehicles capable of using alternative fuels and advanced biofuels, and thereby advance the development of hybrid-electric, battery-electric, cleaner-diesel, and fuel-cell technologies. NHTSA appreciates the New York and Washington DOTs' interest in the development of new CAFE standards. As in other CAFE rulemakings, NHTSA will give careful consideration to comments from states, vehicle manufacturers, and other stakeholders. We also note that we engage regularly with other countries on matters related to vehicle research and regulation.

In response to the first comment regarding accelerated CAFE standards, as proposed in the NPRM and the DEIS, NHTSA is considering the environmental impacts of several alternatives covering a range of stringency for MY 2011-2015. The CAFE level required under the standards identified in the NPRM increases at an average annual rate of 4.5 percent – a rate fast enough to, if extended through 2020, exceed the 35 mile-per-gallon (mpg) requirement established in the EISA. The NPRM and the DEIS also include more stringent CAFE alternatives than those that would be established by the proposed standards. The proposed standards result in the maximum difference between benefits and costs, or net benefits. Each of the alternatives that would establish higher CAFE standards would result in larger fuel savings and emission reductions than those resulting from the proposed standards. But they would also result in lower net benefits than the proposed standards due to higher costs to society and could, therefore, fail to meet one or more of the statutory criteria applicable under EPCA.

The New York State DOT asked how Alternative 7, Technology Exhaustion, compares to the other alternatives under study. Alternative comparisons can be found in Section 2.5.

The Minnesota Pollution Control Agency suggested that the EIS discuss the incremental change in emissions for each alternative over the projected lifetime of the model year vehicles affected, the respective changes in atmospheric concentrations of GHGs in terms of CO₂ equivalents, and the direct and indirect impacts of these changes in concentrations. The comment further included the recommendation that changes in concentrations be incorporated into the range of emission scenarios prepared by the Intergovernmental Panel on Climate Change (IPCC), including other reasonably foreseeable U.S. emissions changes. This analysis is presented in Chapters 3 and 4.

The Minnesota Pollution Control Agency also recommended the use of the published marginal cost estimates found in the economics literature for the next emitted ton of CO₂ to provide a basis for assessing the cumulative environmental impacts of releases as monetized damages that might contribute to a larger global problem. Detailed estimates of economic benefits and costs of establishing alternative CAFE standards are presented in the PRIA (NHTSA 2008a). As that document explains, consistent with its treatment of pollutants such as nitrogen oxides, NHTSA's analysis applies an estimate representing damage costs, not marginal avoidance costs. As Chapter VIII of the PRIA describes, these estimates utilize the value recommended in a survey of nearly 100 published estimates of the social cost of carbon as a basis for assessing the monetized benefits of the reductions in CO₂ emissions projected to result from alternative CAFE standards.

The joint letter from the Attorneys General of California and several other states stated that the EIS must do more than simply present raw data on tons of GHGs emitted from the relevant sources. The

letter stated that the EIS must also educate the public about the scientific consensus on climate change and explain how the contribution made by the emissions from the standard, coupled with emissions from other foreseeable sources, would affect global warming (*i.e.*, cumulative emissions should be modeled to determine a potential change in temperature, and this change should be compared to climate scenarios outlined by the IPCC).

This NEPA document informs the public about the scientific consensus on climate change and explains how the incremental contribution made by the emissions from the standards, coupled with emissions from other foreseeable sources, would affect global warming. *See* Sections 3.4 and 4.4.

In another comment, the Attorneys General suggested that for each alternative, NHTSA report not only the emissions that would result if each manufacturer meets the standard, but the emissions that would result if a series of other reasonably foreseeable events occur. NHTSA should report a range of emissions based on how the standard might operate in the real world. EPA made a similar comment, and NHTSA's response is included above under the EPA comments.

The Attorneys General also referenced what they state to be significant new studies and research on the health-related effects, both direct and indirect, of global warming, and requested that NHTSA take these into account. NHTSA reviewed those studies and research and incorporated them as appropriate in Chapters 3 and 4.

The Attorneys General also requested that NHTSA describe and discuss the potential "tipping points" associated with global warming "that could create unstoppable, large-scale, disastrous impacts for the planet." The term tipping point refers to a situation in which the climate system reaches a point at which there is a strong and amplifying positive feedback from only a moderate additional change in driver, such as CO₂ or temperature increase. These tipping points could result in abrupt climate change, defined in Committee on Abrupt Climate Change (2002) (as cited in Meehl *et al.* 2007) to "occur when the climate system is forced to cross some threshold, triggering a transition to a new state at a rate determined by the climate system itself and faster than the cause."

While climate models do take positive (and negative, *i.e.*, dampening) feedback mechanisms into account, the magnitude of their effect and the threshold at which a tipping point is reached might not be well understood in some cases. In fact, MacCracken *et al.* (2008) notes that existing climate models may not include some critical feedback loops, and Hansen *et al.* (2007) states that the predominance of positive feedbacks in the climate system has the potential to cause large, rapid fluctuations in climate change effects. Therefore, it is important to discuss these mechanisms and the possibility of reaching points that could bring about abrupt climate change. The existence of these mechanisms and other evidence has led some climate scientists including Hansen *et al.* (2007) to conclude that a CO₂ level exceeding about 450 parts per million (ppm) is "dangerous."²⁴ Overall, however, the IPCC concludes that these abrupt changes are unlikely to occur this century... (Meehl *et al.* 2007). Whether these tipping points exist and the levels at which they occur are still a matter of scientific investigation.

Where information in the analysis included in the DEIS is incomplete or unavailable, NHTSA has relied on CEQ's regulations regarding incomplete or unavailable information (*see* 40 CFR § 1502.22(b)). In this case, the DEIS acknowledges that information on tipping points or abrupt climate change is incomplete, and the state of the science does not allow for a characterization of how the CAFE alternatives influence these risks, other than to say that the greater the emission reductions, the lower the risk of abrupt climate change.

²⁴ Defined as more than 1 degree Centigrade (°C) above the level in 2000.

1.3.2.3 Automobile Trade Associations

Automobile trade associations that provided scoping comments on the proposal included the National Automobile Dealers Association (NADA) (Docket No. NHTSA-2008-0060-0013) and the Alliance of Automobile Manufacturers (AAM) (Docket No. NHTSA-2008-0060-DRAFT-0033.1[1]). They noted that NHTSA is not responsible for GHG emissions, because vehicle usage is a voluntary choice, and that the scope of NHTSA's environmental analysis should be restricted to impacts that can clearly be attributed to the standards, with other factors, including fuel prices, manufacturer competition, and consumer preferences, held constant. EPA's comment on the same topic noted that fuel price was an important input into the setting of the standards which could have an effect on the environmental benefits estimated.

As indicated in its response to EPA, NHTSA agrees that fuel price can have an impact on the environmental benefits and, thus, should be considered. Reformed CAFE, and the process used to set the standards ensure that consumer preferences are maintained. The first step in setting standards involves collecting confidential manufacturers' product plan data. Vehicle manufacturers operate in a competitive environment. As profit-maximizing firms, they make product plans to reflect their forecast of what consumers want to buy. In the standard-setting process, NHTSA adds technologies at the individual vehicle-specific level to improve fleet-wide fuel economy. In order to preserve consumer preferences as predicted by vehicle manufacturers, the number and attributes of the vehicles, including their performance, are not altered. Reformed CAFE allows manufacturers to compete by producing a mix of vehicles they think consumers want to buy. No longer do manufacturers have to average out large vehicles with small ones to meet CAFE standards.

NADA also asked that all assumptions regarding the impacts on the rate of vehicle fleet turnover be provided, and that NHTSA forecast the introduction of vehicles meeting the standards into the fleet.

NHTSA's approach to analyzing the rate of vehicle fleet turnover is set forth in the NPRM. *See* 73 *FR* 24352, 24406-24407 (May 2, 2008).

Additionally, NADA requested that NHTSA consider any unique environmental impacts associated with the manufacturing and maintenance of vehicles affected by the proposed action, including alternative fuel vehicles. *See* Section 3.5 for an explanation of these issues.

The AAM stated that it disputes NHTSA's definition of the No Action Alternative as the alternative of maintaining CAFE standards at MY 2010 levels, because it believes that the baseline for comparison of the alternatives under NEPA should be set based on the scope of legal authority NHTSA has under EISA. The AAM recommended that NHTSA redefine the No Action Alternative to be consistent with the minimum CAFE standard increases needed to achieve a combined fuel economy level of 35 mpg by MY 2020. The AAM stated that such redefinition of the No Action Alternative would change NHTSA's calculation of the magnitude of the environmental impacts of the rulemaking, and might also change the agency's assessment of the significance of those effects. Accordingly, the AAM stated that it might be more appropriate for NHTSA to prepare a less elaborate EA, rather than a more-searching EIS.²⁵

NEPA requires that NHTSA examine a no action alternative that reflects the state of the environment if the action were not taken. Even though NHTSA is required under EISA to set new fuel economy standards, we must analyze a scenario in which NHTSA does not take this action, which serves

²⁵ *Id.* at 18-22.

as a baseline against which to compare the other alternatives (*see* Section 1.3.2.6 concerning NHTSA's decision to prepare an EIS).

Another issue raised by the AAM was the extent of NHTSA's analysis of global effects associated with CO₂ emissions. The AAM stated that it agrees with NHTSA's statement in the May 2008 NPRM that "the appropriate value to be placed on changes [in] climate damages caused by carbon emissions should be ones that reflect the change in damages to the United States alone."²⁶ The AAM interpreted this statement in the NPRM as a proposal by NHTSA "to limit analysis undertaken in connection with the rulemaking to effects within the United States' own borders."²⁷ The AAM stated that this conclusion should carry over to the NEPA analysis, and that it believes NHTSA should scale back the estimated harms in any studies of the global effects associated with carbon emissions.

NHTSA agrees in part regarding the estimates employed for SCC, as discussed in the NPRM. NHTSA disagrees, however, with the AAM's characterization of NHTSA's statement in the NPRM as being a proposal to limit the agency's environmental impact analysis under NEPA. Potential environmental impacts are global in this instance, and the analysis must look beyond the borders of the United States. The section of the NPRM preamble quoted by the AAM discussed valuation of SCC as an input into the Volpe model. NHTSA has an obligation under NEPA to "recognize the worldwide and long-range character of environmental problems."²⁸

NHTSA has considered the AAM's comment on the issue of the global effects of the agency's action. In the NPRM, NHTSA also requested "comment on its tentative conclusions for the value of the SCC emissions, the use of a domestic versus global value for the economic benefit of reducing CO₂ emissions, the rate at which the value of the SCC grows over time, the desirability of and procedures for incorporating benefits from reducing emissions of GHGs other than CO₂, and any other aspects of developing a reliable SCC value for purposes of establishing CAFE standards." *Id.* at 24414-24415.

Furthermore, an appropriate discussion of global climate change does not make sense if NHTSA limits analysis to the effects within the United States, because this environmental problem is inherently global in nature. Climate science focuses on accumulations of carbon emissions in the global atmosphere because the atmospheric concentration of GHGs is basically uniform across the globe (IPCC 1997). That is, carbon emissions from one nation disperse into the global atmosphere and have impacts in other nations, and conversely, benefits from emissions reductions in one nation are felt in all nations for the same reason. That said, NHTSA considers the AAM's comment as a suggestion to focus on environmental impacts within the United States, and agrees that this type of national rulemaking warrants specific discussion of regional U.S. impacts and how global climate change specifically affects the United States. Accordingly, NHTSA devoted a substantial section of the DEIS to such discussion.

The AAM argued in its comments that "the principal cumulative effects on which NHTSA's NEPA analysis should focus are those associated with the additive effects over the last decade or more of CAFE standards on the light-truck side, combined with those for this proposed rulemaking, which increases CAFE standards for both passenger cars and trucks." The AAM was primarily disputing the Ninth Circuit's decision in *Center for Biological Diversity v. NHTSA*, 508 F.3d 508, 550 (9th Cir. 2007),

²⁶ *See* 73 FR 24352, 24414.

²⁷ Alliance Comments, *supra* at 29.

²⁸ 42 U.S.C. § 4332(f). *See also* CEQ, *Council on Environmental Quality Guidance on NEPA Analyses for Transboundary Impacts* (July 1, 1997), at 3, available at <http://ceq.hss.doe.gov/nepa/reggs/transguide.html> (last visited June 16, 2008) (stating that "agencies must include analysis of reasonably foreseeable transboundary effects of proposed actions in their [NEPA] analysis of proposed actions in the United States.").

in which the Court concluded that “by allowing particular fuel economy levels ... NHTSA’s regulations are the proximate cause of [tailpipe GHG] emissions.”

In response to the AAM’s comment, NHTSA notes that the CEQ regulations define “cumulative impacts” as “the impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” 40 CFR § 1508.7.

In the DEIS, NHTSA addresses the cumulative impacts (through 2100) of MY 2011-2015 standards, NHTSA’s implementation of the CAFE Program through MY 2010, and “assumed” CAFE standards for MY 2016-2020. NHTSA has reviewed the available research and literature and has estimated the cumulative impacts on energy, air quality, and climate change. Our analysis considers both physical effects and resource impacts due to the cumulative impacts on climate change. Physical effects include changes in temperature, precipitation, and sea-level rise. Resource impacts include cumulative weather-based impacts on freshwater and terrestrial ecosystems and on human health and land-use patterns, and non-weather impacts. Our cumulative impacts analysis accounts for uncertainty and is consistent with CEQ regulations.

To this end, while this NEPA analysis considers some of the issues suggested by the AAM, including an analysis of the cumulative emissions impacts resulting from the CAFE Program since its inception (*see* Chapter 3) and an analysis of the standards and cumulative air quality impacts (in terms of criteria pollutant emissions, for example) on human health and the environment, NHTSA believes that the cumulative impacts analysis suggested by the AAM comments might be too narrow for our purposes.

1.3.2.4 Environmental Advocacy Groups

The Environmental Defense Fund (Docket No. NHTSA-2008-0060-0015) commented on the scope of NHTSA’s NEPA analysis in conjunction with the Northern Health Impact Resource Group, Physicians for Social Responsibility, American Public Health Association, and the Johnson County Health Department. The commenters suggested a framework and methodology for analyzing the potential health impacts of climate change related to the CAFE standards and suggested that NHTSA request technical assistance from agencies with special expertise in this area. They suggested that the health benefits of the reduction of the emissions of pollutants regulated under the Clean Air Act, including criteria pollutants, and generated at every stage of the fuel cycle (*i.e.*, fuel production, refining, transport, storage, and combustion in vehicle engines) be quantified using traditional risk assessment. The commenters asserted that proper quantification of the economic benefits of reducing these adverse health impacts might justify adoption of more stringent fuel economy standards.

The commenters also suggested that NHTSA consider the policy alternatives under consideration as conforming to (as one example) no action, moderate action, and stringent action pathways. These pathways might be comparable to the different emissions scenarios employed by the IPCC, and they are also consistent with NHTSA’s proposed categorization of alternative policy options. Assessment of health impacts could then be conducted for the degree of reductions in national or global GHG emissions associated with the relative stringency of each pathway, to provide decisionmakers with some useful insight into the health consequences of the various degrees of stringency associated with specific CAFE alternatives. Estimates of changes in incidence or prevalence of climate-sensitive health outcomes could be performed at 5-year intervals into the future, and inflation-adjusted costs associated with those health outcomes could also be calculated as a means of valuing the incremental contribution of the alternatives.

NHTSA has listed the alternatives in order of increasing stringency, as indicated by the mpg estimates associated with each. NHTSA has presented a full range of alternatives, from no action through a full consideration and exhaustion of the technological approaches NHTSA believes are currently available to increase CAFE (without regard to cost) consistent with the commenters' concerns. Further, the analysis included in the DEIS employs three IPCC scenarios to estimate the changes in CO₂ concentrations and temperature that are due to the alternatives. These scenarios (A2, A1B, and B1) represent a high, moderate, and low estimate of what future emissions levels might be. There is a great deal of uncertainty associated with estimating emissions levels in the year 2100, and the IPCC treats these scenarios (along with the other four scenarios) as equally probable. Given this uncertainty in the emission scenarios and in the analysis generally, it is not productive to estimate final impacts on human health or on other environmental areas because the range of error would obscure any reported differences in the alternatives. For these reasons, human health and environmental outcomes resulting from the CAFE alternatives are qualitatively assessed, and NHTSA's analysis includes a sense of the direction of the impacts and the relative magnitude by alternative, which will inform NHTSA's decisions on the standards.²⁹ Attempts to quantify impacts, including estimating health outcomes, would provide an unrealistic sense of precision that would not, in NHTSA's opinion, provide useful information for the decisionmaker or the public.

In the DEIS, NHTSA has analyzed both the criteria pollutants and mobile source air toxics (MSATs) by estimating the emissions levels of each generated under the CAFE alternatives. Upstream emissions³⁰ are included to the extent possible. (Upstream emissions of acrolein are not available.) Transportation conformity³¹ does not apply because neither the Federal Highway Administration (FHWA) nor the Federal Transit Administration (FTA) is taking the action. General conformity³² provides an explicit exception for rulemaking activities. Consequently, there is no requirement to analyze concentrations for the criteria pollutants. See the discussion of conformity in Chapter 3 for more information.

NHTSA's approach regarding MSATs follows that of the FHWA guidance on MSATs analysis issued in February 2006 and the approach generally followed by the Federal Aviation Administration. The FHWA stated that uncertainties associated with the exposure and health risk assessments, in addition to the fact that uncertainties are inherent in the emissions modeling process, raised concerns about the utility of studying MSATs beyond an emissions burden analysis. In addition, the NHTSA analysis demonstrates an overall reduction at the national level of both MSATs and criteria air pollutants, which should reduce health risk, making any further level of analysis of marginal benefit.

²⁹ See 42 U.S.C. § 4332(2)(B) (directing agencies to "insure that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations"); see also 40 CFR § 1502.22.

³⁰ Emissions associated with extraction, refining, storage, and distribution of the fuel.

³¹ The Transportation Conformity Rules (40 CFR 51 Subpart T), which apply to transportation plans, programs, and projects funded under title 23 U.S.C. or the Federal Transit Act. Highway and transit infrastructure projects funded by the Federal Highway Administration or the Federal Transit Administration usually are subject to transportation conformity.

³² The General Conformity Rules (40 CFR 51 Subpart W), which apply to all other federal actions not covered under transportation conformity. The General Conformity Rules established emissions thresholds, or *de minimis* levels, for use in evaluating the conformity of a project. If the net emission increases due to the project are less than these thresholds, then the project is presumed to conform and no further conformity evaluation is required. If the emission increases exceed any of these thresholds, then a conformity determination is required. The conformity determination could entail air quality modeling studies, consultation with EPA and state air quality agencies, and commitments to revise the State Implementation Plan or to implement measures to mitigate air quality impacts.

Health costs are already included in the modeling process by which NHTSA analyzes alternatives for the CAFE standard. Using a process that maximizes net benefits, NHTSA assesses the societal costs and benefits associated with each of the alternatives. Included in the societal costs are damages to health.

Finally, NHTSA received scoping comments from CDC and EPA and has consulted with each agency. NHTSA has also retained a nationally recognized consulting firm to assist with the analysis. NHTSA believes that we have or have retained the requisite expertise and knowledge to address the health and environmental impacts as required under NEPA.

1.3.2.5 Individuals

Scoping comments from individuals included approximately 1,737 letters that were similar in form and content. These letters recommended that NHTSA base the new standards on what the commenters considered more realistic gas prices and encourage the domestic automobile manufacturers to speed up the production of more fuel-efficient automobiles.

NHTSA's analysis of alternative CAFE standards relies on fuel price forecasts reported in the U.S. Energy Information Administration's (EIA's) *Annual Energy Outlook*, an official U.S. Federal Government forecast that is widely relied upon by federal agencies in their analysis of proposed regulations. The alternative CAFE standards analyzed in the NPRM and the PRIA were developed and evaluated using fuel price forecasts from EIA's *Annual Energy Outlook 2008 Revised Early Release*, and NHTSA will consider any subsequent revisions in the final edition of *Annual Energy Outlook 2008* in preparing the Final Rule and Final Regulatory Impact Analysis (FRIA). Extensive tests of the effect of higher fuel prices on the stringency of the optimized CAFE standards, as well as upon the resulting fuel savings, reductions in CO₂ emissions, and total economic benefits are reported in Tables IX-5a and IX-5b of the PRIA. As to the timeline for production of more fuel-efficient vehicles, the standards NHTSA proposed increase at a rate that, if sustained through 2020, would exceed the 35 mpg minimum average requirement specified by EISA.

Comments from private individuals included a letter from Susan and Yuli Chew (the Chews) (Docket No. NHTSA-2008-0060-0014) suggesting that the fuel price assumptions used by NHTSA are out of date. This comment is similar to the comments of other individuals and is addressed above.

The Chews also suggested that the assumptions of the buyer's payback calculation are flawed. This comment appears to refer to the 4.7- and 4.2-year payback periods for the passenger-car and light-truck CAFE standards reported in PRIA Table IX-10, p. IX-14. These payback periods are calculated from the increases in fuel economy, annual fuel savings, and value per gallon of fuel saved at forecast retail fuel prices for the standards. They are thus empirical estimates of the actual time required for buyers of new vehicles to recoup the higher purchase prices of those vehicles in the form of fuel cost savings, rather than assumptions about buyers' time horizons for valuing fuel savings.

The Chews also questioned the "carry-forward" and "carry-back" credits. While NHTSA cannot precisely estimate the potential environmental impacts of discounting credits, NHTSA believes its analysis of how the various compliance flexibilities might affect the potential environmental impacts of the standards spans the likely range of impacts that would be associated with discounting credits. The requirements covering the use of credits for alternatively fueled vehicles are explained in the EPCA. NHTSA does not have discretion to discount credits in future years. The point, however, will become moot as these credits are being phased out under the EISA, as noted by the commenter. They will no longer be allowed at all for MY 2020 vehicles.

The Chews suggested that the effect of ethanol is not properly discussed in terms of air quality and natural and human resources and that the benefit of alternative-fuel vehicles has been magnified, as only small portions of Midwest states have any E85³³ infrastructure in place.

In setting CAFE standards, NHTSA sets the fuel economy targets manufacturers are required to meet but does not specify the technologies required to meet those targets. Companies are provided credits under the Alternative Motor Fuels Act, but Congress is phasing out those credits. Even if the manufacturers employ the production of vehicles that can run on 85 percent ethanol in their strategies to meet the new targets, the existence of these vehicles does not necessarily change the production of ethanol, because consumers would have to choose to fill their vehicles with E85 fuel, and also have it available at their fueling stations.

NHTSA believes that the extent to which ethanol will actually be used as a transportation fuel will primarily be determined by its availability at retail fueling stations and its retail price in relation to that of gasoline. Because the availability of ethanol and its price in relation to that of gasoline are unlikely to be affected substantially by the stringency of CAFE standards, the use of ethanol is similarly unlikely to differ substantially among the alternative CAFE standards considered for MY 2011-2015. Thus, while the volume of ethanol that is produced, distributed, and consumed could substantially affect total emissions from the production and use of transportation fuels, this effect is not likely to differ substantially among alternative CAFE standards. As a consequence, the extent of ethanol use is unlikely to affect the changes in total emissions from production and use of transportation fuels resulting from alternative CAFE standards, or the environmental impacts associated with those changes in emissions.

The Chews also stated that the benefits are almost twice as much as the costs for MY 2011-2015, so the target should be adjusted to be more aggressive than planned. Regarding these benefits, NHTSA's NPRM reflects the best information available to NHTSA when the analysis was performed, and the standards reflect those benefits. NHTSA has requested comment on its estimate of benefits and costs, and on its analytical methods. After reviewing these comments, which are due on July 1, 2008, NHTSA will revisit its analysis in preparing the final rule.

The Chews suggested that the phasing out of the fuel economy incentives by dual-fuel vehicles (*e.g.*, E85) is welcomed and overdue. Dual-fuel vehicles are designed to run on gasoline or an alternative fuel. By law, manufacturers of these vehicles can lower their CAFE requirements by a certain amount within the limits specified in statute. To assess the environmental impacts of in-use operation of dual-fuel vehicles, data detailing the operation of the vehicle using the alternative fuel would be necessary. Unfortunately, such data depend on each individual's use of the dual-fuel vehicle, and are not available.

1.3.2.6 Other Comments

There were several comments submitted that go beyond the scoping process under NEPA or address regulatory issues within the NPRM or the PRIA.

The AAM (Docket No. NHTSA-2008-0060-DRAFT-0033.1[1]) submitted comments suggesting that an EIS is not warranted, and that an EA would be adequate.

NHTSA's rationale for preparing an EIS is explained in its NOI to prepare an EIS.³⁴

³³ Automobile fuel that is 85 percent denatured ethanol and 15 percent gasoline.

³⁴ 73 *FR* 16615, 16616 (March 28, 2008).

The AAM also stated its belief that because the setting of CAFE standards under EPCA involves consideration of environmental factors, the “functional equivalence doctrine” applies to NHTSA’s mandate for setting CAFE standards.³⁵ The AAM maintains that the functional equivalence doctrine is applied by courts to eliminate the need for an agency to perform NEPA analysis where the agency’s Congressional mandate already involves specific procedures for considering the environment that offer the functional equivalent of an EIS.³⁶ According to the AAM, courts have ruled that EPA regulation under the Clean Air Act is the functional equivalent of NEPA analysis, making separate application of NEPA by EPA unnecessary.

In those instances where courts have found an agency exempt from NEPA requirements via the functional equivalence doctrine, the doctrine has been narrowly drawn. For example, the D.C. Circuit has repeatedly described the functional equivalence doctrine as a narrow exemption that is applicable “when the agency’s organic legislation mandates procedures for considering the environment that are ‘functional equivalents’ of the NEPA process.”³⁷ Other circuit courts have adopted even more narrow interpretations of the functional equivalence doctrine, construing it to mean that one process requires the same steps as another.³⁸ Although NHTSA considers environmental impacts when setting CAFE standards, EPCA does not require explicit consideration of environmental impacts; rather, the analysis is one that the agency has conducted in the context of evaluating the Nation’s need to conserve energy.³⁹ EPCA does not require a level of environmental analysis commensurate with the requirements of NEPA. Moreover, courts have long held that NEPA applies except in limited circumstances.⁴⁰ Consequently, NHTSA declines to adopt the AAM’s suggestion, and has prepared a DEIS to consider the environmental impacts of the standards in the context of NHTSA’s CAFE Program. The DEIS will aid the agency in completing a robust analysis of the environmental impacts of the rulemaking for MY 2011-2015 CAFE standards.

The AAM also suggested that NHTSA consider an alternative tied to the “least capable manufacturer” approach that was applied prior to the advent of Reformed CAFE. NHTSA does not adopt this approach for the following reasons. NHTSA’s earlier “Unreformed CAFE” standards specified a “one size fits all” (uniform) level of CAFE that applied to each manufacturer and that was set with particular regard to the lowest projected level of CAFE among the manufacturers that have a substantial

³⁵ Comments of the Alliance of Automobile Manufacturers, Document ID No. NHTSA-2008-0600-0176, 12-15 (June 2, 2008).

³⁶ *Id.* at 5-6.

³⁷ *American Trucking Assns. v. EPA*, 175 F.3d 1027, 1042 (D.C. Cir. 1999) (quoting *Izaak Walton League of America v. Marsh*, 655 F.2d 346, 367 n.51 (D.C. Cir. 1981)); *Amoco Oil Co.*, 501 F.2d at 749 (quoting *Int’l Harvester Co. v. Ruckelshaus*, 478 F.2d, 615, 650 n.130 (D.C. Cir. 1973)); *Portland Cement Assn.*, 486 F.2d at 384-387 (describing the functional equivalence doctrine as a narrow exemption); *Environmental Defense Fund v. EPA*, 489 F.2d 1247, 1256 (D.C. Cir. 1973).

³⁸ *Douglas County v. Babbitt*, 48 F.3d 1495, 1504 n.10 (9th Cir. 1995); see also *State of Wyoming v. Hathaway*, 525 F.2d 66, 73-74 (10th Cir. 1976) (affirming the trial court’s finding of no functional equivalence).

³⁹ See *Center for Biological Diversity v. NHTSA*, 508 F.3d 508, 547 (9th Cir. 2007) (describing as complementary EPCA’s goal of energy conservation and NEPA’s goal of helping public officials make decisions that are based on an understanding of environmental consequences); *Massachusetts v. EPA*, 127 S. Ct. 1438, 1462 (2007) (categorizing EPCA’s requirement to set CAFE standards as “DOT’s mandate to promote energy efficiency” and distinguishing this mandate as “wholly independent” of the Clean Air Act’s command that EPA protect the public’s health and welfare); see also *Center for Auto Safety v. NHTSA*, 793 F.2d 1322, 1324-1325 n.12 (D.C. Cir. 1986) (listing the four statutory factors NHTSA is to consider when determining “maximum feasible” fuel economy, and noting approvingly that NHTSA interpreted the “need of the Nation to conserve energy” factor as requiring consideration of, among other issues, the “environmental ... implications of our need for large quantities of petroleum”).

⁴⁰ See *Pacific Legal Foundation v. Andrus*, 657 F.2d 829, 833 (6th Cir. 1981); *Calvert Cliffs’ Coordinating Committee, Inc. v. U.S. Atomic Energy Commission*, 449 F.2d 1109, 1114-1115 (D.C. Cir. 1971).

share of the market. The manufacturer with the lowest projected CAFE level is typically known as the “least capable” manufacturer. However, NHTSA’s 2006 CAFE standards for light trucks adopted a different “Reformed CAFE” approach. (71 *FR* 17566 [April 6, 2006]). EISA recently codified that approach, requiring that all CAFE standards be based on one or more vehicle attributes. (49 U.S.C. § 32902(b)(3)(A); *see* 73 *FR* 24352, 24354-24355 [May 2, 2008] [discussing NHTSA’s proposal to base CAFE standards on the attribute of vehicle size, as defined by vehicle footprint].)

As NHTSA explained when proposing Reformed CAFE standards for MY 2008-2011 light trucks, “[u]nder Reformed CAFE, it is unnecessary to set standards with particular regard to the capabilities of a single manufacturer in order to ensure that the standards are technologically feasible and economically practicable for all manufacturers with a substantial share of the market. This is true both fleet wide and within any individual category of vehicles.” *See* 70 *FR* 51414, 51432 (August 30, 2005). Specifically:

There is no need under Reformed CAFE to set the standards with particular regard to the capabilities of the “least capable” manufacturer. Indeed, it would often be difficult to identify which manufacturer should be deemed the “least capable” manufacturer under Reformed CAFE. The “least capable” manufacturer approach was simply a way of implementing the guidance in the conference report [part of EPCA’s legislative history]⁴¹ in the specific context of Unreformed CAFE....

...The very structure of Reformed CAFE standards makes it unnecessary to continue to use that particular approach in order to be responsive to guidance in the conference report. Instead of specifying a common level of CAFE, a Reformed CAFE standard specifies a variable level of CAFE that varies based on the production mix of each manufacturer. By basing the level required for an individual manufacturer on that manufacturer’s own mix, a Reformed CAFE standard in effect recognizes and accommodates differences in production mix between full- and part-line manufacturers, and between manufacturers that concentrate on small vehicles and those that concentrate on large ones.

There is an additional reason for ceasing to use the “least capable” manufacturer approach. There would be relatively limited added fuel savings under Reformed CAFE if we continued to use the “least capable” manufacturer approach even though there ceased to be a need to use it....

(70 *FR* 51433).

In addition, the AAM’s suggested approach would not result in the increases in fuel economy mandated by EISA – namely, 35 mpg by MY 2020.

In light of the fact that Congress recently codified the Reformed CAFE approach for both passenger cars and light trucks, and for all of the reasons stated above, NHTSA does not consider in detail an alternative tied to the historic “least capable manufacturer” approach.

Other comments, described below, suggested that NHTSA’s NEPA analysis consider certain economic or social issues that are beyond the scope of NEPA.

⁴¹ *See* 70 *FR* 51414, 51425-51426 (August 30, 2005) (discussing the conference report).

The AAM suggested that appropriate cumulative effects should include “The economic disbenefits and counterproductive/unintended consequences of CAFE standard increases,” specifically including, “at a minimum, ... the cumulative effects in this regard stemming from employment losses and associated health effects, for both this current proposed rule and the 2006 light truck rule. The same is true as to cumulative safety disbenefits and cumulative environmental disbenefits in terms of increased criteria pollutant emissions traceable to the fleet turnover and rebound effects.”

The AAM also suggested that NHTSA consider what it characterized as additional categories of “environmental” effects in the DEIS, including the quality of life of unemployed automotive industry workers and fleet turnover.

The CDC suggested that “health and well-being”-related impacts of decreasing dependency on motor vehicle fuel, such as mental health benefits, reduced stress, and increased economic stability be evaluated in the DEIS. NHTSA discussed this comment with CDC on June 12, 2008. In particular, NHTSA and CDC discussed the potential for human health impacts in two areas – namely, the potential for social instability resulting from energy concerns and for changes in family expenditures related to energy. Further, in the discussion with CDC, the difficulty in addressing such issues was acknowledged. NHTSA agreed to examine the source provided by CDC concerning health issues related to petroleum scarcity (*see* Chapter 3).

Courts have generally held that economic and social issues need only be considered if they directly interrelate to the effects on the physical environment.⁴² Because these issues raised by the AAM and CDC do not stem from effects on the physical environment, they are not addressed in this document.

The Attorneys General suggested the additional alternative of downweighting for all vehicles, not just vehicles weighing more than 5,000 pounds, and stated that there is strong evidence that downweighting of vehicles does not make them less safe. As discussed above, other comments also raised the downweighting alternative and related concerns. Chapter 2 explains NHTSA’s rationale for choosing alternatives, and explains why NHTSA believes that the safety risks with downweighting preclude its selection as a reasonable alternative.

The Attorneys General also requested that NHTSA expand its analysis of reduced vehicle weight as a means of improving fuel economy. As mentioned above and discussed in the NPRM, NHTSA’s analysis does include the potential to improve fuel economy through greater utilization of light-weight materials on heavier vehicles for which doing so would be unlikely to compromise highway safety.

Other comments refer to issues NHTSA expects to address in the final rule. These include comments from states concerning new technologies, comments from the AAM concerning the proper construction of the term, “ratably,” and comments from individuals.

1.3.3 Summary of Public Comments on the DEIS

On June 26, 2008, NHTSA submitted to EPA a DEIS that disclosed and analyzed the potential environmental impacts of new CAFE standards and reasonable alternative standards in the context of NHTSA’s CAFE Program pursuant to CEQ NEPA implementing regulations, DOT Order 5610.1C, and NHTSA regulations. On July 2, 2008, NHTSA published a *Federal Register* Notice of Availability announcing the availability of the DEIS. NHTSA’s Notice of Availability also made public the date and location of a public hearing, and invited the public to participate at the hearing on August 4, 2008, in

⁴² *See, e.g., Ashley Creek Phosphate Co. v. Norton*, 420 F.3d 934, 944 (9th Cir. 2005); *Hammond v. Norton*, 370 F. Supp.2d 226, 243 (D.D.C. 2005).

Washington, DC. On July 3, 2008, EPA issued its Notice of Availability for the DEIS, triggering the 45-day public comment period. In accordance with CEQ implementing regulations, the public was invited to submit written comments on the DEIS until August 18, 2008.

NHTSA mailed approximately 200 copies of the DEIS to interested parties, including federal, state, and local agencies; elected officials; environmental and public interest groups; Native American tribes; and other interested individuals, as listed in Chapter 9 of the DEIS.

A total of 44 commenters spoke at the hearing. In addition, NHTSA received 66 written comment documents from interested stakeholders, including EPA, the CDC, state and local agencies, elected officials, automobile trade associations, organizations, and private citizens. The transcript from the public hearing and written comments submitted during the public-comment period are part of the administrative record, and are available on the Federal Docket Web site at <http://www.regulations.gov>, Reference Docket No. NHTSA-2008-0060. Chapter 10 of this FEIS contains public comments on the DEIS and NHTSA's responses to those comments. Appendix D of this FEIS provides a copy of each written comment document and the public hearing transcript in their entirety.

Commenters raised a wide variety of issues regarding the DEIS. For example, some commenters were concerned about how NHTSA's alternatives relate to EPCA's requirement to establish the "maximum feasible average fuel economy." Other commenters had questions about how NHTSA had fulfilled its statutory requirements under NEPA, specifically in regard to public involvement and the timing of the EIS and CAFE rulemaking. A few commenters questioned the need for the agency to produce an EIS, citing the Government's (at the time) pending en banc petition for review of the Ninth Circuit Court of Appeals decision (*Center for Biological Diversity v. NHTSA*, 508 F.3d 508 [9th Cir. 2008], vacated and withdrawn, 2008 WL 3822966 [9th Cir. 2008] [denying the government's petition as moot]), while one commenter suggested that NHTSA should prepare an EA instead of an EIS.

NHTSA received a number of comments on various aspects of the Volpe model, many expressing concern about the economic assumptions that were input to the model. The most common of these input-related comments included concerns regarding the values assigned to fuel price, social cost of carbon, discount rate, and rebound effect; the technologies and vehicle attributes considered by the model and their associated costs; assumptions about the types of vehicles on the road in the future (particularly the market penetration of hybrids); and the use of auto manufacturers' product plans. Commenters also suggested that the Volpe model consider the military and national security costs associated with ensuring oil supplies, consider a different method to account for consumer demand and behavior directly, and use related changes to U.S. vehicle fleet turnover.

NHTSA received comments on the alternatives in the DEIS. Commenters questioned NHTSA's definition of the No Action Alternative (Alternative 1), specifically regarding the projected baseline mpg and other factors considered, or not considered, in its definition. Commenters also questioned how the Optimized Alternative (Alternative 3) represents an optimization of cost and benefits. Some commenters recommended that NHTSA select alternatives below Optimized, while others recommended that NHTSA use the requirement of "ratable" to derive standards that ratably increase to 35 mpg. Multiple commenters recommended that NHTSA select alternatives above Optimized, including the Total Costs Equal Total Benefits Alternative (Alternative 6). Several commenters argued for adoption of the Technology Exhaustion Alternative (Alternative 7), while others did not believe this alternative represented a true exhaustion of technological options. Some commenters stated that NHTSA did not consider a reasonable range of alternatives. In addition, there were comments regarding the alternatives' relationship to the "maximum feasible fuel economy standard." Some commenters requested that NHTSA consider new alternatives, such as alternatives that might not be within NHTSA's jurisdiction or that more aggressively raised the fuel economy standards so as to reach or exceed 35 mpg by 2015.

NHTSA received comments concerning the methodology for analyzing air quality impacts and associated health costs. Commenters noted that the DEIS did not include full-scale photochemical air quality modeling and, therefore, did not characterize the ambient air quality impacts or health outcomes associated with each alternative. Commenters also expressed concern that the dollar-per-ton values used to reflect the monetized health-related benefits associated with criteria pollutant emission reductions omitted a number of unquantified health and environmental effects.

Many commenters referenced suggestions made by the scientific community that CO₂ emissions should be reduced 80 percent by 2050 to mitigate the worst effects of climate change. Commenters suggested that this goal be used as a reference point from which to measure greenhouse gas reductions achieved through the different alternatives presented in the DEIS. Commenters stated that this contextual comparison would be more appropriate than comparing the alternatives based on their contribution to the reduction in global temperature and sea-level rise.

Other commenters suggested updated methodologies that could be employed in the FEIS. For example, some commenters recommended re-running the analysis using the revised version (5.3) of MAGICC (Model for the Assessment of Greenhouse-gas Induced Climate Change). Commenters also recommended running MAGICC using a range of climate sensitivities to reflect the 2.0 to 4.5 °C range projected in the IPCC report. Many commenters questioned the accuracy of the “scaling approach” implemented in the DEIS, which assumed a linear relationship between emission levels and climate responses. Commenters further stated that the DEIS did not fully address the issue of tipping points.

A few commenters also stated that the proposed rulemaking would substantially impact endangered species and that a proper analysis of these impacts was absent from the comparison of the impacts of each alternative in the DEIS.

In addition to comments on the DEIS, NHTSA received a number of comments regarding the rulemaking. Some of these comments dealt with the issue of federal preemption of state laws, arguing that NHTSA’s rulemaking should not preempt state regulation of GHG emissions from automobiles. Other comments on the rulemaking objected to NHTSA’s vehicle footprint approach, either suggesting a more inclusive consideration of vehicle attributes, such as towing capacity, or questioning the use of a size-based system that has the built-in risk of manufacturers upsizing vehicles to achieve lower fuel economy targets.

In Chapter 10 of this FEIS, NHTSA sets forth excerpts of the comments on the DEIS, followed by NHTSA’s responses to those comments. Written comments and the public hearing transcript can be viewed in their entirety in Appendix D of this FEIS.

1.3.4 Submission of the Final EIS and Next Steps

NHTSA is mailing this FEIS to the agencies, individuals, and organizations on the distribution list provided in Chapter 9, and submitted it to EPA for formal issuance of a Notice of Availability. No sooner than 30 days after EPA publishes a Notice of Availability of the FEIS in the *Federal Register*, NHTSA will publish a final CAFE rule and Record of Decision. The Record of Decision will state and explain NHTSA’s decision and describe NHTSA’s consideration of applicable environmental laws and policies.